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Old Laws, New Bullets.

A Tale of an Evolving Battlefield and Its Influence on Weapons Law. Part II

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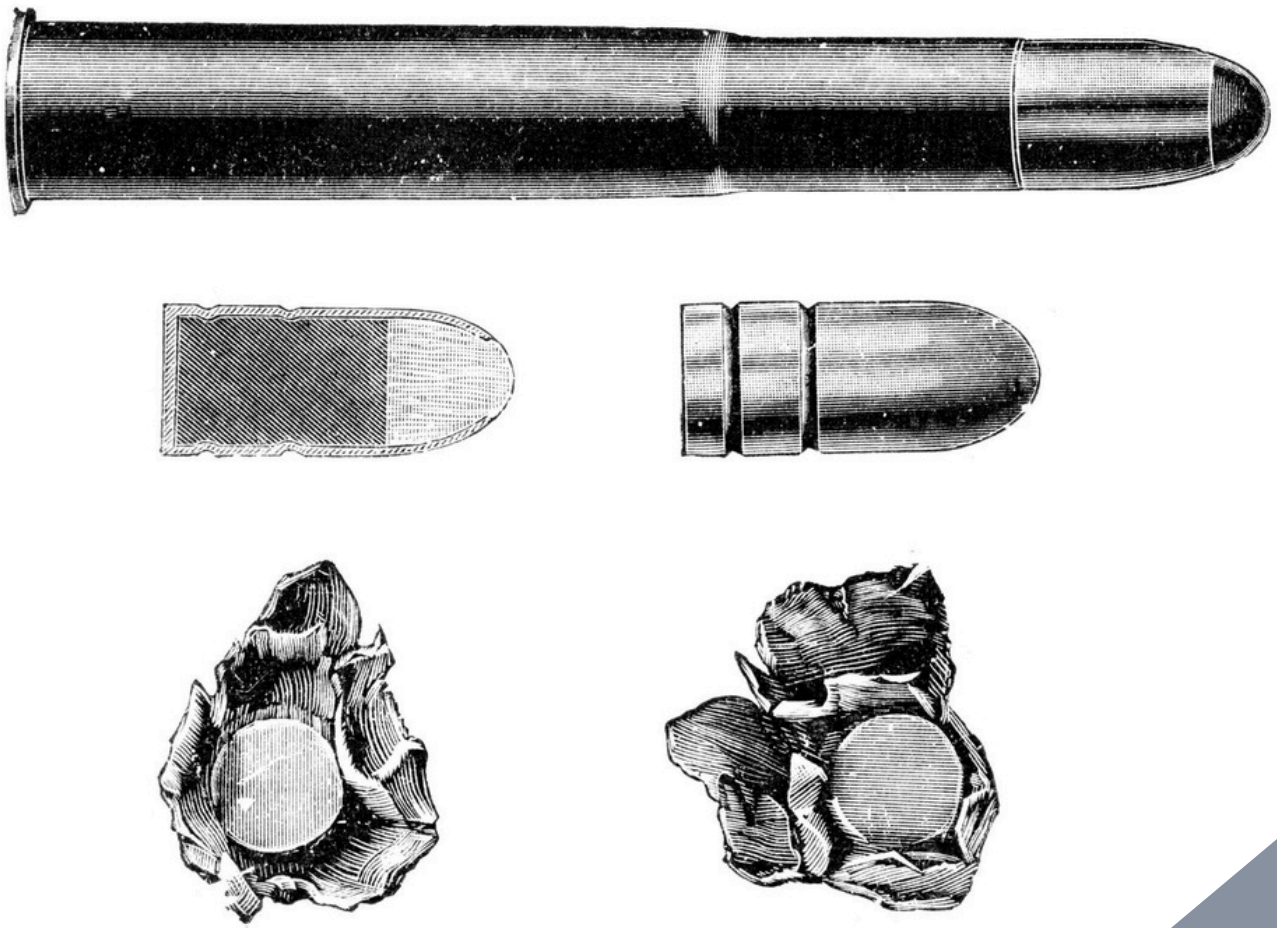

RESEARCH REPORT

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Defence & Security Research Department

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RESEARCH REPORT

1. Introduction to Part II

The previous part of this two-part series started by set the scene, explaining how bullets function and situated their development within the broader context of the nineteenth century. It further examined the historic and contemporary meaning of the Saint-Petersburg Declaration of 1868 (hereafter the Saint-Petersburg Declaration).[1] In doing so, it delved deeper into the negotiations and initial scope of the Saint-Petersburg Declaration and analysed how this changed in light of the changing nature of warfare. In this second part, we will take a similar approach with the Declaration (IV,3) concerning Expanding Bullets of 1899 (hereafter the Hague Declaration).[2] Afterwards, this paper will end with a contemplative chapter focusing on the main point of both papers. Because this two-part paper does not reproduce and build further on the analysis developed in Part I, readers are encouraged to first consult Part I.

2. The Hague Declaration: Original Prohibition and Contemporary Meaning

2.1 *What was sought to be prohibited by the Hague Declaration*

The Hague Declaration, based on the same sentiment as the Saint-Petersburg Declaration, prohibits the use of bullets which expand or flatten easily in the human body. Expanding bullets, as the name implies, are made to deform and expand on impact. When these bullets come into contact with the target, the surface of the bullet rapidly increases, which leads to a significantly higher transfer of energy and a significant effect on the target.[3] Expanding bullets thus do not explode, but because of their expanding tendency, they will instantly transfer high amounts of their energy and create gruesome wounds. Because of this mechanism, expanding bullets will often also not over penetrate as they will lodge themselves in the target.[4]

The Declaration is commonly said to be rooted in a controversial modification of the Mark 2 full metal jacket bullet used by the British in their colonies. British soldiers, confronted with who they called "fanatic savages," realised that their new Mark 2 full metal jacket bullet would pass straight through their target and wouldn't stop the enemy in one shot.[5] This led the British military to modify the Mark 2 bullets at the Dumdum arsenal near Calcutta in 1895.[6] Therefore, expanding bullets were dubbed "dumdum bullets." The British used expanding bullets throughout their colonial endeavours, which resulted in massacres such as at Omdurman.[7] Reports described how the wounds were large, jagged, and torn, with significant damage to bones and surrounding parts.[8]

The British use of expanding bullets in their colonies, remarkably, was a return to earlier practice. In the decades before the development of expanding bullets as a distinct category, bullets were typically made of soft lead. Bullets before the mid-nineteenth century were not made out of harder metals nor did hard metal surrounding the soft lead core. Soft lead bullets tended to deform and expand upon impact.

[1] Declaration Renouncing the Use, in Time of War, of Explosive Projectiles under 400 Grammes Weight (St Petersburg, adopted 29 November 1868).
[1] Declaration (IV, 3) concerning Expanding Bullets (The Hague, adopted 29 July 1899).
[1] Beat P. Kneubuehl (ed), Wound Ballistics: Basics and Applications (1st edn, springer 2011), 101-102.
[1] Ibid.
[1] See for example: Maartje Abbenhuis, Branka Bogdan and Emma Wordsworth, 'Humanitarian bullets and man-killers: Revisiting the history of arms regulation in the late nineteenth century' (2022) 104(920-921) International Review of the Red Cross 1684, 1687 and 1689; Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21(4) War in History 445,459.
[1] Maartje Abbenhuis, Branka Bogdan and Emma Wordsworth, 'Humanitarian bullets and man-killers: Revisiting the history of arms regulation in the late nineteenth century' (2022) 104(920-921) International Review of the Red Cross 1684, 1685.
[1] Ibid.
[1] Ibid.

Nevertheless, humanitarian concerns about excessive injury existed since the adoption of the Saint Petersburg Declaration.[9] The analogy between an explosive bullet and the "explosion-like" effect of the expanding bullet seemed obvious. Sweden, for example, proposed to apply the Saint-Petersburg Declaration to expanding bullets at the Brussels Convention of 1874.[10] Sweden argued that soft lead bullets tended to expand, creating similar wounds as explosive bullets.[11] The proposal did, however, fail as changing soft lead bullets to harder metal bullets would be 'prohibitively expensive'.[12]

It is only with the Hague Declaration that such bullets were prohibited. Regulation became possible due to the introduction of "humanitarian bullets."[13] With the introduction of smokeless powder, which had significant advantages over black powder, bullets had to have hard metal jacket to withstand the higher forces generated by smokeless powder.[14] It is only with the introduction of what is now called full metal jacket bullets that bullets generally did not deform or expand. It is thus only with the invention of this humanitarian bullet that a prohibition on expanding munitions became possible.[15]

The initiative for calling the first Hague Peace Conference of 1899 came from the Russian Tsar Nicholas II. Once again, the precise motivation behind the initiative is contested. Some historians believe that the recent acquisition of quick-firing artillery by the German and Austrian-Hungarian military probably motivated the Tsar.[16] Others argue that the Tsar was influenced by a book of 1897, 'Future War,' which depicts a macabre vision of a future great war of mass slaughter and inconclusive trench warfare.[17] Either way, the Russian Tsar proposed a conference "with the object of seeking the most effective means of ensuring to all peoples the benefits of a real and lasting peace, and, above all, of limiting the progressive development of existing armaments."[18]

Similar to the negotiations of the Saint-Petersburg Declaration, the scope of the Conference initially covered broader arms limitations and other determinations regarding the law of armed conflict.[19] Moreover, expanding bullets were not initially included within the scope of the conference. It was during the first military meeting that a proposal to ban expanding bullets was made by the Swiss and Dutch delegations.[20] With the introduction of full metal jacket ammunition, bullets could be less deadly but still able to stop an enemy. At the time, this was seen as sufficient to place the enemy, in line with the preamble of the Saint-Petersburg Declaration, hors de combat.[21] Bullets which expand, on the other hand, were seen as superfluous. The harm they caused went further than what was necessary.[22]

[9] Ibid, 1687.
[10] Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21(4) War in History 445, 455-456.
[11] Ibid.
[12] Ibid, 456.
[13] Maartje Abbenhuis, Branka Bogdan and Emma Wordsworth, 'Humanitarian bullets and man-killers: Revisiting the history of arms regulation in the late nineteenth century' (2022) 104(920-921) International Review of the Red Cross 1684, 1687.
[14] Ibid, 1693-1695.
[15] Ibid, 1687.
[16] Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21(4) War in History 445, 457.
[17] Sipri, Anti-Personnel Weapons (Routledge 1978), 213.
[18] Ibid.
[19] Elena Kempf, 'The Hague, 1899: The Prohibition of Dum-Dum Bullets in International Law' (2019) Online Atlas on the History of Humanitarianism and Human Rights,<https://hhr-atlas.ieg-mainz.de/articles/kempf-the-hague>.
[20] Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21(4) War in History 445, 459.
[21] Hors de combat is a legal status of a combatant when he is not participating to the hostilities due to for example either in surrender or incapacitation. See also: Maartje Abbenhuis, Branka Bogdan and Emma Wordsworth, 'Humanitarian bullets and man-killers: Revisiting the history of arms regulation in the late nineteenth century' (2022) 104(920-921) International Review of the Red Cross 1684, 1687-1688.
[22] Ibid, 1688.

Indeed, contemporary military doctrine commonly foresaw that the musket was fired in volleys at close range.[15]

During the nineteenth century, various innovations such as percussion cartridges, conical bullets, and smokeless powder quickly followed one another. This ultimately led to the development of rifled breech-loading and repeating firearms.[16] In particular, the invention of smokeless powder was significant, as it increased the power of rifles. It moreover led to a reduction in the calibre to approximately 7-8 mm and the introduction of full metal jacket bullets.[17] At the end of the nineteenth century, the magazine-fed breech-loading, high-powered rifle became the standard adopted by all major powers in Europe.[18] Those developments in firearms technology and ammunition also paved the way for the automation of small arms in the twentieth century.[19]

The evolution from the musket to the rifle was one of many significant evolutions occurring during the nineteenth century. The nineteenth century was a period of rapid technological advancement during the Industrial Revolution.[20] Weapons developed at the time, such as the rifle, the machine gun, and the quick-firing artillery, significantly altered the way war was waged.[21] In addition to military technological evolution, armies were growing larger and national economies were becoming increasingly integrated.[22] These technological and military developments were particularly disruptive.[23]

In addition to being an age of rapid technological development, the nineteenth century was also an age of diplomacy, great power politics and imperialism.[24] European nations, not wanting to get outpaced, were sensitive to the evolving state of technology, as the major powers sought to maintain stability through a balance of power.[25] Against this backdrop of rapid technological change and balance of power, the first contemporary treaties and instruments on the law of armed conflict were introduced. Think, for example, of the first law of war manual, the Lieber Code of 1863 and the First Geneva Convention of 1864.

The nineteenth century was therefore a period of disruptive technological evolution and great power competition. Against this background, the first modern foundations of the law of armed conflict developed. Remarkably, the early modern law of weaponry focused quite heavily on bullets.

[15] ICRC, 'Weapons that may Cause Unnecessary Suffering or have Indiscriminate Effects report on the work of experts' (1973), 30 and 77.
[16] Sipri, Anti-Personnel Weapons (Routledge 1978), 6.
[17] Ibid, 8.
[18] Ibid, 15.
[19] Ibid, 8.
[20] Scott Keefer, ''Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21 (4) War in History 445,449-450; Eric Brose, 'Arms Race prior to 1914, Armament Policy' (1914-1918 Online International Encyclopedia of the First World War, 2014) <https://encyclopedia.1914-1918-online.net/article/arms-race-prior-to-1914-armament-policy/>; ICRC, 'Weapons that may Cause Unnecessary Suffering or have Indiscriminate Effects report on the Work of Experts' (1973), 30 and 77.
[21] Sipri, Anti-Personnel Weapons (Routledge 1978), 12; Scott Keefer, ''Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21 (4) War in History 4 445, 449.
[22] Robert Kolb and Momchil Milanov, 'The 1868 St Petersburg Declaration on Explosive Projectiles: A Reappraisal' (2018) 20 JHIL 515, 516.
[23] Sipri, Anti-Personnel Weapons (Routledge 1978), 12; Scott keefer, ''Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) War in History vol. 21 no. 4 445, 449; ibid.
[24] David Kennedy, 'International Law and the Nineteenth Century: History of an Illusion' (1996) 65 Nordic Journal of International Law 385, 391-392.
[25] Ibid, 390; Schroeder Paul, 'The "Balance of Power" System' (1975) 8 No. 2 Naval War College Review, 2; Hans Ulrich Scupin, 'History of International Law, 1815 to World War I' (1984) MPIL, 1 and 69; Eric Brose, 'Arms Race prior to 1914, Armament Policy' (1914-1918 Online International Encyclopedia of the First World War, 2014) <https://encyclopedia.1914-1918-online.net/article/arms-race-prior-to-1914-armament-policy/>.

3. The Saint-Petersburg Declaration: Original Prohibition and Contemporary Meaning

3.1 *What was sought to be prohibited by the Saint-Petersburg Declaration*

The first treaty provision of the modern era dealing with weaponry is the Saint-Petersburg Declaration.[26] As explained previously, the Saint-Petersburg Declaration prohibits the use of explosive bullets. It was a response against the development of the exploding rifle bullet by numerous European states.[27] The utility of these exploding rifle bullets, at the time, lay in their ability to destroy cases of artillery munitions or to be used as ranging fire.[28] At the time of their introduction, explosive bullets were seen as a normal evolution, paralleling the ongoing development of explosive artillery shells.[29] Initially, explosive bullets were thus used in an anti-material role. However, in 1867, the Russians modified their explosive bullet to allow the bullet to explode on impact with soft tissue in addition to the intended hard targets.[30] This development drew the attention of Tsar Alexander II.

The Russian Tsar, reportedly concerned by the well-being of troops, called for international regulation in 1868.[31] To this end, the Tsar started circulating a circular, intending to reach a norm by agreement through consensus. After receiving replies, a second circular containing a draft protocol was circulated.[32] On the proposal of the Prussian government, the initial intention, aimed at the immediate creation of an international rule by consensus, was broadened to include negotiations during a wider law-making conference.[33] A third circular, further acknowledging the Prussian proposal, negotiated the scope of what was going to be the diplomatic gathering at the conference in Saint-Petersburg.[34]

The common narrative regarding the intentions of the Russian Tsar is that he was motivated by humanitarian ideals; however views on this subject differ.[35] Professor Scott, for example, argues that the Russian circular was as much a reaction to the revolutionary changes in technology as it was a truly humanitarian gesture.[36] The rapid development of technology in light of the balance of power was indeed quite disruptive.[37] For instance, during the negotiations, the Russians expressed fears of an arms race and argued that it would happen at a very high financial cost.[38]

[26] William H Boothby, Weapons and the Law of Armed Conflict (2nd edn, OUP 2016), 134.

[27] Frits Kalshoven, 'Arms, Armaments and International Law' (191 Collected Courses of The Hague Academy of International Law, Brill Nijhoff 1985) 183, 205; Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21 no. 4 War in History 445, 451.

[28] For example, British Major Fosbery created an exploding bullet used since 1863 as mean to the range fire. His accounts of the bullet explains the usefulness of such bullet in a environment with steep mountains where distance is difficult to judge. He moreover explained that explosive bullets could be used on the enemy which had a 'strong moral effect' see Major G. V. Fosbery D.C., 'Explosive Bullets and Their Application to Military Purposes' (1868) Royal United Services Institution Journal, 23; Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21(4) War in History 445, 450; Frits Kalshoven, 'Arms, Armaments and International Law' (191 Collected Courses of The Hague Academy of International Law, Brill Nijhoff 1985) 183, 205.

[29] Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21(4) War in History 445, 450.

[30] Sipri, Anti-Personnel Weapons (Routledge 1978), 211; Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21 no. 4 War in History 445, 450-451.

[31] Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21(4) War in History 445, 451.

[32] Ibid, 452.

[33] Ibid, 452; Emily Crawford 'The Enduring Legacy of the St Petersburg Declaration: Distinction, Military Necessity, and the Prohibition of Causing Unnecessary Suffering and Superfluous Injury in IHL' (2018) 20 JHIL 544, 548.

[34] Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21(4) War in History 445, 452.

[35] William H Boothby, Weapons and the Law of Armed Conflict (2nd edn, OUP 2016), 135.

[36] Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21(4) War in History 445, 450.

[37] Ibid, 447-449.

[38] Sean Watts, 'Regulation-Tolerant Weapons, Regulation-Resistant Weapons and the Law of War' (2015) 91 INT'L L. STUD. 540, 571; James L. Tryon, 'The Hague Conferences' (1911) 20 YALE LAW JOURNAL 470, 471.

Both leading up to and during the conference, there were discussions about the precise extent of the soon-to-be rule. The British and the French delegations, for example, were reluctant to create a broader rule.[39] The arguments used are reminiscent of those found in more recent debates. The British delegation, for example, argued that regulations would hold weapons development back, and since future developments are unknown, regulating now would be unwise.[40] In line with the foregoing, the Swedish delegation said that "one cannot prejudge the progress of science".[41] This illustrates well the impact of state interests over the creation of humanitarian rules and in particular the unwillingness of states to limit or influence their existing arsenals or future procurement.[42] Some historians, for example, explain the British position as being a consequence of having the smallest army of the great powers and thus relying on technological advantage to offset this numerical weakness.[43]

The delegates from sixteen states, all the major military powers except Spain, attended the conference.[44] The broadened scope of the conference did not result in general limits on new technology, as the parties ultimately only chose to include a general principle prohibiting excessive injury in the preamble of the Declaration.[45] This principle did, however, have a significant impact on later weapons laws.

Regarding the operative clause, while the Russian delegation argued for a partial ban, the International Military Commission ultimately chose a total ban on the use of exploding or fulminating bullets under 400 grams.[46] The prohibition was nevertheless not absolute. Firstly, the prohibition was limited to exploding bullets less than 400 grams, an arbitrary dividing line between rifle and artillery ammunition.[47] Secondly, exploding bullets would only be prohibited in the mutual relation of the state parties in the event of war among only themselves, which partly illustrates the racial biases of the time.

Professor Keefer argues that this reciprocity clearly shows that humanity was not the only or most important objective, concluding that:
"*Thus, a new legal norm intended ostensibly for humanitarian purposes was effectively limited to the sphere of European international law, without regard to the mass of humanity outside its protection.*"[48]

Based on the preamble, it is, however, clear that the delegates of the International Military Commission in Saint-Petersburg justified the prohibition on the basis of humanitarian ideals. The preamble states that disabling the enemy was permissible but also sufficient, and while suffering is normal and expected of war, the useless aggravation of suffering would exceed the legitimate object of war.[49] As seen above, the factual

[39] Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences,' (2014) 21(4) War in History 445, 453
[40] Ibid, 454 j° 446 and 452.
[41] Ibid, 453.
[42] William H Boothby, Weapons and the Law of Armed Conflict (2nd edn, OUP 2016), 146.
[43] Ibid, 446 and 452.
[44]Emily Crawford "The Enduring Legacy of the St Petersburg Declaration: Distinction, Military Necessity, and the Prohibition of Causing Unnecessary Suffering and Superfluous Injury in IHL" (2018) 20 JHIL 544, 549.
[45] Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21(4) War in History 445, 453.
[46] Emily Crawford "The Enduring Legacy of the St Petersburg Declaration: Distinction, Military Necessity, and the Prohibition of Causing Unnecessary Suffering and Superfluous Injury in IHL" (2018) 20 JHIL 544, 552; Ibid, 453.
[47] Frits Kalshoven, 'Arms, Armaments and International Law' (191 Collected Courses of The Hague Academy of International Law, Brill Nijhoff 1985) 183, 207.
[48] Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21(4) War in History 445, 454.
[49] Frits Kalshoven, 'Arms, Armaments and International Law' (191 Collected Courses of The Hague Academy of International Law, Brill Nijhoff 1985) 183, 206; Yoram Dinstein, The Conduct of Hostilities under the Law of International Armed Conflict (3rd edn, CUP 2016), 73; William H Boothby, Weapons and the Law of Armed Conflict (2nd edn, OUP 2016), 46.

issue tackled by the Declaration was the use of the exploding rifle bullets, which essentially is a "single enemy" munition.[50] The delegates thus considered that, contrary to artillery, explosive rifle bullets were unnecessary.

Eventually, nineteen states signed or eventually acceded to the Saint-Petersburg Declaration, which included most major European military powers of the time.[51] The negotiations of the Saint-Petersburg Declaration highlight the difficulty in regulating rapidly evolving military technology. While the scope expanded to include a broader discussion on military technology, ultimately, it was only the explosive rifle bullets that were regulated in Saint Petersburg.

Although the Declaration was justified on humanitarian grounds, state interests played a significant role. Delegates expressed fears that regulations would be framed too broadly, limiting further evolutions; others feared the cost of a potential arms race, while others looked to the implications for the balance of power.[52] Regardless, the humanitarian legacy of the preamble is undeniable.[53] The operative clause of the Declaration ultimately contained an absolute prohibition of explosive bullets. This absolute nature, however, did not last. This matter will be examined in the subsequent section.

3.2 *What is the contemporary relevance of the Saint-Petersburg Declaration of 1868*

Since the twentieth century, the widespread use of explosive bullets has led legal doctrine to commonly state that the operative paragraph of the Saint-Petersburg Declaration did not stand the test of time.[54] Solis, for example, stipulates that the operative part of the Declaration has "no longer any practical importance".[55]

These conclusions are based on the observation that after the First and Second World Wars, a proliferation of explosive bullets under 400 grams occurred in multiple applications, such as in aerial warfare, crew-served and shoulder-launched weapons.[56] For example, since the Vietnam War, there has been a widespread use of the 40 mm grenades, shot from grenade launchers.[57] Finally, with only a quick look at a handbook of an ammunition producer, a significant number of explosive projectiles of less than 400 grams intended for both anti-material and anti-personnel (hereafter AP) use can be found.[58] Prima facie, all this violates the Saint-Petersburg Declaration. However, Meltzer explains that this has been a general state practice which evolved mostly unprotested.[59]

[50] Frits Kalshoven, 'Arms, Armaments and International Law' (191 Collected Courses of The Hague Academy of International Law, Brill Nijhoff 1985) 183, 206.
[51] Sean Watts, 'Regulation-Tolerant Weapons, Regulation-Resistant Weapons and the Law of War' (2015) 91 INT'L L. STUD. 540, 569.
[52] Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21(4) War in History 445, 453-454.
[53] Crawford for example, rightly, argues that it is strongly suggested that states actions were motivated by self-interest and short-term objectives, but this does nothing to undermine the current normative force of the declaration, see: Emily Crawford "The Enduring Legacy of the St Petersburg Declaration: Distinction, Military Necessity, and the Prohibition of Causing Unnecessary Suffering and Superfluous Injury in IHL" (2018) 20 JHIL 544, 560.
[54] See for example: William H Boothby, Weapons and the Law of Armed Conflict (2nd edn, OUP 2016), 135; Solis, Gary D., The Law of Armed Conflict: International Humanitarian Law in War (2nd edn, CUP 2016), 44; Nils Melzer, International Humanitarian Law: A Comprehensive Introduction (ICRC 2016), 112; Robert Kolb and Momchil Milanov, 'The 1868 St Petersburg Declaration on Explosive Projectiles: A Reappraisal' (2018) 20 JHIL 515, 519.
[55] Solis, Gary D., The Law of Armed Conflict: International Humanitarian Law in War (2nd edn, CUP 2016), 44.
[56] Tom Ruys, 'The xm25 individual airburst weapon system: a 'game changer' for the (law on the) battlefield? revisiting the legality of explosive projectiles under the law of armed conflict' (2012) 45(3) Israel Law Review 401.
[57] Sipri, Anti-Personnel Weapons (Routledge 1978), 42.
[58] See for example: Nammo, Ammunition Handbook (7edn, 2024), 54 -61 and 80-105.
[59] Nils Melzer, International Humanitarian Law: A Comprehensive Introduction (ICRC 2016), 112.

The proliferation of explosive bullets has mostly been driven by the evolution of warfare during the early twentieth century. With the introduction of planes and vehicles on the battlefield, a need for explosive bullets arose. For example, Professor Ruys argues that explosive anti-materiel bullets carry undeniable military advantages. Armour-piercing combined-effects ammunition can penetrate a lightly armoured target and have an incendiary, blast or fragmentation effect inside the vehicle.[60] The military advantage of those types of munitions is the capability to effectively engage and defeat lightly armoured vehicles, which were introduced on the battlefield after the Second World War.[61]

Today, the prohibition of explosive bullets is a norm of customary international law. Both the customary and treaty rules are said to have evolved to only include the AP use of explosive bullets. The UK Manual on the Laws of War, for example, states that explosive or incendiary weapons solely designed for use against personnel are not permissible under customary law. Although it further explains that a solid round will achieve the military purpose of disabling the enemy combatant, it goes on to state that this "does not prevent the use of tracer, nor does it prevent the use of explosive or combined effects munitions of, for example, 0.5 or 20 mm calibre for defeating materiel targets, even though personnel may be incidentally wounded by them."[62]

The International Committee of the Red Cross (ICRC), for its part, stipulates in its Customary International Humanitarian Law study (CIHL study) that the AP use of bullets which explode within the human body is prohibited; this view seems to be based on state practise and doctrine.[63] As mentioned by Boothby, the ICRC does, however, not specify which standards should be applied when looking at the AP nature of the bullet. The rule can be interpreted to be applied to weapons designed for AP use or intended for AP use, or that have the effect of exploding in the human body.[64] Boothby convincingly argues that the only appropriate standard against which the rule should apply is the design purpose of the weapon, as this links the rule with the operational use for which the weapon has been acquired or produced.[65]

Professor Ruys goes further and describes how, irrespective of the verbal state practice, the prohibition of expanding bullets has evolved even beyond the prohibition of AP use.[66]

According to him, there has been significant 'physical' state practice which has changed the scope of the Declaration.[67] He describes three big changes. The first change happened with the development of aerial warfare, where states used explosive ammunition (even against personnel).[68] This practice is reflected in the Hague rules on aerial warfare and state practice. Secondly, since the First World War, explosive anti-materiel projectiles of less than 400 grams have widely been adopted and accepted.[69] Those weapons often were

[60] Tom Ruys, 'The xm25 individual airburst weapon system: a 'game changer' for the (law on the) battlefield? revisiting the legality of explosive projectiles under the law of armed conflict' (2012) 2nd edn, CUP 2016, 409.
[61] Sean Watts, 'Regulation-Tolerant Weapons, Regulation-Resistant Weapons and the Law of War' (2015) 91 INT'L L. STUD. 540, 572.
[62] UK Ministry of Defence, The Manual of the Law of Armed Conflict (JSP 383) (Joint Doctrine and Concepts Centre), 6.10.1.
[63] Emily Crawford and Alison Pert, International Humanitarian Law (3rd edn, CUP 2024), 235; William H Boothby, Weapons and the Law of Armed Conflict (2nd edn, OUP 2016), 137.
[64] William H Boothby, Weapons and the Law of Armed Conflict (2nd edn, OUP 2016), 137.
[65] Ibid, 136.
[66] Tom Ruys, 'The xm25 individual airburst weapon system: a 'game changer' for the (law on the) battlefield? revisiting the legality of explosive projectiles under the law of armed conflict' (2012) 45(3) Israel Law Review 401, 407.
[67] Ibid, 408.
[68] Ibid.
[69] Ibid, 409.

combined-effects crew-served or shoulder-fired weapons. This led, according to Ruys, to a further distinction between anti-materiel and AP explosive bullets, commonly found in literature and manuals as seen above. A final third evolution concerns the permissibility of anti-personnel non-impact-triggered explosive projectiles. Non-impact-triggered explosive anti-personnel projectiles, such as grenades, have been widely used without objection.[70] As Ruys suggests, it can be argued that customary law mostly tends to limit "single-enemy" explosive bullets.[71] Ruys is of the opinion that "This statement would seem to provide an accurate reflection of the per se prohibition in customary international law as it stands".[72] This view is shared by the German Law of War Manual and other doctrinal works.[73]

This view can be confirmed and expanded if one looks at how bullets conceptually create an effect on the target. It is not the firearms themselves that create an effect on the target, but the projectile it fires. As seen above, conventional bullets are essentially objects that transport kinetic energy created by the propellant to the target. It is the transfer of that kinetic energy by hitting the target which will result in an effect on the target. Conventional small arms bullets thus use the same energy for both propulsion and to produce an effect on the target.[74]

Explosive or incendiary bullets are particular in the sense that an explosive round essentially has two packages of energy: one for propulsion (the powder in the cartridge) and one exclusively meant to create an effect (the explosive or incendiary charge within the bullet)[75] This bullet will thus create an effect on the target through two mechanisms. First, through the traditional transfer of kinetic energy upon impact, generated by the propellant. Second, through an explosive or incendiary effect resulting from a separate energy 'package' contained within the bullet.

From the preamble of the Saint-Petersburg Declaration, it is clear that suffering is normal and expected of war, but the principle found in the Declaration specifically targets the useless aggravation of suffering or the rendering of death inevitable.[76] As discussed previously, the explosive bullets that delegates sought to prohibit in 1868 were a type of ammunition used in standard-issue rifles, designed to explode upon contact with soft tissue, a "single enemy" munition.[77] This also explains the 400 grams limit, an arbitrary dividing line between illegitimate rifle ammunition and legitimate artillery ammunition.[78]

The question thus remains: what precisely did the delegates at Saint-Petersburg see as "uselessly aggravate the sufferings of disabled men, or render their death inevitable", making explosive projectiles under 400 grams "contrary to the laws of humanity"? I would argue that neither the explosive effect nor the kinetic energy of a

[70] Ibid, 415.
[71] Ibid, 416.
[72] Ibid.
[73] Federal Ministry of Defence, Law of Armed Conflict Manual (Joint Service Regulation, ZDv 15/2, 2013), 62; Stefan Oeter, 'Methods and Means of Combat' in Dieter Fleck (ed), The Handbook of International Humanitarian Law (OUP 2008) 130, 137-138.
[74] Beat P. Kneubuehl (ed), Wound Ballistics: Basics and Applications (1st edn, springer 2011), 53.
[75] Ibid.
[76] William H Boothby, Weapons and the Law of Armed Conflict (2nd edn, OUP 2016), 46.
[77] Frits Kalshoven, 'Arms, Armaments and International Law' (191 Collected Courses of The Hague Academy of International Law, Brill Nijhoff 1985) 183, 206; Tom Ruys, 'The xm25 individual airburst weapon system: a 'game changer' for the (law on the) battlefield? revisiting the legality of explosive projectiles under the law of armed conflict' (2012) 45(3) Israel Law Review 401, 416; Robert Kolb and Momchil Milanov similarly state: "The cold rationale was that since the explosive projectile and the ordinary bullet could put out of combat only one soldier, and since at the same time the effect of such modified bullets was considered to be inhuman" see: Robert Kolb and Momchil Milanov, 'The 1868 St Petersburg Declaration on Explosive Projectiles: A Reappraisal' (2018) 20 JHIL 515, 518.
[78] Frits Kalshoven, 'Arms, Armaments and International Law' (191 Collected Courses of The Hague Academy of International Law, Brill Nijhoff 1985) 183, 207.

projectile is, by itself, sufficient to be qualified as uselessly aggravating the sufferings or rendering death inevitable. It is only when a bullet, designed to hit a person, has an effect on the target because of the transfer of its kinetic energy and, in addition, explodes, that the bullet "would uselessly aggravate the sufferings (...) or render their death inevitable". The core of the prohibition is the cumulation of the two packages of energy, which render each other unnecessary.

3.3 *Concluding Thoughts*

The first part of this two-part series has started with a conceptual explanation of what bullets are and a short overview of the broader context of the nineteenth century. Afterwards the paper analysed the historical context and contemporary interpretation of the Saint-Petersburg Declaration. The declaration was adopted in response to explosive rifle bullets modified to target individual combatants rather than hard targets. But the negotiations resulted into an absolute ban of explosive bullets under 400 grams.

Subsequent developments in warfare have significantly altered how the prohibition is understood in practice. This evolution reflects changing military realities rather than a rejection of the underlying humanitarian principle. This paper agued, in line with the superfluous injury and unnecessary suffering principle, the prohibition prohibits the cumulative effects two packages of energy. The second part of this two-part series will turn towards the Hague Declaration, which prohibited expanding bullets. Additionally, the second paper will finish with a reflective chapter further considering how the law of weaponry changes in light of military realities.

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