

New Protocol on Blinding Laser Weapons

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Introduction

On 13 October 1995, the first Review Conference of the 1980 Convention on Certain Conventional Weapons¹ (CCW) adopted during its first session in Vienna² a new fourth Protocol entitled "Protocol on Blinding Laser Weapons".³ The 1980 Convention comprises a framework Convention (containing technical provisions such as applicability, entry into force and amendment) and annexed Protocols containing the substantive rules relating to certain weapons.⁴ Although many weapons had been discussed during the preparatory stages of this Convention, only three Protocols were adopted in 1980.⁵ However, the structure chosen enabled new Protocols to be added in order to accommodate future weapons which needed to be prohibited or otherwise regulated.

¹ Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May be Deemed to be Excessively Injurious or to Have Indiscriminate Effects, adopted on 10 October 1980 and opened for signature on 10 April 1981. For the text of the Convention, see *International Review of the Red Cross (IRRC)*, No. 220, January-February 1981, p. 41.

² Held from 25 September to 13 October 1995. Subsequent sessions of the Review Conference, which concentrated on the problem of anti-personnel landmines and the possible amendment of Protocol II, were held in Geneva from 15 to 19 January and from 22 April to 3 May 1996.

³ CCW/CONF.I/7. The text of the Protocol is annexed to this article.

⁴ For greater detail on the Convention and its Protocols, see *IRRC*, No. 279, November-December 1990, pp. 469-577.

⁵ Protocol I on Non-Detectable Fragments; Protocol II on Prohibitions or Restrictions on the Use of Mines, Booby Traps and Other Devices; Protocol III on Prohibitions or Restrictions on the Use of Incendiary Weapons.

The International Committee of the Red Cross (ICRC) was particularly active in the development of the new fourth Protocol. This article outlines the work that the ICRC undertook in order to establish the facts as regards the likely effects of new blinding laser weapons and how the ICRC sought the necessary international support⁶ for a new Protocol on these weapons. It then describes the *travaux préparatoires* for the Protocol, namely the discussions during the Review Conference process that led to the wording of each Article of the new Protocol.⁷ Finally it comments on the Protocol's likely influence in banning blinding as a method of warfare.

Putting blinding laser weapons on the international agenda

Twenty-fifth International Conference of the Red Cross

The ICRC's attention was first drawn to this issue during the 25th International Conference of the Red Cross held in 1986. The governments of Sweden and Switzerland submitted a draft resolution which would have pronounced the anti-personnel use of laser weapons to be illegal because they would cause unnecessary suffering or superfluous injury.⁸ This wording was not accepted because of opposition from a few States interested in such weapons; there was little discussion because the vast majority of States were unaware of developments and thought that such weapons were science-fiction.⁹ In the end the resolution simply appealed to governments to exercise care not to violate standards in international humanitarian law in the development of new

⁶ Including the support of persons and institutions which helped influence governments.

⁷ A number of facts stated in this article are based on the experience of the author during the negotiating process. At the time of writing there are no comprehensive official records of the *travaux préparatoires* for Protocol IV of the CCW.

⁸ The draft resolution in its section B, operative paragraph 4, "notes that the development of laser technology for military use includes a risk that laser equipment of armed forces can be specifically used for anti-personnel purposes on the battlefield, such as causing permanent blindness of human beings, and that such use may be considered already prohibited under existing international law". Doc. CI/2.6/PR3, Commission I, Item 2.6.

⁹ The possible use of lasers in outer space in the context of the Strategic Defense Initiative was generally known, but not developments for battlefield anti-personnel use.

weapons.¹⁰ Subsequently, the government of Sweden raised the issue at the First Committee of the forty-first and the forty-second sessions of the United Nations General Assembly,¹¹ proposing a prohibition of the anti-personnel use of laser weapons which met with the same indifference as the original proposal before the 25th International Conference of the Red Cross and probably for the same reasons.

Expert meetings convened by the ICRC

After the 25th International Conference the ICRC began to look out for articles in specialized literature to see if there was a development of anti-personnel laser weapons intended to blind. As this indeed seemed to be the case,¹² it decided to hold a meeting of experts in 1989¹³ to establish whether such weapons were likely to be manufactured on any scale, whether they would indeed blind in most cases of anti-personnel use, whether such use would already be a violation of international humanitarian law and whether a legal regulation was possible or desirable. This

¹⁰ Resolution VII, paras. 6 and 7, read as follows: "notes that some governments have voiced their concern about the developments of new weapons technologies the use of which, in certain circumstances, could be prohibited under existing international law; appeals to governments, with a view to meeting the standards laid down in international humanitarian law, to coordinate their efforts to clarify the law in these fields and exercise the utmost care in the development of new weapons technologies", *IRRC*, No. 255, November-December 1986, p. 350.

¹¹ Verbatim record of the thirty-third session of the First Committee, UN Doc. A/C.1/41/PV.33 of 21 November 1986, and of the thirty-fourth meeting, UN Doc. A/C.1/42/PV.34 of 9 November 1987. Sweden's statement at the thirty-fourth session of the First Committee of the General Assembly was as follows: "There seems to be a risk of developing lasers for anti-personnel purposes on the conventional battlefield. It is already technically possible to develop and manufacture specific anti-personnel laser weapons, the main effect of which would be to blind the adversary's soldiers permanently. It can be argued that methods of warfare which are intended and may be expected to cause irreversible injury to the human eye are already prohibited under existing principles of humanitarian law. These principles should be laid down in an international instrument in order effectively to prevent such methods of warfare. There is therefore a need to elaborate a prohibition on the use of battlefield laser weapons specifically designed for anti-personnel use. On the other hand, it is evident that anti-matériel laser weapons would not, as such, violate international standards, even if they were to have secondary anti-personnel effects". In 1987, Sweden distributed a paper on this issue entitled *Battlefield laser weapons and the question of anti-personnel use of such weapons*; on file with the author.

¹² There were several articles to this effect, e.g. in *The Army*, August 1985; *Infantry*, March-April 1987; *Military Review*, May 1987; *Defense News*, October 1987.

¹³ First Round Table of Experts, 19-21 June 1989, which brought together technical and military experts in laser weapons, ophthalmologists, psychologists specialized in the effects of blindness and specialists in international humanitarian law.

meeting turned out to be the first of four as the participants in this meeting recommended that these issues be investigated further.¹⁴ The second meeting¹⁵ undertook a detailed study of the technical and medical aspects of the use of battlefield laser weapons. The third¹⁶ reviewed statistics of injuries suffered in battle, analysed the functional and psychological effects of different types of disabilities and assessed the particular problems that battle-induced blindness was likely to cause. This third meeting was considered necessary because States which were against any regulation of battlefield laser weapons argued that it was better to be blinded than killed and that blindness was no worse than other injuries likely to be sustained on the battlefield.¹⁷ The last meeting in April 1991¹⁸ discussed, on the basis of the material gathered in the previous two meetings, whether the anti-personnel use of laser weapons to blind would be already against the law, in particular the rule prohibiting the use of weapons of a nature to cause unnecessary suffering or superfluous injury, and whether for policy reasons it would be appropriate to have a treaty regulation of such weapons. Although there was a division of opinions as to whether such a use of lasers would already be illegal, the vast majority of participants were of the opinion that a specific legal regulation would be advisable and suggested an additional Protocol to the 1980 CCW as being the most sensible course to follow.

The 26th International Conference of the Red Cross and Red Crescent was due to take place just a few months after this meeting,¹⁹ and as at the time there was no knowing whether there would be a review conference of

¹⁴ A short summary of the findings of the four meetings is to be found in *IRRC*, No. 299, March-April 1994, pp. 150-153.

¹⁵ First working group of experts (31 May-1 June 1990), which comprised highly specialized experts in lasers and their effects on the eye. See the report *Blinding Weapons: reports of the meetings of experts convened by the International Committee of the Red Cross on Battlefield Laser Weapons 1989-1991*, hereinafter *Blinding Weapons: reports*, ICRC (L. Doswald-Beck, ed.), Geneva, 1993.

¹⁶ Second working group of experts (5-7 November 1990), which comprised doctors, surgeons and psychiatrists with experience with different types of war injuries and disabilities, *ibid.*, pp. 175-317.

¹⁷ See, for example, the position of the US Judge Advocate General in "Memorandum of Law: The Use of Lasers as Antipersonnel Weapons", *The Army Lawyer*, November 1988, p. 4. Reproduced in *ibid.*, pp. 367-371.

¹⁸ Second Round Table of Experts, 9-11 April 1991, which was attended in a personal capacity by 37 government officials from 22 countries and six of the scientists who had participated in the previous working group meetings. See *ibid.*, pp. 319-366.

¹⁹ The fourth meeting of experts was held in April 1991 and the 26th International Conference was due to take place in Budapest in November-December 1991.

the 1980 CCW in the near future,²⁰ the ICRC decided to submit the question to the 26th International Conference,²¹ together with a draft resolution which would have outlawed blinding as a method of warfare²². As the Conference was suspended,²³ the proposed resolution was neither negotiated nor adopted. However, some initial discussions showed that a few States were very reticent to adopt such a resolution, and it was clear that despite the recommendations made by the majority of participants at the fourth meeting of experts a formal decision by governments was going to be difficult to achieve. This was not only because of objections by the few governments that were actively interested in using anti-personnel laser weapons, but also because of the general indifference of many other governments that were not interested in a potential problem the urgency of which had not been proved. Linked to this was a general unwillingness to add to existing humanitarian law treaties as a matter of principle.

Another not inconsiderable problem was the scepticism the ICRC frequently encountered as to the pertinence and real application of the rule prohibiting the use of weapons causing unnecessary suffering. Quite apart from the difficulty of defining this notion and applying it to a particular weapon, many government officials had difficulty in accepting the idea that there were limits on the damage that could be inflicted on soldiers during actual hostilities, although the need to protect civilians as much as possible from the effects of weapons was readily accepted in principle. The fact that lasers are not indiscriminate in nature and that the blinding lasers in question would not inflict death created a particular difficulty in this regard.²⁴

²⁰ The CCW Convention does not provide for automatic review (Article 8 of the framework Convention).

²¹ Document drawn up by the ICRC for the 26th International Conference of the Red Cross and Red Crescent (1991) and entitled *Prohibitions or Restrictions on the Use of Certain Weapons and Methods in Armed Conflicts: Developments in Relation to Certain Conventional Weapons and New Weapons Technologies*, Doc. C.1/6.3.2/1, pp. 6-18. Several of the experts attending the fourth expert meeting also suggested submitting the question to this Conference.

²² Doc. C.1/6.3.2/Res.1. The draft, dated 1 November 1991, was circulated to all States prior to the intended conference for comment. The operative paragraphs read as follows: "1. *condemns* blinding as a method of warfare; 2. *considers unacceptable* the use of weapons against persons with the sole or principal intention of damaging their eyesight; 3. *urges* States not to produce weapons to be used for this purpose; 4. *urges* particular care in the use of weapons systems that are dangerous for eyesight so as to avoid as far as possible accidental blinding".

²³ It finally took place in Geneva in December 1995.

²⁴ On the difficulty of achieving a specific regulation of new weapons, see comments in ICRC document, *op. cit.* (note 21), pp. 4-5, and also L. Doswald-Beck, "Obstacles to regulating new weaponry: battlefield laser weapons", in H. Fox and M. Meyer (eds.), *Effecting Compliance, Armed Conflict and the New Law*, Vol. II, The British Institute of International and Comparative Law, London, 1993, p. 107.

However, the meetings of experts had given the ICRC sufficient information as to the horrific effects of blinding laser weapons both on their victims and on society and the fact that such systems, being small arms, would be likely to proliferate widely; it accordingly felt that it could mobilize sufficient international support for a legal regulation.

The ICRC therefore decided to publish in one volume the full findings of the four meetings of experts it had convened;²⁵ this was sent to all States and its publication was announced to the press.²⁶ The ICRC also continued to keep up with any developments published in unclassified literature, which confirmed the continued research into and development of these weapons but, significantly, played down the permanent blinding effects of these weapons.²⁷

Preparation of the Review Conference of the CCW: the meetings of the Group of Governmental Experts

ICRC activity encouraging a new Protocol began in earnest when it became clear that there would be a review conference of the CCW. In February 1993 the government of France requested such a conference²⁸ and in December of the same year, 29 States Parties signed a letter to the same effect,²⁹ at the same time recommending the preparation of the conference by a Group of Governmental Experts. It should be stressed

²⁵ *Blinding Weapons: reports.*

²⁶ "Blinding Weapons", *ICRC News*, 10 February 1994.

²⁷ These developments tended to mention only the flashblinding or dazzling effects of the weapons when used against personnel, without mentioning the fact that any laser that temporarily blinds at a certain distance will inevitably blind at a closer distance. See, for example, articles in *International Defense Review* 1992; *Defence*, April 1993; *Defense Electronics*, February 1993; *Laser Focus World*, September 1994. The permanent blinding effect of battlefield laser weapons that were meant also to have an anti-sensor use was in fact likely to be at least several hundred metres or even a kilometre for the naked eye, and several kilometres for a person using optics. However, some articles continued to mention permanent blinding as an effect, for example, articles in *New Scientist*, Vol. 135, No. 1833, and *National Defense*, December 1993.

²⁸ In a letter to the United Nations Secretary-General dated 9 February 1993. France based its request on Article 8, para. 3(a), of the Convention, which stipulates that if no review conference has taken place ten years after the entry into force of the Convention (it came into force on 2 December 1983), the Depository must call for such a conference if one State Party so requests.

²⁹ Dated 22 December 1993.

here that the purpose of the Review Conference was to amend Protocol II on landmines because of the outcry by a number of non-governmental organizations and some political leaders about the effects of anti-personnel landmines.³⁰ Both the letter sent to the UN Secretary-General and the General Assembly resolution³¹ made this clear, and it was only as a result of persistent and intensive pressure by the government of Sweden that a possibility for adopting a new protocol was provided for in these documents.³² However, most governments were reluctant to negotiate a treaty on a new weapon and stressed the importance of not diverting attention away from negotiations to amend the landmines Protocol.

Four meetings of the Group of Governmental Experts were held to prepare the Review Conference,³³ and it was only during the third that a session was allotted to discussing possible new protocols to the Convention. Two written proposals on laser weapons, one by Sweden and the other by the ICRC, were submitted at this meeting.³⁴ Sweden's proposal read as follows:

“It is prohibited to use laser beams as an anti-personnel method of warfare, with the intention or expected result of seriously damaging the eyesight of persons.”³⁵

³⁰ See, in particular, articles by Jody Williams and Anita Parlow in *IRRC*, No. 307, July-August 1995, pp. 375 and 391, respectively.

³¹ GA res. 48/79 of 16 December 1993.

³² The letter suggested the preparation of the Review Conference by a Group of Governmental Experts. An oblique reference to a possible new Protocol was made in these terms: “Once the experts have made significant progress in their efforts to amend Protocol II, the group could also consider any other proposal relating to the Convention and its existing or future Protocols”. Neither the letter nor the GA resolution made any reference to laser weapons.

³³ The dates of the meetings were as follows: 28 February-4 March 1994 (primarily a meeting on procedure); 16-27 May 1994; 8-19 August 1994 and 9-20 January 1995. It was initially thought that there would only be three preparatory meetings, but during the August session it became clear that insufficient progress on the landmines issue meant that a fourth preparatory meeting was necessary.

³⁴ There was also a proposal by Sweden for a Protocol on Naval Mines (Doc. CCW/CONF.1/GE/12) and by Switzerland on Small-calibre Weapon Systems (i.e. bullets, Doc. CCW/CONF.1/GE/16). In practice these two items received very little attention and the ICRC decided that as a matter of priority it was necessary at least to achieve a proper negotiation of a new Protocol on blinding laser weapons.

³⁵ Doc. CCW/CONF.1/GE.11, dated 9 August 1994.

The ICRC's proposal had a similar intent but attempted to be more explicit by avoiding any reference to intention or foreseeability:

- “1. Blinding as a method of warfare is prohibited;
2. Laser weapons may not be used against the eyesight of persons.”³⁶

The ICRC's formula tried, in particular, to ban blinding rather than just a type of weapon (which was the approach that had been recommended by the majority of experts at the fourth meeting of experts organized by the ICRC in April 1991³⁷). Twelve countries³⁸ out of the 13 that spoke at this session indicated their approval of a ban on the use of lasers for the purpose of blinding but many stressed the importance of adopting wording that protected the normal use of lasers, for range-finding and target designation in particular.

Negotiation as such took place only during the fourth meeting of governmental experts,³⁹ during which two working sessions were devoted to the subject. In addition, the ICRC organized an informal meeting in order to discuss possible wording. During this discussion, several countries indicated that, although they were ready to accept a ban on blinding with laser weapons, they were uncomfortable with the idea of banning blinding weapons as such without specifying the type of weapon, and could therefore not accept the ICRC's proposal. During the two sessions⁴⁰ that debated the necessity for a new Protocol and the wording that ought to be adopted, 25 countries expressed their support for such a Protocol.⁴¹ At the second session, the Chairman submitted to the delegations the following draft resulting from private consultations:

“Article 1

It is prohibited to employ laser beams of a nature to cause permanent blindness [serious damage] against the eyesight of persons as a method of warfare.

³⁶ Doc. CCW/CONF.1/GE/CRP.28, dated 12 August 1994.

³⁷ See footnote 18 above, and *Blinding Weapons: reports*, pp. 353-356.

³⁸ Australia, Cuba, Cyprus, Germany, Iran, Mexico, Netherlands, New Zealand, Norway, Russia, Spain and Switzerland.

³⁹ See note 33.

⁴⁰ 13 and 17 January 1995.

⁴¹ In addition to Sweden and the 12 countries listed in note 38, the following: Austria, Belgium, Bulgaria, Cambodia, Finland, France, Greece, India, Ireland, Pakistan, Poland and the United Kingdom.

Article 2

It is prohibited to [produce and] employ laser weapons primarily designed to blind [permanently].

Article 3

Blinding as an incidental or collateral effect of the legitimate employment of laser beams on the battlefield is not covered by this prohibition.”

Most delegations were reasonably happy with this wording, especially as Article 3 provides for incidental blinding caused by the use of lasers not actually intended for this purpose, in particular range-finders. However, two delegations indicated that they had problems with draft Article 1. France indicated its acceptance of the prohibition of the deliberate blinding of persons as a method of warfare, but felt that the wording chosen should not restrict the use of lasers for the detection of optical instruments. Further, it expressed a concern that the wording might not sufficiently protect soldiers who used lasers and incidentally produced blindness in an adversary. The second concern was shared by the United Kingdom, which felt that Article 1 might have the effect of excessively restricting the use of an otherwise acceptable weapon for fear that soldiers would be accused of having deliberately caused blindness with them. Both delegations thought that draft Article 3 was not sufficient to allay this concern. The delegation of the United States was the only one that indicated its opposition to the existence of a new Protocol on this subject. The decision was made by the Chairman to forward the draft Protocol to the Review Conference, without the addition of extra square brackets, together with an indication that the wording did not commit any delegation.⁴²

Achieving consensus in favour of a ban on blinding laser weapons

ICRC, NGOs and political action

Although by the fourth meeting of governmental experts in January 1995 a large number of States from all continents were in favour of a protocol on blinding laser weapons, it had not been at all evident when

⁴² Annex II to the Final Report of the Group of Governmental Experts, 20 January 1995, UN Doc. CCW/CONF.1/GE/23.

the process began that a majority of States would be in favour. Indeed, several States had shown considerable reticence when the Group of Governmental Experts first met and most others had not been particularly interested. As it appeared likely that the Review Conference would decide to require consensus for any new protocol, the few States clearly not in favour of the protocol could block its adoption.

The ICRC therefore began a major effort to gain support from government ministries and National Red Cross and Red Crescent Societies. It also contacted some non-governmental organizations, in particular medical associations and organizations already active in trying to counter weapons problems, and informed the press. For this purpose it needed a tool which was more readily usable than the book containing the complete reports of the expert meetings it had held.⁴³ In September 1994 it therefore published an eight-page brochure on the subject, entitled *Blinding Weapons: Gas 1918...Lasers 1990s?*, with a cover picture of soldiers blinded by chemical weapons in the First World War. The brochure summarized known developments in anti-personnel laser weapons, indicated how they blind and why there is no protection possible, outlined the disabilities and severe depression caused by sudden blindness, and finally appealed "to the conscience of humanity to ensure that a flood of blinded soldiers or civilians will not be needed before intentional blinding is also outlawed". The ICRC also provided a "Questions and Answers" paper, which replied to the typical questions posed by the sceptical, such as "isn't it better to blind than to kill?", or "would a prohibition of blinding interfere with other legitimate military uses of lasers?".

Delegates of the ICRC visited several countries in order to discuss the matter with government officials, and in addition a large number of National Societies gave active support by contacting political figures⁴⁴ and generating public debate.⁴⁵ After receiving the ICRC's material, and in

⁴³ *Blinding Weapons: reports.*

⁴⁴ For example, the President of the French Red Cross sent a letter dated 17 November 1994 to French Prime Minister E. Balladur, urging the government to do all in its power to avoid the manufacture and proliferation of anti-personnel laser weapons and giving his opinion that the 1980 Convention would be the appropriate means to ban blinding as a method of warfare.

⁴⁵ For example, debates in the United Kingdom's House of Lords, 14 March 1994, *Hansard*, Vol. 553, pp. 7-8; and in the House of Commons, 19 January 1995, *Hansard*, Vol. 262, No. 34, pp. 689-690, in which, in reply to a question, the Secretary of State for Defence indicated that: "the UK has no plans to develop or test a laser weapon designed permanently to blind human beings. The feasibility of making use of temporary dazzle effects was investigated in 1983 and tests on one system were conducted which were subsequently discontinued".

some cases further explanation, several significant professional associations and non-governmental organizations joined the ICRC's call for a ban on blinding weapons. They included the World Medical Association,⁴⁶ the World Blind Union,⁴⁷ the Cristoffel-Blindenmission,⁴⁸ the International Initiative Against Avoidable Disability,⁴⁹ the Blinded Veterans Association⁵⁰ and the World Veterans Association⁵¹. Some mainstream human rights non-governmental organizations also became active in working for a ban, most significantly Human Rights Watch,⁵² and others such as Physicians for Social Responsibility, Pax Christi International and the International Society for Human Rights. Their activity, in addition to that of the ICRC, generated a certain number of articles in the press, most of which were favourable to a ban.⁵³

Support was also sought from three international bodies, namely the European Parliament, the Organization of African Unity (OAU) and the Inter-Parliamentary Union. In all three cases, the subject was brought up in the context of discussions and resolutions on landmines, a problem far more in the public eye than blinding laser weapons. On 29 June 1995, the European Parliament adopted a "resolution on landmines and blinding laser weapons", calling on the Council of Europe to take joint action to, *inter alia*, add a Protocol to the 1980 CCW "banning blinding laser weapons".⁵⁴ The resolution on landmines adopted by the Council of

⁴⁶ Public statement of 24 April 1995: "...the development of anti-personnel lasers as blinding weapons represent[s] one of the biggest public health issues facing the world today. The World Medical Association fully supports the ICRC in its efforts to combat this growing menace". Support was also given in the Editorial of the *Lancet*, Vol. 344, 17 December 1994.

⁴⁷ Statement made at the Vienna session of the Review Conference of the CCW.

⁴⁸ *Idem*.

⁴⁹ *Idem*.

⁵⁰ Resolution 26-95.

⁵¹ Resolution 23, *Prohibition of anti-personnel blinding laser weapons*, adopted at its 21st General Assembly (1994).

⁵² See below for more detail on their contribution. It should also be mentioned that several influential members of Pugwash became active in working towards a ban after the subject was discussed during its 44th Annual Conference (1994).

⁵³ See, for example, "Eyewash no defense", *International Defense Review*, Vol. 28, July 1995; "Thou shalt not blind", *The Economist*, 15 October 1994; "A very ugly genie", *Military Technology*, MILTECH — 5/95; Barry Fridling, *Blinding Lasers: The Need for Control*, US Naval Institute, October 1988; Colman McCarthy, "Battlefield instruments of blindness", *Washington Post*, 16 May 1995.

⁵⁴ Resolution A4-0119/95, operative para. 6 (a) (iii). See also preambular paras. O and P.

Ministers of the OAU on 23 June 1995 contained an operative provision supporting “the adoption, by the Review Conference, of a Protocol banning blinding laser weapons”⁵⁵ and similar wording was contained in the resolution adopted by the 93rd Inter-Parliamentary Conference.⁵⁶

Developments relating to the imminent manufacture of certain laser weapons

Between the end of the fourth meeting of Governmental Experts and the Review Conference itself there were indications that two types of portable laser weapons, ostensibly or allegedly intended for anti-personnel use, were at the point of manufacture and sale.⁵⁷

The first concerned a laser marketed by NORINCO, a Chinese company, at an arms fair in South-East Asia in spring 1995.⁵⁸ The device, called a “Portable Laser Disturber”, was described in the sales leaflet as follows: “one of its major applications is, by means of high-power laser pulses, to injure or dizzy (*sic*) the eyes of an enemy combatant, and especially anybody who is sighting and firing at us with an optical instrument, so as to cause him to lose combat ability or to result in suppression of his observation and sighting operation. Besides, the high-power laser beam can damage or invalidate any enemy photo-electric sensor in highly converging optical system...”.

The second was a laser developed in the USA, the Laser Countermeasure System (LCMS),⁵⁹ mounted on an M16 rifle, which had been developed and tested a few years previously but was due to be manufactured for sale to the army in 1995. This system was described as having “the

⁵⁵ Resolution on the 1980 United Nations Convention on Certain Conventional Weapons and problems posed by the proliferation of anti-personnel mines in Africa, operative para. 7, also preambular para. 8.

⁵⁶ Resolution adopted by consensus on 1 April 1995 and entitled *The international community in the face of the challenges posed by calamities arising from armed conflicts and by natural or man-made disasters*.

⁵⁷ The only example of a blinding laser that was actually deployed was the “Laser Dazzle Sight” placed on British battleships in the early 1980s and since discontinued; see *Blinding Weapons: reports*, pp. 109-110 and 170-172, and note 45.

⁵⁸ China North Industries Corp. (NORINCO). Reports in *Jane's Defence Weekly*, 27 May 1995, p. 3; *International Defense Review*, May 1995, pp. 19-21.

⁵⁹ Also referred to as the PLQ-5. The system was developed by Lockheed-Sanders and the army hoped for government approval in June 1995 for a full-scale production contract with the same company. Congress decided to delay its decision. See Human Rights Watch Arms Project, *U.S. Blinding Laser Weapons*, New York/Washington DC, Vol. 7, No. 5, pp. 2 and 9; *Inside the Pentagon*, 13 July 1995, p. 9.

primary objective to detect, jam and suppress threat fire control, optical and electro-optical subsystems".⁶⁰ It certainly had the capacity to blind permanently at considerable distances (up to one kilometre), and use of this purpose was not excluded.⁶¹

These developments seemed somewhat discouraging for those working for a ban of blinding laser weapons, but actually they had the beneficial effect of eliminating a certain indifference on the part of many government ministries which still believed that such developments would probably take place only in the distant future — if at all. They also proved that blinding laser weapons would not be limited to very few armies but that proliferation would be likely to occur rapidly, as the experts convened by the ICRC in 1991 had warned.

A very important step was the decision by Human Rights Watch Arms Project to become actively involved in this issue. It researched into the various military laser systems that were being developed in the United States and were intended to damage optical systems and/or eyesight.⁶² In May 1995 it released a report⁶³ containing not only details on these systems but also a number of recommendations. These included the cancellation by all countries⁶⁴ of the development of all tactical laser weapons because of their potential use as blinding laser weapons and the adoption of a new Protocol to the CCW prohibiting blinding as a method of warfare. The publication of this report, subsequent press comment and further contacts by the ICRC prompted a detailed high-level study within the United States Department of Defense on the desirability of these systems and a review of the United States' hitherto objection⁶⁵ to the adoption of a Protocol on this subject.

Another major factor was the interest in the issue taken by three politicians, namely, Senator Patrick Leahy and Congressmen Lane Evans

⁶⁰ Lockheed-Sanders Fact Sheet, Laser Countermeasure System (LCMS), AN/PLQ-5, 1994.

⁶¹ *Law of War Review* of 16 September 1994, DAJA-10 (27-1a), US Department of the Army.

⁶² It refers to these as "tactical laser weapons".

⁶³ Human Rights Watch Arms Project, *op. cit.* (note 59).

⁶⁴ In addition to detailed information on ten active or dormant blinding laser programmes in the United States, the report named the following countries as having allegedly also done some research into blinding laser weapons: China, France, Germany, Israel, Russia and the United Kingdom, *ibid.*, pp. 14-15.

⁶⁵ US opposition to a Protocol was also criticized in the press, e.g. Colman McCarthy, "Battlefield instruments of blindness", *Washington Post*, 16 May 1995.

and Ronald Dellums. They wrote letters to President Clinton and the Secretaries of State and Defense in December 1994 and January 1995, respectively, indicating their desire for the United States to support a new Protocol banning blinding laser weapons. The report by Human Rights Watch provided further impetus and a similar letter, signed this time by 51 Senators and Members of Congress was sent to the Secretary to Defense on 31 July 1995.⁶⁶

The new policy of the United States Department of Defense was announced by Secretary of Defense William Perry in a News Release on 1 September 1995, three weeks before the opening of the Review Conference of the CCW in Vienna. The announcement read as follows:

“The Department of Defense prohibits the use of lasers specifically designed to cause permanent blindness of unenhanced vision and supports negotiations prohibiting the use of such weapons. However, laser systems are absolutely vital to our modern military. Among other things, they are currently used for detection, targeting, range-finding communications and target destruction. They provide a critical technological edge to US forces and allow our forces to fight, win and survive on an increasingly lethal battlefield. In addition, lasers provide significant humanitarian benefits. They allow weapons systems to be increasingly discriminate, thereby reducing collateral damage to civilian lives and property. The Department of Defense recognizes that accidental or incidental eye injuries may occur on the battlefield as the result of the use of legitimate laser systems. Therefore, we continue to strive, through training and doctrine, to minimize these injuries.”

Negotiation of Protocol IV during the Review Conference

Ambassador Hoffmann of Germany was elected Chairman of Main Committee III, which was given the task of negotiating Protocol IV on Blinding Laser Weapons. As the main topic of the Review Conference was the amendment of the landmines protocol, Ambassador Hoffmann indicated his determination to conclude the negotiations on draft Protocol IV as quickly as possible and set aside for this purpose four sessions (i.e. four half days). The principal session was on 3 October; during this

⁶⁶ Letters on file with Human Rights Watch Arms Project, Washington DC.

session a consultation took place between a small number of States which effectively decided on the wording of what are now Articles 2 and 3, Article 2 having been throughout the most controversial. This wording was a compromise worked out between the few States most closely concerned and was represented by those States as the only one possible. The session of 5 October was therefore in practice limited to general statements of support for the new Protocol, although many governments stressed that the new Protocol was not as strict as they would have wished.⁶⁷

As each session discussed several Articles of the Protocol, it will be easier to describe the negotiating history of the Protocol by analysing each Article rather than by giving a strictly chronological description of events. However, it should be mentioned at this stage that Ambassador Hoffmann began the negotiations with not only the Chairman's text, which had been submitted to the Review Conference by the Group of Governmental Experts, but also with a rather more elaborate text submitted to the Conference by the government of Austria. During the sessions, additional proposals were put forward by the United States, Bulgaria and Germany. A background paper was also submitted by the Netherlands,⁶⁸ which, however, did not include suggested wording.

The other point worthy of note is that it was not certain at the opening of the Review Conference whether China would support this new Protocol, as it had thus far expressed no opinion on the subject other than a general indication that the Conference should concentrate on landmines. Both the prospective Chairman of Committee III and some governments had approached China prior to the Conference in order to encourage it to support the proposed Protocol. The representative of China made it clear during the first session on 26 September that his country was ready to negotiate the wording of the new Protocol.

Protocol IV: the content

Scope

There is no particular Article on the scope of application of Protocol IV and therefore it would seem at first sight to be governed by

⁶⁷ Fifteen States made a statement to this effect.

⁶⁸ Doc. CCW/CONF.I/MCIII/WP.1, 26 September 1995.

Article 1 of the framework Convention, i.e. international armed conflicts as described in Article 2 of the Geneva Conventions of 1949. However, the negotiations in Vienna made it clear that delegations intended this Protocol also to apply at least to non-international armed conflicts as described in Article 3 of the 1949 Geneva Conventions.

The issue of scope of application was discussed in the first and third sessions. The Austrian proposal was to the following effect:

“this Protocol shall apply in all circumstances including armed conflict and times of peace”.⁶⁹

Seven States indicated their preference for the Protocol to be applicable “in all circumstances” and three preferred it to apply to international and non-international armed conflicts. China proposed that the scope of application be the same as that agreed to in the context of amended Protocol II, which was expected to be non-international armed conflicts as defined in common Article 3 of the Geneva Conventions. Agreement was reached on this basis and recorded in the report of Main Committee III to the plenary.⁷⁰

The only reason why this scope of application is not specified in Protocol IV is because negotiations on the landmines Protocol broke down in Vienna (for reasons other than the scope Article); as the final wording was not adopted for Protocol II, it was not possible to include it in Protocol IV. However, it was felt worthwhile by all in Vienna to adopt Protocol IV, and a number of delegations thought that the issue of a scope Article could be taken up again if necessary at a subsequent review conference.

A confirmation of the intention of the Vienna Conference is to be found in a resolution adopted by the 26th International Conference of the Red Cross and Red Crescent, which:

“welcomes the general agreement achieved at the Review Conference that the scope of application of this Protocol should cover not only international armed conflicts”.⁷¹

⁶⁹ Doc. CCW/CONF.I/MCIII/WP.2, 26 September 1995, Article 1, para. 2 .

⁷⁰ Doc. CCW/CONF.1/4, 12 October 1995. See also Doc. CCW/CONF.1/MCIII/WP.4/Rev.2, 5 October 1995, which is the Protocol as it appeared when negotiations concluded in the Third Committee and which includes the scope in Article 1 but leaves open the exact wording.

⁷¹ 26th International Conference of the Red Cross and Red Crescent (1995), Resolution 2, Section H, para. (f), *IRRC*, No. 310, January-February 1996, p. 68.

A stronger indication of the intention never to use the weapon is to be found in the Final Declaration of the Review Conference,⁷² in which the High Contracting Parties of the 1980 Convention:

“solemnly declare ... their recognition of the need for achieving the total prohibition of blinding laser weapons, the use and transfer of which are prohibited in Protocol IV”.

Article 1

The prohibited weapon

This is a revised version of what was originally Article 2 of the Chairman's text. The final version was heavily influenced by the wording of the new United States Department of Defense policy, i.e. the prohibition of the employment of “laser weapons specifically designed to cause permanent blindness to unenhanced vision”; a proposal to this effect was included in the working paper submitted by the USA.⁷³

Many delegations were of the opinion that this proposal was not sufficiently clear. First of all it was felt that “unenhanced vision” needed explanation. The wording adopted, namely “to the naked eye or to the eye with corrective eyesight devices”, was proposed by the US delegation, which also explained that “corrective eyesight devices” meant prescription glasses or contact lenses. The delegation also explained that the term “unenhanced vision” was included in order to exclude systems used for countering optical systems. However, as several new laser systems appeared to have a dual use (namely, use against optical systems and against eyesight), the term “specifically designed” was clearly of critical importance for the meaning of this provision. It is not surprising, therefore, that much discussion centred on this issue.

The United States delegation stated several times that “specifically” would cover the situation where only one of the functions of the laser was to blind persons. However, the delegation of France understood the word to mean “exclusively”, whereas the UK delegation indicated that it preferred the use of the word “primarily”, which was the wording in the Chairman's text. The delegate of the ICRC strongly argued that a prohibition of a weapon should not depend on an ambiguous word that was

⁷² Doc. CCW/CONF.I/16.

⁷³ Doc. CCW/CONF.I/MCIII/WP.3, 27 September 1995.

also likely to lead to difficulties in translation. The ICRC therefore urged the delegates to spell out in the provision the meaning that the US delegation attributed to the word “specifically”, thus removing all doubt. After consultations with both capitals and between interested States, this was agreed to by the final session on 5 October 1995. All delegates were of the opinion that this was the best definition of the prohibited weapon that could be achieved in the time allotted and no one suggested describing the technical characteristics of such a weapon.⁷⁴

Production and transfer

The prohibition of production was already included in square brackets in the Chairman’s text and the prohibition of transfer was first introduced in the Austrian proposal.⁷⁵

Ten States wished to have production of the weapon prohibited in the Protocol, but four States spoke against, arguing that this would require verification measures and that there was no time to negotiate the issue. The Chairman was also of the opinion that a ban on production would certainly need intrusive verification measures and therefore had doubts as to its inclusion in the Protocol. However, on adoption of the Protocol, the States in favour of a ban on production included in the final report of Main Committee III⁷⁶ a reference to taking the matter up again at a future Review Conference.

The ban on transfer met with success, however. Austria strongly argued in favour of this proposal, pointing out the particular danger of a State party to the Protocol transferring the weapon to a non-party State which might well then use it. Austria’s position was supported by most delegations. Several States were sceptical and argued that as they were having enough difficulty agreeing on the wording regulating use, they should not complicate matters by starting negotiations on transfer. However, in the face of the determination of many delegations, they agreed to seek further instructions from their capitals on this point. By the final meeting on 5 October this provision could be inserted, although as late as the third meeting on 3 October it was uncertain whether this would be the case.

⁷⁴ The ICRC was also of the opinion that the Protocol should not attempt a technical description, as this would be extremely difficult to do and would therefore considerably delay the adoption of a Protocol.

⁷⁵ See note 69, Article 3, para. 3.

⁷⁶ See note 70.

Article 2

This is a radically modified form of Article 1 of the Chairman's text, which, it will be recalled, reads as follows: "It is prohibited to employ laser beams of a nature to cause permanent blindness [serious damage] against the eyesight of persons as a method of warfare".

This provision caused the greatest difficulty, as it was intended not only to prohibit blinding laser weapons meant for anti-personnel use but also to prevent other lasers from being used in this way. The phrases that posed the most problems were: "it is prohibited to" and "as a method of warfare".

With regard to the first phrase, the governments of the United Kingdom and the United States stressed that, as many lasers were already used on the battlefield on a regular basis for range-finding and target designation, there was a clear danger that soldiers would inadvertently or incidentally blind. Despite draft Article 3, they were concerned that soldiers would find themselves open to war crimes charges and they therefore felt that the obligation should be aimed at the State rather than at the soldier. The United Kingdom indicated that if the wording in the Chairman's draft were adopted, the UK would have to restrict the normal use of lasers in order to avoid all possibility of blindness, and this would be at the expense of the accuracy of other weapons. Two other States recognized that this was a problem.

This concern was not shared by all; the delegation of Germany in particular pointed out that the real issue to be concerned about was potential victims of blinding and not potential war criminals. Most delegations were not willing to give up a general rule of this nature and therefore major efforts were made to find a formula that would be meaningful and still be acceptable to States which could not accept the Chairman's draft.

On 29 September the German delegation submitted a text which attempted to solve the problem by referring to orders given:

"It is prohibited to order the use of laser beams for the purpose of blinding a person permanently or to conduct hostilities on this basis".⁷⁷

⁷⁷ Working paper of 29 September 1995; on file with the author. The wording was inspired by Article 40 of Additional Protocol I of 1977, which provides that: "It is prohibited to order that there shall be no survivors, to threaten an adversary therewith or to conduct hostilities on this basis".

A number of delegations had difficulties with this formula. Some believed that as soldiers give orders it did not solve the problem of personal liability; moreover, it introduced the element of intent, which was difficult to prove. Others, including the Chairman and the ICRC delegation, pointed out that both domestic criminal law and existing humanitarian law impose prohibitions on certain actions by combatants where the element of intent needs to be shown, and therefore this would not be anything new. On the other hand, the German formula was opposed by the delegation of China, which felt that the formula was not strict enough as it would not cover a soldier blinding combatants on his own initiative.

With regard to the phrase "method of warfare", the United States indicated that it could not accept such ambiguous language.⁷⁸ The German proposal "conduct hostilities on this basis" was meant to address this problem and there was also a proposal by Bulgaria which avoided the phrase altogether:

"It is prohibited to employ laser beams or any other laser device as a laser weapon, as defined under Article 1".⁷⁹

It is worth noting, however, that most States would have accepted a ban on using laser weapons to blind "as a method of warfare".⁸⁰

No agreement could be found during the session of 29 September. In preparation for the next session of 3 October, the Chairman submitted a text which borrowed language from the statement of the United States Secretary of State, which referred to "minimizing these injuries" (i.e. blindness) "through training and doctrine". His draft Article read as follows:

"It is prohibited to employ laser beams or any other laser device as a laser weapon ... States shall seek to implement this obligation through training and other appropriate measures in their armed forces".⁸¹

⁷⁸ This was actually a reflection of the fact that the phrase "method of warfare" had created difficulty for the United States in the context of the 1993 Chemical Weapons Convention; it therefore wished to avoid further use of such wording in any context.

⁷⁹ Doc. CCW/CONF.1/MCIII/CRP.1, 29 September 1995.

⁸⁰ The President of France, for example, in reply to Parliamentary questions, indicated that "*Il est à souligner que la France souscrit également à l'objectif de prohibition de l'aveuglement délibéré des personnes en tant que méthode de guerre*". Questions écrites des parlementaires, SIRPA ACTUALITE, No. 30, 9 September 1995. It is also worth noting a preambular paragraph in the Final Declaration of the Review Conference: "conscious of the urgent need to counter the silent and invisible threat to human sight posed by the threat of blinding laser weapons".

⁸¹ Doc. CCW/CONF.1/MCIII/CRP.XX, 2 October 1995.

The first part still caused problems for a few delegations because it contained an element of intent, whereas others thought that it did not specify clearly enough the prohibition of blinding. However, it was generally felt that there was common ground that laser systems should not be misused as blinding weapons.

A small working group was organized by the Vice-Chairman, Mr Poptchev of the Bulgarian delegation, which resulted in the following text:

“The High Contracting Parties shall issue instructions to their armed forces to use laser [systems] in accordance with their normal function and take other practical measures in order to minimize and exclude, to the extent possible, the incidents of permanent blindness to unenhanced vision ... as a result of the [legitimate] use of laser [systems]”.⁸²

Shortly after the presentation of this document, the delegation of Sweden indicated to the Chairman its desire to meet again informally with a few other delegations in order to improve on this wording. It was of the opinion that the expression “in accordance with their normal function” was not explicit enough and was convinced that a little more negotiation would result in a much better formulation. It was already late in the evening at this stage and the rest of the time was spent in these informal negotiations. The present language of the Protocol emerged from these negotiations and unfortunately the author of this article is not in a position to indicate the process which led to this final version. However, it would appear that the idea of using the term “feasible precautions” came from the Netherlands delegation.

The wording which emerged was presented at the meeting of 5 October and was not contested by delegations.

One can see from the formulation that the duty has been placed on the level of the State, as desired by some delegations, and takes the form of appropriate training and “other practical measures”. This clearly means that orders cannot be given to use lasers to blind combatants and that efforts must be made to train soldiers to use laser equipment so as to avoid such a result as far as possible. It also means that, if lasers were to be used to counter optical equipment, particular efforts would have to be made to avoid blinding individuals, as in practice such lasers would be the most serious hazard to eyesight. This issue will be commented on further below. Finally, regarding the term “other practical measures”, delegations did not list examples of such measures during the sessions, but some indicated

⁸² Doc. CCW/CONF.I/MCH/CRP.3, 3 October 1995.

informally that they could certainly include the introduction of eye-safe range-finders, as some States are already beginning to do.

Article 3

This Article is very similar to Article 3 of the Chairman's text. The word "legitimate" was questioned by a few delegations during the negotiations. It was explained that it was included in order to specify that there were correct and appropriate uses of lasers on the battlefield. By implication, however, we may also conclude that there are illegitimate uses.

The main purpose of this Article is to allow for the continued use of battlefield lasers, which has been common for some time, and which have not until recently been designed for use against eyesight. However, in the same way that humanitarian law prohibits direct attacks on the civilian population but recognizes that it can be affected by bombardments against military objectives, this Article recognizes that lasers may not be used directly against the eyesight of soldiers but that they may be incidentally affected when lasers are used for other purposes. However, to take the analogy further, Article 2 provides that precautions must be taken to avoid this as far as possible, just as Article 57 of Additional Protocol I requires precautions when planning attacks against military objectives which might affect the civilian population. It is sincerely hoped, however, that this Protocol will be more successful in avoiding incidental blindness than has been the case for civilian casualties resulting from attacks against military objectives. It goes without saying that this Protocol bans the deliberate blinding of both soldiers and civilians.

The phrase "including laser systems used against optical equipment" was introduced only during the last informal consultations that took place at the request of Sweden on the evening of 3 October. Up until that moment, delegations had indicated that the version in the Chairman's text was satisfactory. This phrase was apparently included so that certain delegations could accept the final formulation of Article 2.

Both the term "unenhanced vision" found in Articles 1 and 2 and the phrase "including laser systems used against optical equipment" were included in order to take into account lasers used for the detection and destruction of certain optical systems.⁸³

⁸³ For example, the statement of the French President: "*Elle a cependant besoin de pouvoir employer le laser dans ses usages courants, ainsi qu'à des fins de détection et de neutralisation des capteurs*", Questions écrites des parlementaires, *op. cit.* (note 80).

However, the interpretation of Article 3 is not without difficulty. The provision speaks of "incidental or collateral effects" when lasers are used against optical equipment. If the optics concerned are systems which view the battlefield and do not involve the laser passing through them directly into the eyes of the person making use of them, then the use of that laser can be seen as an anti-matériel use and certainly not an anti-personnel use. In this case, incidental blindness might indeed be caused in an individual who happened to be in the path of the beam but was not intentionally targeted. However, if lasers were used against direct optics, such as binoculars, the lasers would have no effect at all on the binoculars but would certainly blind the individual holding them. Such blindness could hardly be called "incidental or collateral" as it would be deliberate and direct. It is submitted, therefore, that according to a normal interpretation of Article 3 the phrase "including laser systems used against optical equipment" could not be used to legitimize the deliberate blinding of persons using binoculars or other direct optics.

Article 4

It will be recalled that the Chairman's text contained no definition. The Austrian proposal did contain a number of suggested definitions, but only a definition of "permanent blindness" was felt necessary by some delegations. The United States explained that a precise figure needed to be given in order to ensure compliance with the Protocol, especially as blindness did not necessarily mean total loss of vision and that indeed the use of lasers would frequently not result in such total loss. However, Main Committee III experienced great difficulty in deciding on a definition because the types of blindness caused by lasers have not been quantified; definitions of blindness that do exist are based on loss of sight caused by disease.

The Austrian proposal referred to the definition of "blindness and low vision as defined in the International Statistical Classification of Diseases and Related Health Problems of the World Health Organization". "Blindness and low vision" is quantified by the WHO (using what is known as the "Snellen" scale) as visual acuity of less than 20/200, which means that a person cannot see at 20 feet what a normally sighted person can see at 200 feet. The United States proposal used the figure 20/400,⁸⁴ which is the WHO definition of "blindness".

⁸⁴ See note 73, Article 4; 20/400 means that a person cannot see at 20 feet what a normal person can see at 400 feet.

Before the session of 3 October, the ICRC arranged for a visit to Vienna by Professor Marshall, a leading specialist on the effects of lasers on the eye who had already contributed to ICRC expert meetings between 1989 and 1991. In an informal meeting he explained to a number of delegations that visual acuity, on which the WHO definition was based, measured in practice the extent to which vision was blurred, as WHO definitions were largely influenced by the organization's work on the treatment of cataracts. Blinding by laser weapons would involve the destruction of certain portions of the retina. Loss of central vision, which was a very likely result, would result in the total loss of visual acuity, so a definition based on visual acuity was irrelevant to blindness caused by laser weapons.⁸⁵ Professor Marshall therefore strongly recommended a functional test rather than one based on WHO figures. This opinion was shared by the UNDP representative at the Conference, Sir John Wilson, a specialist on the definition of blindness as assessed by the WHO. Both he and Professor Marshall suggested using the phrase "loss of sight that is permanent, seriously disabling and irreparable". A few delegations, however, insisted on maintaining a figure as, they said, this was important for establishing whether the Protocol had been violated. One delegation added that it was also important for its weapons designers! They conceded, however, that a figure alone would be meaningless for non-specialists and that a descriptive phrase would be useful.

The utility of the description in Article 4 is to confirm that "blindness" does not necessarily mean total loss of sight, a fact which is not generally known to non-specialists. This is important point: damage by laser weapons may result in partial loss of sight, although this will depend on the energy level of the weapon and the distance of the victim, for military lasers are certainly capable of inflicting total blindness. The other criteria, namely, "irreversible", "uncorrectable" and "no prospect of recovery" are the normal result of laser injury. With regard to the measurement of visual acuity, it has already been indicated that this is not appropriate for laser injury. However, Professor Marshall explained that in cases of cataract, people with visual acuity of less than 20/200 were not able to read or to get around, and such functional loss was also likely to result from laser injury.

⁸⁵ For greater detail on the blinding effects of laser weapons, see *Blinding Weapons: reports* (note 15), First Round Table of Experts, pp. 29-45, and First Working Group of Experts, pp. 98-99 and 102-139.

Delegates were aware that the Snellen scale was not very suitable for measuring blindness caused by lasers, especially as it did not contain any reference to loss of field of vision, but as it was the only internationally recognized measurement they wished to maintain it. However, in the Final Declaration of the Conference they indicated their wish to return to this problem of definition should the need arise.⁸⁶

Implementation

Article 4 of the Austrian proposal was a draft Article on "Compliance" containing the following:

"The States Parties undertake to consult each other and to cooperate with each other in order to resolve any problems that may arise with regard to the interpretation and application of the provisions of this Protocol".

The proposal was strongly supported by India but unfortunately was not followed up. This was not really because of opposition by other States but because of lack of time and the difficulty of arriving at an agreed version of what is now Article 2.

The likely effect of the new Protocol

There can be no doubt that Protocol IV represents a major achievement. It is the first time since 1868⁸⁷ that a weapon has been prohibited before it has been used on the battlefield. It has also stigmatized deliberate blinding.⁸⁸ Although the Protocol does not contain a simple prohibition

⁸⁶ See note 72. The Declaration states that "The High Contracting Parties ... solemnly declare ... their wish to keep the blinding effects related to the use of laser systems under consideration...". The preamble also notes that a number of issues could be considered in the future, for example the definition of "permanent blindness", including the concept of field of vision.

⁸⁷ When exploding bullets were prohibited by the St. Petersburg Declaration Renouncing the Use, in Time of War, of Explosive Projectiles Under 400 Grammes Weight.

⁸⁸ Several States indicated in the formal plenary meeting of Committee III on 6 October that they interpreted the Protocol as banning blinding as a method of warfare. It is also worth noting the resolution of the European Parliament entitled *Resolution on the failure of the international conference on anti-personnel mines and laser weapons* of 16 November 1995, paras. H and I of which read as follows: "welcoming the agreement on a Protocol to the Convention on Certain Conventional Weapons to restrict the use and transfer of blinding laser weapons, but regretting that the Protocol fails to ban the production of blinding laser weapons and provides loopholes for the production, use and transfer of some blinding laser weapons, including those that target optical systems; believing that blinding as a method of warfare is abhorrent and in contravention of established custom, the principles of humanity and the dictates of the public conscience...".

of blinding as a method of warfare, there can be no doubt that it was adopted because of the concern felt about a weapon designed to be aimed at eyesight. As a Director of the ICRC, Mr Yves Sandoz, stated at the final plenary in Vienna, this Protocol represents a victory of civilization over barbarity.⁸⁹

The Protocol requires 20 States to notify their consent to be bound by it before it enters into force;⁹⁰ at the time of writing one State has already done so.⁹¹ Most States are likely to submit Protocol IV to their Parliaments at the same time as amended Protocol II⁹² and this may cause a little delay. The Final Declaration⁹³ of the of the Review Conference states that: "The High Contracting Parties ... Solemnly Declare ... Their desire that all States, pending the entry into force, respect and ensure respect of the substantive provisions of Protocol IV to the fullest extent possible".

State practice so far is encouraging. At a news briefing held on 12 October 1996, the US Department of Defense announced that the Army had been ordered on 5 October to stop the LCMS program and that it had been terminated. The reason given, as reported at the briefing, was as follows:

"Deputy Secretary John White determined that [the laser counter-measures program] did not fit in under the proscription against blinding lasers that are intended to blind ... We have an opportunity to stop a proliferation of a new and dangerous weapon, we hope. We are now engaged in discussions at the Conference on Conventional Weapons in Vienna to do just that. Secretary Perry felt strongly that we should take a lead role in that by swearing off the development and use of lasers intentionally designed to blind people".⁹⁴

⁸⁹ The original French text was as follows: "*L'adoption du Protocole sur les armes à laser aveuglantes est un succès de la civilisation sur la barbarie. Au-delà du seul texte de ce Protocole, ce que nous retiendrons en effet de la décision prise aujourd'hui, ce que les peuples comprendront, c'est que les Etats n'acceptent pas l'idée que les hommes puissent délibérément aveugler d'autres hommes, en quelque circonstance que ce soit.*" On file with the author.

⁹⁰ Article 5, para. 3, of the framework Convention.

⁹¹ Finland, on 11 January 1996.

⁹² Protocol on Prohibitions or Restrictions on the Use of Mines, Booby Traps and Other Devices as Amended on 3 May 1996. Adopted by the first Review Conference of the 1980 CCW.

⁹³ See note 72.

⁹⁴ DefenseLink transcript, Department of Defense News Briefing, 12 October 1995.

At the final plenary session in Vienna, the Chinese delegate welcomed Protocol IV, stating that it would reduce the cruelty of war and that all States should ratify it. There are indications that NORINCO has withdrawn the anti-personnel laser from the market and there is no evidence that any other anti-personnel laser programmes are being pursued elsewhere.

It is noteworthy that State practice so far seems to be in keeping with the general intent of the new Protocol and is not being based on the wording of the Protocol, which appears to exempt the use of lasers against optics. Indeed, some States were reticent to adopt a provision simply prohibiting the use of lasers against eyesight as a method of warfare (as originally suggested by Sweden) for fear of being accused of violating the Protocol should blindness incidentally occur when range-finders were being used. Therefore it is difficult to imagine how they could introduce anti-optics lasers given that these pose a much greater threat to eyesight than any other lasers. In the technical literature, so-called anti-sensor lasers were frequently alluded to as being useful for anti-personnel purposes and the withdrawal of the LCMS, together with the explanation given, seems to confirm this.

It is earnestly hoped that this trend will continue and that the Protocol will have the necessary effect without need for further negotiation. In the Final Declaration,⁹⁵ the Review Conference notes that "a number of issues could be considered in the future, for example at a review conference, taking into account scientific and technological developments, including the questions of prohibition on the use, production, stockpiling and transfer of blinding laser weapons and the question of compliance with regard to such weapons...".

It is the author's opinion that none of this will be necessary if States implement the Protocol in accordance with its general goal, as appears to be the case so far. However, vigilance will be required both on the national and the international level to ensure that this is done.

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⁹⁵ See note 72.

Annex

**CONVENTION ON PROHIBITIONS OR RESTRICTIONS
ON THE USE OF CERTAIN CONVENTIONAL WEAPONS
WHICH MAY BE DEEMED TO BE EXCESSIVELY
INJURIOUS OR TO HAVE INDISCRIMINATE EFFECTS**

Protocol on Blinding Laser Weapons

(Protocol IV)

Adopted 13 October 1995

Article 1

It is prohibited to employ laser weapons specifically designed, as their sole combat function or as one of their combat functions, to cause permanent blindness to unenhanced vision, that is to the naked eye or to the eye with corrective eyesight devices. The High Contracting Parties shall not transfer such weapons to any State or non-State entity.

Article 2

In the employment of laser systems, the High Contracting Parties shall take all feasible precautions to avoid the incidence of permanent blindness to unenhanced vision. Such precautions shall include training of their armed forces and other practical measures.

Article 3

Blinding as an incidental or collateral effect of the legitimate military employment of laser systems, including laser systems used against optical equipment, is not covered by the prohibition of this Protocol.

Article 4

For the purpose of this protocol “permanent blindness” means irreversible and uncorrectable loss of vision which is seriously disabling with no prospect of recovery. Serious disability is equivalent to visual acuity of less than 20/200 Snellen measured using both eyes.