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# The 1899 Hague Declaration concerning Expanding Bullets

## A treaty effective for more than 100 years faces complex contemporary issues

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*“The Contracting Parties agree to abstain from the use of bullets which expand or flatten easily in the human body, such as bullets with a hard envelope which does not entirely cover the core or is pierced with incisions.”*

Declaration (IV,3) concerning Expanding Bullets. The Hague, 29 July 1899.

The 1899 Hague Declaration (the Declaration) is a treaty prohibition based on particular technical specifications about a weapon system, namely, the construction of bullets. The Declaration has been widely adhered to and has assumed the status of customary law. Although there have been allegations of violations of this treaty, to our knowledge none have been proven. From this point of view, the Declaration could be regarded as an effective treaty.

However, there have been considerable developments in the construction of firearms and their ammunition during the twentieth century, together with a better understanding of the factors which cause large wounds. It has become evident that adhering to the strict wording of the Declaration does not always achieve its apparent object and purpose, that is, to eliminate the unnecessary injury and suffering associated with very large bullet wounds. Consequently, more than a one hundred years later, development of this aspect of international humanitarian law and the maintenance of a coherent legal discourse require consideration not only of treaty law but also of ballistics, the impact of weapons upon health and a variety of military issues.

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Even though there have been no proven violations of the Declaration, a wide variety of discussions about bullet construction in relation to international humanitarian law may arise. The possible subjects include:

- accusations that a party to a conflict has used prohibited bullets;
- the fact that the prohibition contained in the Declaration, recognized as being part of customary law, has now been integrated into the 1998 Rome Statute of the International Criminal Court;<sup>1</sup>
- the Swiss proposal aimed at updating the Declaration and submitted to the Parties to the 1980 UN Convention on Conventional Weapons (see section 4 below);
- the use by police forces of certain bullets which correspond to the technical description of prohibited bullets in the Declaration.

The aims of this document are, first, to provide background material for legal discourse on the subject of which bullets are or should be prohibited; and second, to highlight the complexity of some of the issues and arguments involved.

### Historical background

In the late 1890s it was reported in medical literature that the wounds produced by military rifle bullets with lead exposed at their tips were larger than those produced by others. At the same time, it was claimed that this could be equated with the greater efficacy of any rifle loaded with such ammunition.<sup>2</sup> The British army believed that their rifle bullets, manufactured in Dum-Dum in India, were highly effective in their colonial wars against “active and brave barbarian foes”.<sup>3</sup>

The Sub-Commission to the First Commission to the 1899 Hague Peace Conference examined the question of dum-dum bullets.<sup>4</sup> Wording was

<sup>1</sup> The relevant article of the 1998 Rome Statute of the ICC is Article 8(2)(b)(ix), which repeats the wording of the 1899 Hague Declaration. See also Report of the Preparatory Committee on the Establishment of an International Criminal Court, “Draft Statute and Draft Final Act”, UN Doc. A/Conf.183/2/Add.1, 1998, p. 124; H. von Hebel and D. Robinson, “Crimes within the jurisdiction of the Court,” in R. S. Lee (ed.), *The International Criminal Court: The Making of the Rome Statute – Issues, Negotiations, Results*, Kluwer, The Hague, 1999, p. 116.

<sup>2</sup> H. Davis, “Gunshot injuries in the late Greco-Turkish wars with remarks upon modern projectiles”, *British Medical Journal*, Vol. ii, 1897, pp. 1789-1793; A. Ogston, “The wounds produced by modern small bore bullets: The dum-dum and the soft-nosed Mauser”, *British Medical Journal*, Vol. ii, 1898, pp. 813-815.

<sup>3</sup> A. Ogston, “Continental criticism of English rifle bullets”, *British Medical Journal*, Vol. i, 1899, pp. 752-757.

<sup>4</sup> J. Scott, *The Proceedings of the Hague Peace Conferences*, Oxford University Press, New York, 1920, pp. 286-287.

taken over from the St Petersburg Declaration and proposed for a prohibition on dum dum bullets. The delegates perceived dum dum bullets as having similar effects to a projectile that carried explosive material. Debate centred on whether such bullets “aggravate wounds and increase the suffering of the wounded” and whether a bullet causing “such enormous ravages in the body, its entrance being very small, but its exit very large” was “necessary.” The British delegate agreed with their technical understanding of the effects of the dum dum bullet, but argued that “there is a difference in war between civilised nations and that against savages” and that the use of dum dum bullets was justified against “the savage” who “although run through two or three times, does not cease to advance”. This was seen by other members of the Sub-Commission as being “contrary to the humanitarian spirit”. The President of the Sub-Commission expressed “the opinion of the assembly in saying that there can be no distinction established between projectiles permitted and the projectiles prohibited according to the enemies against which they fight even in the case of savages”. The Sub-Commission subsequently proposed to the Conférence the following wording: “The use of bullets which expand or flatten easily in the human body (making wounds uselessly cruel), such as explosive bullets, bullets with a hard envelope which does not entirely cover the core or is pierced with incisions, ought to be prohibited.” The reference to explosive bullets was eventually removed from the wording of the Declaration to ensure that the prohibition focused on rifles with calibres which, at that time, were deemed too small to carry explosive projectiles.<sup>5</sup>

### **The 1899 Hague Declaration and wound ballistics**

The Declaration was generated by the state of development of firearms and ammunition at the end of the nineteenth century; the wording arose from the rudimentary understanding of wound ballistics at that time. A treaty prohibition on “bullets which expand or flatten easily in the human body, such as bullets with a hard envelope which does not entirely cover the core or is pierced with incisions” was an adequate legal instrument for addressing the existing problem. Whilst the wording sufficed in those days, it is no longer sufficient to prevent unnecessarily large wounds, given the

<sup>5</sup> W. Crozier, “Report to the United States’ delegation to the First Hague Conférence on the proceedings of the First Commission and its Sub-Commission,” in J. B. Scott (ed.), *Instructions for Delegates of the United States to the Hague Conferences and Their Official Report*, Oxford University Press, Oxford, 1920, pp. 29-35.

variety of ways in which bullets are now constructed, a modern understanding of wound ballistics and recognition that other factors such as bullet velocity are also responsible for the degree of injury and suffering from rifles and handguns.<sup>6</sup>

A brief summary of the current understanding of wound ballistics may be useful here. Both full metal jacket bullets (standard military issue bullets) and prohibited bullets (those with the lead core exposed at the tip) can cause large wounds. The capacity of a bullet to lacerate and crush tissue is given less by the construction of the bullet and more by the kinetic energy it carries. The kinetic energy of a bullet in flight is a product of its mass and its velocity squared (energy =  $mv^2/2$ ) and causes a wound by doing physical “work” on the tissue. The degree of tissue damage and thus the size of the wound depends on the “down-track” energy deposit, that is, the amount of kinetic energy deposited and where this energy is deposited in the bullet’s track through the body.

Prohibited bullets are perceived as causing large wounds only because they tend to expand so depositing their kinetic energy earlier in the wound track than full metal jacket bullets (see Annex). Full metal jacket bullets remain stable in their passage through tissue for a variable distance before turning side-on; this deeper penetration means they may pass through the victim’s body without causing as much tissue damage. The technical explanation for this difference in behaviour of the two bullets is that when lead is exposed at the tip of a bullet, the bullet splays open on impact with tissue; this increases the presenting surface area of the bullet as it travels “down-track” in the wound. This splaying-open happens within a few centimetres of entry and results from the softness of lead.

However, some full metal jacket bullets foreseeably turn earlier in the track as compared with others.<sup>7</sup> When extreme, this phenomenon may result in wounds similar to those produced by dum dum bullets. It is therefore possible that some bullets may comply with the letter but not the object and purpose of the law. In the field, other factors such as ricochet, range and condition of the rifle’s barrel may result in a variety of wounds from “legal bullets”. as has been shown by data from ICRC hospitals.<sup>8</sup> In brief, bullet construction

<sup>6</sup> R. Coupland *et al*, “Wound ballistics, surgery and the law of war, *Trauma*, Vol. 2., 2000, pp. 1-10.

<sup>7</sup> An example is the 5.45 mm bullet fired by the Kalashnikov AK74.

<sup>8</sup> R. Coupland, “Clinical and legal significance of fragmentation of bullets in relation to size of wounds: Retrospective analysis”, *British Medical Journal*, Vol. 319, 1999, pp. 403-406.

is only one of the factors which lead to large wounds. This understanding was the basis of a Swiss proposal that the legality of a bullet should be determined by its pattern of energy deposit and not necessarily by its construction (see below).<sup>9</sup>

### **The importance of bullet construction on the modern battlefield**

As shown by the above equation for calculating the kinetic energy of a bullet, the velocity and mass of a bullet together determine how much tissue damage can potentially be done by it. Bullet construction is only one factor to take into account when considering the size of wounds. Importantly, the higher the velocity, the greater the deformation of a dum dum bullet on impact with tissue. This means that bullet construction becomes a less important factor with increasing range. However, if one considers in the absolute the degree of injury and suffering caused by bullets on the modern battlefield, and not only the size of an individual wound, rate of fire is probably the most important factor; an increased chance of hitting the enemy which may also result in multiple wounds is an important design feature of modern military rifles. As far as we know, there has been no attempt to link the energy deposit from multiple hits to the notion of superfluous injury or unnecessary suffering.

The British arguments cited above against a prohibition on dum dum rifle bullets clearly related to their use at short range – and so at higher velocity – to stop a charging enemy. It should be noted, however, that military rifles at the end of the nineteenth century were single-shot. Furthermore, throughout the twentieth century, firing at short range in combat has become less likely because the soldier's rifle is viewed as part of a system which includes other weapons such as armoured vehicles, artillery and mortars. It could be argued that the Declaration has less relevance to the battlefield now than it did in 1899.

Military experts have often cited the need for “more stopping power” of bullets (presumably meaning greater energy deposit in the body) in anti-terrorist or hostage release operations. Such situations require use of firearms at short range. When such use of firearms falls outside the context of armed conflict, the Declaration does not apply (see below).

<sup>9</sup> B. Kneubuehl “Small calibre weapon systems,” in *Expert Meeting on Certain Weapon Systems and on Implementation Mechanisms in International Law*, International Committee of the Red Cross, Geneva, 1994, pp. 26-39; E. Prokosch, “The Swiss draft Protocol on small-calibre weapon systems”, *International Review of the Red Cross*, No. 307, 1995, pp. 411-425; Second Preparatory Committee for the Second Review Conference of the 1980 CCW, “Protocol on the Use of Small Calibre Arms Systems (Draft)”, UN Doc. CCW/CONF.II/PC.2/WP.2, 4 April 2001.

### The "Swiss proposal"

In 2001, the Swiss government proposed a new Protocol to the Second Review Conférence of the 1980 United Nations Convention on Conventional Weapons (CCW). This would reconcile: first, the limited terminology of the Declaration; second, the object and purpose of the Declaration; and third, a modern understanding of wound ballistics. The "Swiss proposal" was based on testing of bullets in a wound ballistic laboratory.<sup>10</sup> It drew a distinction between the "down-track" energy deposit of a prohibited (dumdum) bullet and that of a legal, military rifle bullet. It proposed defining a limit to the permissible energy deposit within the early part of a bullet's track in the body, thus effectively limiting wound size. This, it was suggested, would be in keeping with the object and purpose of the Declaration. In this way, any new bullet, whatever its construction, could be assessed in terms of whether or not its effects are similar to those of a prohibited bullet. We are generally in favour of this proposal.

Although the proposal did not receive strong support from States party to the CCW, the Review Conférence decided to continue work in this area by inviting "interested States Parties to convene experts to consider possible issues related to small calibre weapons such as: military requirements; scientific and technical factors; medical factors; legal/treaty obligations/standards; and financial implications".<sup>11</sup>

### The question of police bullets

The Declaration was clearly drawn up with military rifles in mind. However, handguns used by many police forces worldwide use bullets with lead exposed at the tip; these bullets both expand and flatten on impact.<sup>12</sup> The use of such bullets would be prohibited in international armed conflict according to the technical wording of the Declaration. Wound ballistic studies explain this apparent paradox and why such police bullets should not be of concern under existing international humanitarian law.

The rifles that were being used at the end of the nineteenth century fired a bullet which delivers a maximum of approximately 3,000 joules energy.<sup>13</sup> The ammunition for police handguns and machine pistols carry approximately

<sup>10</sup> See note 9.

<sup>11</sup> "Draft Final Declaration of the Second Review Conférence of the 1980 CCW", UN Doc. CCW/CONF.II/MC.I/1, p. 7.

<sup>12</sup> K. Sellier and B. Kneubuehl, *Wound Ballistics*, Amsterdam, Elsevier, 1994, pp. 77-83.

<sup>13</sup> See *Ibid.*, pp. 56 and 342.

500 joules energy.<sup>14</sup> Thus the expanding handgun ammunition does not and cannot cause a wound as large as that caused by a dum dum rifle bullet even if the former deposits its energy early in the track. A bullet carrying 500 joules simply does not have the energy to cause a wound as large or as serious as one carrying 3,000 joules. Nevertheless, in terms of wound size near the entry point, deposit of 500 joules early in the track may cause a larger wound than deposit of 3,000 joules further down the track (see Annex). To demonstrate the difference in terms of the effect on health, a clinical analysis of abdominal wounds shows that, if surgical care is available, the mortality from a 500 joule abdominal wound is in the order of 12%, whereas the mortality of 3,000 joule abdominal wounds is above 50% and may be nearer to 90%.<sup>15</sup>

The use by police of bullets with lead exposed at the tip might be justifiable on two counts: first, such bullets are likely to be fired by police in self-defence and at short range so as to maximize the chance of rapid incapacitation of an attacker; and second, the risk of passing through the attacker and so endangering others nearby is minimized.<sup>16</sup> The ballistic facts together with these two justifications mean that use of police bullets with lead exposed at the tip is not incompatible with reasonable use of force. This same reasoning applies to the argument cited above with regard to anti-terrorist or hostage release operations outside armed conflict.

The above wound ballistic analysis and justifications explain why the employment of handguns that use bullets with lead exposed at the tip for domestic law enforcement should not preoccupy experts in international humanitarian law.

## Conclusion

According to available evidence, the 1899 Hague Declaration on Expanding Bullets has been consistently applied and respected from a legal point of view. Nevertheless, efforts to uphold its object and purpose in the light of new technologies are difficult because of the complexity of the many issues at stake. It is now recognized that bullet construction is only one factor in the causation of excessively large wounds. Defence and development of this aspect of international humanitarian law and related legal discourse will be convincing and coherent only if based on an understanding of the wounding potential of the weapon system in question.

<sup>14</sup> *Ibid.*, pp. 341-342.

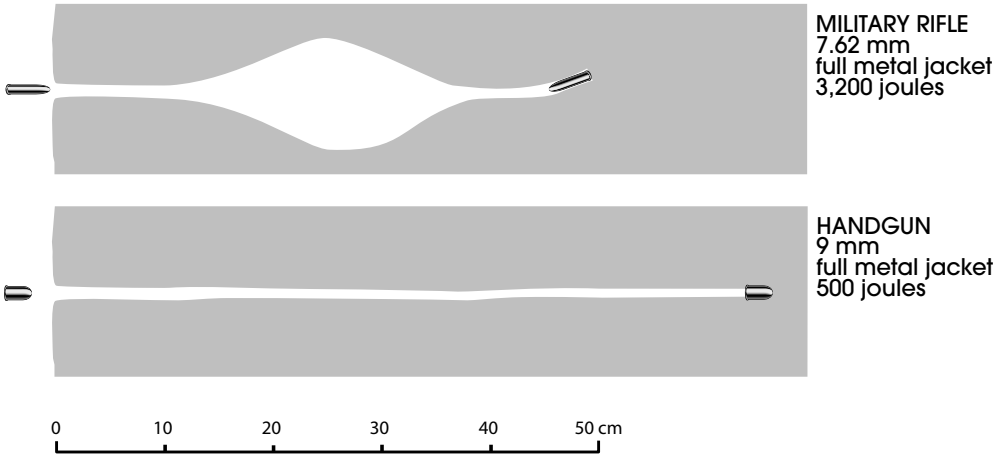
<sup>15</sup> R. Coupland, "Abdominal wounds in war", *British Journal of Surgery*, Vol. 83, 1996, pp. 1505-1511.

<sup>16</sup> See Sellier and Kneubuehl, *op. cit.* (note 12), p. 264.

Annex

Diagrammatic representations of the wound tracks of full metal jacket and “expanding” bullets in human soft tissue simulant (glycerine soap)

**FULL METAL JACKET BULLETS**



**“EXPANDING” BULLETS**

