



**An Overdue Review:
Addressing Incendiary Weapons in the
Contemporary Context**
**Memorandum to Delegates at the Meeting of States Parties
to the Convention on Conventional Weapons**

November 2017

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Introduction

In November 2017, for the first time in 37 years, a UN disarmament body will have a dedicated opportunity to address the humanitarian problems caused by incendiary weapons, one of modern warfare's cruelest class of arms. Nations discussed the topic in depth in the 1970s during the process that led to the 1980 Convention on Conventional Weapons (CCW) and its first three protocols, including Protocol III on incendiary weapons. Since 2010, CCW states parties have expressed renewed concerns about incendiary weapons, but they have lacked a dedicated forum in which to elaborate on their positions. Having finally set aside a specific session to deal with Protocol III at their November 2017 annual meeting, CCW states parties should come prepared to contribute to robust discussions on the harm caused by incendiary weapons and the adequacy of the protocol.

Placing the current debate in a historical context illuminates the importance of revisiting Protocol III, with an eye to updating and strengthening its provisions. The CCW was designed to be a dynamic instrument, and other key components of the 1980 convention have already been revisited.¹ In 1996, states parties amended Protocol II on landmines and booby-traps, and in 2001, they expanded the scope of the framework convention to non-international armed conflicts. A review of Protocol III, which also dates to 1980, is significantly overdue.

This paper shows the necessity and feasibility of such a review by examining the changes to the military and diplomatic landscape since Protocol III was adopted almost four decades ago. When the international community last convened meetings on incendiary weapons, the horrors of the World War II firebombings of Dresden and Tokyo and the extensive use of napalm in Vietnam were at the forefront of diplomats' minds. Public outrage at the death, disfigurement, and destruction caused by these weapons provided impetus for new law, yet Cold War politics limited the progress that could be made. Protocol III was in effect a compromise that dealt with the problems of the past but not those of the future.

As CCW states parties gather for their 2017 annual meeting, incendiary weapons continue to endanger civilians. The past year has seen the repeated use of incendiary

¹ "The structure of the CCW – a chapeau Convention and annexed Protocols – was adopted in this manner to ensure future flexibility." UN Office for Disarmament Affairs, "The Convention on Certain Conventional Weapons," <https://www.un.org/disarmament/geneva/ccw/> (accessed October 19, 2017).

weapons in Syria as well as the use of white phosphorus munitions, which have comparable incendiary effects, in both Iraq and Syria. The nature of warfare has evolved, however, and air-dropped napalm is no longer the sole weapon of concern. Multipurpose and ground-launched incendiary weapons, which fall within Protocol III's loopholes, have become fixtures of contemporary armed conflict. At the same time, support among CCW states parties for reviewing and strengthening Protocol III has been growing.

Human Rights Watch and the Harvard Law School International Human Rights Clinic (IHRC) urge states to seize the opportunity presented by the new agenda item on Protocol III. To do so, they should:

- Make substantive contributions to the discussions at the CCW Meeting of States Parties, including by providing greater detail on their national positions and policies or by adding their voice to the debate for the first time;
- Call for a formal review of the implementation and adequacy of Protocol III;
- Condemn the use of incendiary weapons, including the recent use in Syria;
- Ensure that the Meeting of States Parties sets aside more time in 2018 for discussions of incendiary weapons and Protocol III;
- Promote compliance with and universalization of Protocol III;
- Work over time to strengthen Protocol III by adopting an effects-based definition of incendiary weapons and prohibiting the use of all incendiary weapons, regardless of their delivery systems, in populated areas. A complete ban on incendiary weapons would have the greatest humanitarian benefits.

I. Incendiary Weapons and the Harm They Cause

Incendiary weapons are munitions that produce heat and fire through the chemical reaction of a flammable substance. They can be used to burn people or materiel, penetrate plate metal, produce smokescreens, or provide illumination. They contain different chemical compounds, such as napalm, thermite, or chlorine trifluoride. Whatever the variant, incendiary weapons can cause death or lifelong harm to civilians.

Thermal Burns and Respiratory Damage

Incendiary weapons produce severe thermal burns through their chemical agents and secondary fires. Such injuries have been called “the greatest trauma to which the body can be exposed,” in part because the affected skin is a vital organ.² Due to their extreme heat, incendiary weapons can cause fourth- or even fifth-degree burns, damaging muscles, ligaments, tendons, nerves, blood vessels, and even bones.³ Recovery is generally slow and painful. It often lasts weeks or months and requires the daily changing of dressings, which can be excruciating. Doctors have compared the process of wound cleansing to being “flayed alive.”⁴ Many victims die from their burns, and those who survive are left physically and psychologically scarred.⁵

The heat and smoke from incendiary weapons can also seriously affect the respiratory system. Inhaling hot gas and combustion products can cause respiratory burns and other pulmonary complications, including pneumonia and fluid build-up in the lungs.⁶ Victims may develop serious infections due to injury to the respiratory tract. Because incendiary weapons often emit carbon monoxide or other noxious gases, victims can die from carbon monoxide poisoning. Survivors can experience lingering respiratory problems from smoke inhalation.

² Stockholm International Peace Research Institute, *Incendiary Weapons* (Cambridge, Massachusetts: The MIT Press, 1975), p. 136 (quoting G. Liljedahl Birke, “Studies on Burns: XV,” *Acta Chirurgica Scandinavica*, Supplement 441 (1971), p. 5).

³ UN Department of Political and Security Council Affairs, “Napalm and Other Incendiary Weapons and All Aspects of Their Possible Use: Report of the Secretary-General,” A/8803/Rev. 1, 1973, p. 31.

⁴ Denise Chong, *The Girl in the Picture* (New York: Penguin Group, 1999), pp. 66-67.

⁵ UN Department of Political and Security Council Affairs, “Napalm and Other Incendiary Weapons and All Aspects of Their Possible Use: Report of the Secretary-General,” p. 30.

⁶ Stockholm International Peace Research Institute, *Incendiary Weapons*, pp. 142-143.

Long-Term Effects and Permanent Damage

The injuries from incendiary weapons often cause lasting physical and psychological harm.⁷ Permanent damage can include loss of function in hands due to intense scarring and skin damage,⁸ contractures (restriction of underlying muscles and joints from superimposed scars or inadequate skin grafts), and reduced strength and activity. Treatment of severe pain with drugs can result in dependency and later withdrawal symptoms. Isolation during treatment and being forced to “confront ... the sight of one’s own naked and burned body ... and the stench of one’s own rotting flesh” can be particularly horrifying and exacerbate psychological trauma.⁹ Victims may also be socially shunned because of their severe scarring and disfigurement.

White Phosphorus

Although many states maintain that white phosphorus munitions are excluded from the design-based definition of incendiary weapons in CCW Protocol III, the harm caused by these multipurpose munitions is comparable to that of other incendiary weapons.¹⁰ White phosphorus is a chemical substance that ignites when exposed to atmospheric oxygen at temperatures above 30 degrees C (84 degrees F), and continues to burn while exposed to oxygen, until it is exhausted. The chemical reaction creates intense heat of about 815 degrees C (1,500 degrees F) and produces both light and a thick chemical smoke.¹¹

These characteristics make white phosphorus useful for creating smokescreens to obscure troop movements, blocking out thermal sensors, marking and signaling, providing tracers for ammunition, and destroying fuel supplies and ammunition caches. Some armed forces have used white phosphorus specifically for its incendiary effects, including when targeting people or materiel or “smoking out” sheltered persons in order to kill them with other weapons.¹²

⁷ Ibid., p. 146.

⁸ Hands suffer particular damage from napalm because victims try to wipe the sticky substance off their body. UN Department of Political and Security Council Affairs, “Napalm and Other Incendiary Weapons and All Aspects of Their Possible Use: Report of the Secretary-General,” p. 35.

⁹ Stockholm International Peace Research Institute, *Incendiary Weapons*, p. 149.

¹⁰ The definition of incendiary weapons in Protocol III is discussed in more depth below.

¹¹ Phosphorus oxides react with moisture in the air to produce a smoke cloud of phosphorus-containing acids. The smoke is impenetrable to infrared optics, making it especially effective for protecting tanks from guided missiles.

¹² Human Rights Watch, *Q&A on Incendiary Weapons and CCW Protocol III*, November 11, 2011, <https://www.hrw.org/news/2011/11/11/qa-incendiary-weapons-and-ccw-protocol-iii>.

White phosphorus can cause horrific injuries. Because it is highly soluble in fat and therefore in human flesh, it causes severe thermal and chemical burns, often down to the bone.¹³ These injuries heal slowly and are prone to infection. If fragments of white phosphorus remain in the body, they can exacerbate the harm. Burn wounds can reignite when bandages are taken off and remnants of white phosphorus are re-exposed to oxygen. Doctors may also find previously treated wounds have grown larger and deeper. White phosphorus can enter the bloodstream through wounds and cause multiple organ failure. As a result, burns on only 10 percent of the body are often fatal.¹⁴ Throughout the lengthy period of treatment, victims remain at risk of death.

¹³ David J. Barillo, Leopoldo C. Cancio, and Cleon W. Goodwin, "Treatment of White Phosphorous and Other Chemical Burn Injuries at One Burn Center over a 51-Year Period," *Burns*, vol. 30 (2004), p. 450. See also Lisandro Irizarry et al., "White Phosphorus Exposure," updated April 17, 2017, <http://emedicine.medscape.com/article/833585-overview> (accessed October 16, 2017).

¹⁴ "Identification of Explosive White Phosphorus Injury and Its Treatment," signed by Dr. Gil Hirshorn, colonel, head of the Trauma Unit, Headquarters of the Chief Military Medical Officer, Ref. Cast Lead SH9 01293409 (original Hebrew on file at Human Rights Watch); "Exposure to White Phosphorus," signed by Dr. Leon Fulls, Ministry of Health War Room, January 15, 2009, Ref. Cast Lead SH9 01393109 (original Hebrew on file at Human Rights Watch); Global Security, "White Phosphorus," <http://www.globalsecurity.org/military/systems/munitions/wp.htm> (accessed October 16, 2017).

II. A Legacy of an Earlier Time

CCW Protocol III, the only legally binding instrument dedicated to regulating incendiary weapons, is the product of a specific historical moment. Increased use and growing global outrage propelled states to take action against these cruel weapons in the 1970s. Cold War politics, however, limited the possible legal outcomes. The result was a compromise that responded to the problems of the time but does not adequately deal with the situation today.

Use in World War II and the Korean War

Incendiary weapons became a problematic fixture of modern warfare during World War II in the 1940s and the Korean War in the 1950s. At that time, militaries used the weapons for strategic bombing, that is, to destroy industrial and economic infrastructure, burn buildings, and wipe out large areas.¹⁵

The notorious bombings of Dresden and Tokyo during World War II provided early evidence of the horrors incendiary weapons can cause. In February 1945, Allied forces dropped more than 4,000 tons of high-explosive bombs and incendiary weapons, including napalm, on Dresden, killing an estimated 25,000 people and destroying more than 75,000 dwellings.¹⁶ In the firebombing of Tokyo the following month, incendiary bombs dropped by Allied forces burned down half the city, killing more than 100,000 people and leaving one million homeless.¹⁷

During the Korean War, use of napalm, a highly flammable, sticky, gel-like substance, increased.¹⁸ The Allies dropped about 32,357 tons of napalm on Korea, double what they dropped on Japan in 1945,¹⁹ and more than they used in the entire Pacific theater

¹⁵ Robert M. Neer, *Napalm: An American Biography* (Cambridge, Massachusetts: Belknap Press, 2013), p. 96.

¹⁶ Alan Taylor, "Remembering Dresden: 70 Years After the Firebombing," *The Atlantic*, February 12, 2015, <https://www.theatlantic.com/photo/2015/02/remembering-dresden-70-years-after-the-firebombing/385445/> (accessed October 17, 2017); "Up to 25,000 Died in Dresden's WWII Bombing—Report," *BBC News*, March 18, 2010, <http://news.bbc.co.uk/2/hi/europe/8574157.stm> (accessed October 27, 2017).

¹⁷ Kirk Spitzer, "A Forgotten Horror: The Great Tokyo Air Raid," *Time*, March 27, 2012, <http://nation.time.com/2012/03/27/a-forgotten-horror-the-great-tokyo-air-raid/> (accessed October 17, 2017).

¹⁸ Napalm gets its name from its combination of naphthenic and palmitic acids. Neer, *Napalm*, p. 33.

¹⁹ *Ibid.*, p. 99.

over the course of World War II.²⁰ Militaries valued napalm because it was relatively cheap to obtain, was easy to prepare, and had far-reaching effects.²¹

The effects of napalm, which US Marines in the Korean War nicknamed “cooking oil,” were devastating.²² Army researchers reported that “a pair of 110-gallon napalm tanks ... created a 15,000-square-foot blanket of fire with an ‘effective’ area fifty-yards-square at the center.”²³ US pilots returning from dropping napalm reportedly found the “indiscriminate slaughter” nauseating.²⁴ Three US Navy officers wrote, “[W]e killed civilians, friendly civilians, and bombed their homes; [burned] whole villages with the occupants—women and children and 10 times as many hidden Communist soldiers—under showers of napalm, and the pilots came back to their ships stinking of the vomit twisted from their vitals by the shock of what they had to do.”²⁵

Napalm Use in the Vietnam War

While incendiary weapons had wreaked havoc on cities and civilians in World War II and the Korean War, the US war in Vietnam brought the cruelty of these weapons, and napalm in particular, into the public, and ultimately diplomatic, consciousness. It became a primary motivation for the development of Protocol III.

The staggering use of napalm made incendiary weapons difficult to ignore. In the span of 10 years, from 1963 to 1973, US and South Vietnamese forces dropped about 388,000 tons of US-made napalm bombs on Indochina, which represented about twelve times what was dropped on Korea over a three-year period.²⁶ In other words, the yearly average of napalm used in Vietnam was about 2.5 times the average in Korea between 1950 and 1953 and 2.4 times the total that fell on Japan during 1945, the deadliest year of bombing. Incendiary weapons in Vietnam were used to “penetrat[e]

²⁰ “Not only did the allies drop more bombs on Korea than in the Pacific theater during World War II—635,000 tons, versus 503,000 tons—more of what fell was napalm, in both absolute and relative terms.” Ibid., pp. 99-100.

²¹ Earle Townsend, a staffer in the US Office of the Chief Chemical Officer, wrote in 1951: “It is a simple matter to mix some Napalm powder in with a barrel of gasoline, let it ‘brew’ for 24 hours, then pour it into a 150-gallon jettisonable fuel tank and head for any target that might present itself.” Ibid., p. 99.

²² Ibid., p. 93.

²³ According to a former Army combat radio operator, napalm’s power and broad footprint meant it could destroy enemy tanks “so long as your bomb [was] in the general vicinity.” Ibid.

²⁴ Capt. Walter Karig, USNR, et al., *Battle Report: The War in Korea*, (New York: Rinehart and Company, 1952), p. 111.

²⁵ Ibid.

²⁶ Neer, *Napalm*, p. 111.

caves and trenches” and to burn down forests and jungles, rather than to level cities, but in the process, they killed or injured villagers living in the area.²⁷

Media reports of US and South Vietnamese use of napalm increased awareness and forced the public to confront the cruelty of incendiary weapons. In January 1967, “magazines at opposite ends of US journalism, geographically, historically, and demographically, broke the story.”²⁸ The news media described napalm’s brutal effects on civilians, especially children, to the American public for the first time.²⁹ For example, one article gave a detailed account of a 7-year-old child whose burned skin “looked like swollen, raw meat; the fingers of his hand were stretched out, burned rigid.”³⁰ Nick Ut’s 1972 photograph “The Terror of War,” which captured a seriously burned 9-year-old girl fleeing a napalm attack, quickly became “a cultural shorthand for the atrocities of the Vietnam War.”³¹ The war’s unpopularity, combined with vivid photographs and television coverage, generated public outrage about the use of incendiary weapons and napalm in particular. By the 1970s, states, too, began to express their concern.

The Diplomatic Response

The wars fought in the mid-twentieth century provided the impetus for international discussions about incendiary weapons that culminated in the adoption of CCW Protocol III in 1980. Over the course of the 1970s, states addressed a range of weapons, including incendiary ones, in several diplomatic fora, including: an ad hoc Committee on Conventional Weapons;³² the Conference of Government Experts on the Use of Certain Conventional Weapons (CGE), which was convened by the International Committee of the Red Cross (ICRC) and met in Lucerne and Lugano in 1974 and 1976;³³

²⁷ Ibid., pp. 114-115. The US developed a different version of napalm, called Napalm-B, that worked better in the tropical climate and temperatures of Southeast Asia. Edwin A. Martini, “World on Fire: The Politics of Napalm in the Global Cold War,” *Cold War History*, vol. 16:4 (2015), <http://dx.doi.org/10.1080/14682745.2015.1080242> (accessed November 14, 2017), p. 479.

²⁸ Neer, *Napalm*, p. 126.

²⁹ Ibid.

³⁰ Another article provided a detailed report and a 15-page catalog of civilian victims of napalm burns. Ibid., p. 127; Martha Gellhorn, “Suffer the Little Children...,” *Ladies Home Journal*, January 1967, p. 108.

³¹ “The Terror of War,” in *Time: 100 Photos*, <http://100photos.time.com/photos/nick-ut-terror-war> (accessed October 27, 2017).

³² This committee was established during the first session of the Diplomatic Conference on the Reaffirmation and Development of International Humanitarian Law Applicable in Armed Conflicts (CDDH). Robert J. Mathews, “The 1980 Convention on Certain Conventional Weapons: A Useful Framework despite Earlier Disappointments,” *International Review of the Red Cross*, vol. 83:844 (2001), p. 995.

³³ The meetings also addressed landmines, booby-traps, small-caliber projectiles, blast and fragmentation weapons, and other categories of conventional weapons. International Committee of the Red Cross (ICRC), Report on the

and the CCW preparatory and negotiating conferences. The debate at these meetings was quite politicized, and participants tended to align along Cold War lines.³⁴ Despite the widespread stigma associated with incendiary weapons, the tense political climate of that era limited the outcome of these discussions.

A number of states, primarily countries from the Non-Aligned Movement (NAM) joined by a few Western countries, called for an outright prohibition on incendiary weapons. At the CGE, one of Sweden's representatives, Hans Blix, repeatedly advocated for a total ban on "the whole family of incendiary weapons."³⁵ At the CCW preparatory conference in 1979, Austria, Egypt, Ghana, Jamaica, Mexico, Romania, Sudan, Sweden, Switzerland, Togo, Venezuela, Yugoslavia, and Zaire put forward a proposal prohibiting all use of incendiary weapons.³⁶ During the CCW diplomatic conference in 1979, a delegate from Mexico expressed the view that a majority of states supported a total ban on incendiary weapons.³⁷

More conservative Western military powers, particularly Australia, Canada, the Netherlands, and the United States, however, argued that a complete ban was beyond reach. These states challenged the "technical accuracy" of reports on the impacts of incendiary weapons prepared by the UN secretary-general and the ICRC and argued that the suffering the weapons caused was not capable of accurate measurement.³⁸ In an internal memorandum from 1978, a UK government official argued that while the United Kingdom did not need incendiary weapons itself, its allies did, and therefore, it should reject both a proposal for "an outright ban on any use [of incendiary weapons]

Conference of Government Experts on the Use of Certain Conventional Weapons, Second Session—Lugano, January 21–February 26, 1976, https://www.loc.gov/rr/frd/Military_Law/pdf/RC-conf-experts-1976.pdf (accessed October 14, 2017), p. 2, paras. 6-7.

³⁴ Stephanie Carvin, "Conventional Thinking? The 1980 Convention on Certain Conventional Weapons and the Politics of Legal Restraints on Weapons during the Cold War," *Journal of Cold War Studies*, vol. 19 (2017), pp. 48-49.

³⁵ *Ibid.*, pp. 48-49.

³⁶ Proposal by Austria et al., Preparatory Conference on Prohibitions or Restrictions of Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects, U.N. Doc. No. A/CONF.95/PREP.CONF./L.1/Rev.1, Rev.1/Add.1, Add.2 (1979).

³⁷ Statement of Mexico, Convention on Conventional Weapons, Committee of the Whole, Summary Record of the Fifth Meeting, Geneva, September 21, 1979, A/CONF.95/CW/SR.5, September 24, 1979, para. 17. But see W. Hays Parks, "The Protocol on Incendiary Weapons," *International Review of the Red Cross*, vol. 279 (November-December 1990), pp. 535 and 538 (saying "there appeared to be little support for a total prohibition on incendiary weapons" at the preparatory conference).

³⁸ Carvin, "Conventional Thinking?" *Journal of Cold War Studies*, pp. 48-50. For the reports critiqued, see ICRC, *Weapons That May Cause Unnecessary Suffering or Have Indiscriminate Effects* (Geneva: ICRC, 1973), https://www.loc.gov/rr/frd/Military_Law/pdf/RC-Weapons.pdf (accessed October 27, 2017), ch. VI; R. Scott, "Unnecessary Suffering?—A Medical View," in Michael A. Meyer, ed., *Armed Conflict and the New Law: Aspects of the 1977 Protocols and the 1981 [sic] Weapons Convention* (London: British Institute of International and Comparative Law, 1989).

in any circumstance” and Norway’s proposal of “a ban on any use against personnel, but not against objects that are military objectives.”³⁹ The memorandum recommended that the government instead accept the Dutch proposal “restricting [incendiary] use to military targets,” which “codifie[d] existing law and practice.”⁴⁰

States from the Soviet bloc were “nominally supportive of the prohibitionist group” but would not accept a far-reaching, broad prohibition that would harm Soviet interests.⁴¹ One scholar has suggested that while these states essentially held similar views to those of the United States, their official stance was that they would accept prohibitions or restrictions, “but these should be negotiated in the context of a world-wide disarmament conference.”⁴²

This series of meetings led to the negotiation and adoption of the CCW and its first three protocols, including Protocol III on incendiary weapons. The latter represented progress because it sought to reduce the harm caused by incendiary weapons. Because Western powers and the Soviet bloc opposed a broad prohibition, however, the proposal from the NAM and other states for an outright ban was not realized.⁴³ At the time of the protocol’s adoption, many states expressed disappointment at its weaknesses, especially its failure to prohibit all use of incendiary weapons.⁴⁴

³⁹ UK Memorandum in advance of 1979 Conference of “Inhumane” Weapons (on file with Human Rights Watch). The memorandum stated, “The UK has no operational requirement for napalm nor for incendiary flame weapons with primary incendiary effect. However napalm is important to some of our allies (US, France, Belgium, FRG [Federal Republic of Germany] and Denmark) for close air support.” Ibid., annex E, para. 4. Furthermore, the UK memo maintained that a distinction should be made between weapons with primary and secondary incendiary effects. “We cannot accept that the use of these weapons with secondary incendiary effects, for example white phosphorus smoke, which we use for signaling, marking and screening purposes only, should be restricted.” Ibid., annex E, para. 5.

⁴⁰ Ibid.

⁴¹ Carvin, “Conventional Thinking?” *Journal of Cold War Studies*, p. 51.

⁴² C.G. Fenrick, “New Developments in the Law Concerning the Use of Conventional Weapons in Armed Conflict,” *Canadian Yearbook of International Law*, vol. 19 (1981), p. 239.

⁴³ “As for the possibility, contents and form of proposals relating to the use of incendiary weapons, several experts emphasized once again the need for any agreement on this score to find the broadest support practicable. Experts were cautioned in this context against trying to ban forms of use of incendiary weapons that were considered essential from a military point of view.” See ICRC, Report on the Conference of Government Experts on the Use of Certain Conventional Weapons, Second Session—Lugano, p. 11, para. 23.

⁴⁴ See, for example, Statement of Mexico, Convention on Conventional Weapons, Second Session, Committee of the Whole, Summary Record of the 15th Meeting, Geneva, October 8, 1980, A/CONF.95/CW/SR.15, October 21, 1980, paras. 8-9; Statement of Romania, Convention on Conventional Weapons, Second Session, Committee of the Whole, Summary Record of the 14th Meeting, Geneva, October 3, 1980, A/CONF.95/CW/SR.14, October 10, 1980, para. 2. Several states also recommended using the CCW’s review conferences to improve the protocol. See, for example, Statements of Mexico, Finland, and Egypt, Convention on Conventional Weapons, Second Session, Committee of the Whole, Summary Record of the 15th Meeting, Geneva, October 8, 1980, A/CONF.95/CW/SR.15, October 21, 1980, paras. 8-9, 11, and 15.

III. Protocol III: A Historical Compromise and Its Contemporary Shortcomings

While Protocol III was a positive step toward addressing the humanitarian harm caused by incendiary weapons, it responded to the past rather than prepared for the future. Its provisions address the use of incendiary weapons that was characteristic of mid-twentieth-century wars. In the four decades that followed its 1980 adoption, however, it has become clear that the instrument has two legal loopholes that were unanticipated or dismissed at the time of its drafting.

The Provisions of Protocol III

Protocol III represented a diplomatic compromise that focused on the major concerns about incendiary weapons at the time of its adoption, particularly air-dropped napalm.⁴⁵ In Article 1, the protocol uses a design-based definition for incendiary weapons. That provision states that an incendiary weapon is “any weapon or munition which is primarily designed to set fire to objects or to cause burn injury to persons.”⁴⁶ This definition encompassed napalm and other common incendiary weapons that inflicted suffering from World War II through the Vietnam War. Such offensive weapons were produced and used for the purpose of causing burns and setting fires.

Article 2 sets forth restrictions on the use of incendiary weapons. It reiterates international humanitarian law with its prohibition on making civilians the object of an incendiary weapon attack in any circumstances. It prohibits any use of air-dropped incendiary weapons in concentrations of civilians. It prohibits the use of ground-launched incendiary weapons in concentrations of civilians, *except* when the military target is “clearly separated from the concentration of civilians and all feasible precautions are taken to limit the incendiary effects” and minimize injury or loss of life to civilians. Finally, Article 2 prohibits making forests or plant cover the object of attack, unless they are used to conceal military objectives. As with the definition, drafters of the protocol reacted to the most problematic use of incendiary weapons in previous wars. They focused on air-dropped models and they defined “concentration of

⁴⁵ ICRC, Report on the Conference of Government Experts and the Use of Certain Conventional Weapons, Lucerne, September 24–October 18, 1974, https://www.loc.gov/rr/frd/Military_Law/pdf/RC-conf-experts-1974.pdf (accessed October 20, 2017), pp. 20–22.

⁴⁶ Protocol on Prohibitions or Restrictions on the Use of Incendiary Weapons (Protocol III) to the Convention on Certain Conventional Weapons (Protocol III), adopted October 10, 1980, entered into force December 2, 1983, art 1(1),

civilians” broadly to encompass places ranging from cities, like Dresden and Tokyo, to villages, such as those in the jungles of Vietnam.

Legal Loopholes

In the context of today’s armed conflicts, Protocol III has loopholes in both its definition and its regulations.

Design-Based Definition

First, Protocol III’s design-based definition of incendiary weapons arguably excludes most multipurpose incendiary munitions. Article 1(1)(b) states that incendiary weapons do not include weapons with “incidental incendiary effects, such as illuminants, tracers, smoke or signaling systems.”⁴⁷ The definition does not cover munitions, like those containing white phosphorus, that set fires and cause burns but are primarily designed to create smokescreens or signal troops.⁴⁸ The applicability of Protocol III thus depends largely on how developers, manufacturers, and users describe the purpose of a weapon. The nature or magnitude of impact or injury caused by the weapon is not taken into account, as long as its primary purpose is considered beyond the scope of the protocol.

This definitional loophole is important because multipurpose incendiary weapons are commonly used in twenty-first-century armed conflicts and have caused harm to civilians. Most notably, in 2009, the Israel Defense Forces (IDF) launched approximately 200 white phosphorus munitions, primarily 155mm artillery shells and 120mm mortar projectiles, into populated areas of Gaza, killing at least 12 civilians and injuring dozens more.⁴⁹ For example, on January 17, three white phosphorus artillery shells burst over a UN school in Beit Lahiya, where 1,600 civilians were sheltering; they killed two sleeping brothers, injured 14 other people, and set a classroom on fire.⁵⁰ The

⁴⁷ Ibid., art. 1(1)(b).

⁴⁸ Maj. Shane R. Reeves, a military officer and professor at the United States Military Academy at West Point, interprets Protocol III to exclude white phosphorus when it is intended for something other than burning. Major Reeves explained: “when white phosphorous munitions are employed for a non-incendiary purpose,” such as to create a smokescreen, “the munitions clearly fall outside the definition of an ‘incendiary weapon’ and will not be regulated by Protocol III.” Even though “white phosphorous is at times employed solely because of its ‘incidental’ incendiary effects, thus essentially converting the munition into an incendiary weapon,” the current design-based definition in Protocol III ensures that white phosphorus escapes regulation. Maj. Shane R. Reeves, “The ‘Incendiary’ Effect of White Phosphorous in Counterinsurgency Operations,” *The Army Lawyer* (June 2010), <https://ssrn.com/abstract=2295118> (accessed October 27, 2017), p. 86.

⁴⁹ Human Rights Watch, *Rain of Fire: Israel’s Unlawful Use of White Phosphorus in Gaza*, March 2009, <https://www.hrw.org/sites/default/files/reports/iopto309webwcover.pdf>, p. 5.

⁵⁰ Ibid., pp. 3-4.

incidental incendiary effects of such weapons can be as cruel and indiscriminate as the effects that the CCW sought to reduce by limiting the use of napalm.

Weaker Regulation for Ground-Launched Munitions

Second, Article 2 of the protocol places strict restrictions on the use of air-dropped incendiary weapons but only weakly regulates ground-launched variants. While Protocol III prohibits all use of air-dropped incendiary weapons in concentrations of civilians, as noted above, the provision on the use of ground-launched incendiary weapons in such areas includes several caveats. This outdated distinction ignores the reality that incendiary weapons cause the same horrific burns and destructive fires regardless of their delivery mechanisms. In addition, ground-launched incendiary weapons, especially delivered by multi-barrel rocket launchers, tube artillery, and mortars, have wide area effects, which means the lack of an absolute prohibition on the use in populated areas endangers civilians. Finally, non-state armed groups have greater access to ground-launched incendiary weapons and may feel less pressure not to use them if international law, and the resulting norm, is less than absolute.

IV. Recent Use of Incendiary Weapons

Decades after the conclusion of the Vietnam War and 37 years after the adoption of Protocol III, incendiary weapons still pose a threat to civilians. Since 1980, incendiary weapons have reportedly been used in at least 16 conflicts in 13 countries on three continents.⁵¹ Over the past year, Syrian government and Russian forces have dropped incendiary bombs on populated areas in Syria, while the US-led coalition has used white phosphorus munitions in urban centers in northern Syria and Iraq while fighting the Islamic State. These attacks and other twenty-first-century examples show that Protocol III has proven inadequate to address the problems of incendiary weapons.

Syria

Human Rights Watch has documented 22 attacks with incendiary weapons in Syria in 2017, which represents about a quarter of the total number it has documented in the course of Syria's five-year armed conflict. The coalition of Syrian government and Russian forces carried out attacks in five Syrian governorates between February 1 and April 17, 2017. For example, an online video from March 16 shows the use of incendiary weapons in the town of Om al-Krameel, about 30 kilometers outside the city of Aleppo.⁵² On April 8 and 9 alone, there were five attacks with ZAB-series incendiary submunitions delivered by RBK-500 series air-dropped bombs in the city of Saraqeb and nearby villages in the Idlib governorate.⁵³ The governorates of Damascus, Hama, and Rif Damashq were also affected by the use of incendiary weapons in 2017.

⁵¹ Incendiary weapons have reportedly been used by the Soviet Union in Afghanistan in 1980 and 1985, in El Salvador in the early 1980s, by Argentina in the Falkland Islands in 1982, by Libya in Chad in 1982, by Turkey in Iraq against the Kurds in the 1990s, by nationalist Serbs in Bosnia in 1994, in Libya in 2015, in Ukraine in 2014-15, and by Syrian government and Russian forces in Syria since 2012. Since 2000, the use of white phosphorous has become more prevalent. It has reportedly been used by both the Taliban and the United States in Afghanistan in 2003-2009, by the United States in Iraq in 2004, by Israel in Lebanon in 2006 and in Gaza in 2008-09, by Ethiopia in Somalia in 2007, by the Saudi-led coalition in Yemen in 2016, and by the US-led coalition in Syria and Iraq since 2016. See Human Rights Watch and IHRC, *The Human Suffering Caused by Incendiary Munitions: Memorandum to Convention on Conventional Weapons Delegates*, March 2011, <http://hrp.law.harvard.edu/wp-content/uploads/2011/04/sufferingweapons.pdf>, p. 2; Human Rights Watch and IHRC, *Time to Act against Incendiary Weapons: Memorandum to Delegates at the Fifth Review Conference of the Convention on Conventional Weapons*, December 2016, https://www.hrw.org/sites/default/files/supporting_resources/12.12.2016_final_incendiary_weapons_memo_1.pdf, pp. 6-13.

⁵² Matt Broomfield, "New Footage Shows Russia Using 'White Phosphorous' in Syria, Activists Claim," *The Independent*, March 16, 2017, <http://www.independent.co.uk/news/world/middle-east/syria-russia-war-white-phosphorous-claims-video-footage-a7618976.html> (accessed October 18, 2017).

⁵³ See, for example, Syrian Network for Human Rights, "Fires Caused by Incendiary Weapons Used by Suspected Russian Forces in Saraqeb City in Idlib Governorate on April 9," April 10, 2017, <http://sn4hr.org/blog/2017/04/10/fires-caused-incendiary-weapons-used-suspected-russian-forces-saraqeb-city-idlib-governorate-april-9> (accessed October 18, 2017).

Human Rights Watch verified each of these 22 incendiary weapons attacks through a combination of video, photographic, and testimonial evidence. There have been reports of at least 18 additional attacks in 2017 that Human Rights Watch has not confirmed. Many more attacks have likely gone unreported or were not documented by visual media. While Human Rights Watch has not itself documented civilian casualties from the incendiary attacks in 2017, 12 civilians were reportedly injured in the city of Deir ez-Zor on August 3, 2017.⁵⁴

According to Human Rights Watch research, Soviet-made ZAB-series submunitions, most often delivered in RBK-500 series bombs, were used in all but two of the 22 confirmed attacks.⁵⁵ ZAB-series submunitions contain thermite, a flammable substance made of aluminum and ferric oxide.⁵⁶ Thermite is the “hottest burning man-made substance in the world.”⁵⁷ It can even burn through steel.⁵⁸ The thermite in ZAB-series submunitions ignites while falling and burns intensely for up to 10 minutes.⁵⁹ Witnesses have described these thermite weapons as looking like “fireballs.”⁶⁰

Syrian government forces have been dropping incendiary weapons on concentrations of civilians in Syria since 2012. Human Rights Watch documented more than 68 attacks by Syrian government forces or their Russian allies from November 2012 to 2016.⁶¹ The

20, 2017); Syrian Network for Human Rights, “Remnants of Suspected Russian Forces Incendiary Weapons on Heish Town in Idlib Governorate on April 8,” April 8, 2017, <http://sn4hr.org/blog/2017/04/08/remnants-suspected-russian-forces-incendiary-weapons-heish-town-idlib-governorate-april-8> (accessed October 20, 2017); Syrian Network for Human Rights, “Remnants of Suspected Russian Forces Incendiary Weapons in Bsamis Village in Idlib Governorate on April 8,” April 9, 2017, <http://sn4hr.org/blog/2017/04/09/remnants-suspected-russian-forces-incendiary-weapons-bsamis-village-idlib-governorate-april-8> (accessed October 20, 2017); Hadi Alabdallah, “VIDEO: Pro-Regime Russian Jets Dropped Internationally-Prohibited Napalm on Maaret Hirmeh, Idlib, a Short While Ago” Twitter post, April 8, 2017, 8:33am, <https://twitter.com/HadiAlabdallah/status/850733400524816384> (accessed October 20, 2017).

⁵⁴ “12 Civilians Have Been Killed in Airstrikes with White Phosphorus against the Town of Tabani in West of Deir Ezzor,” *Deirezzor24*, August 3, 2017, <http://en.deirezzor24.net/12-civilians-have-been-killed-in-airstrikes-with-white-phosphorus-against-the-town-of-tabani-in-west-of-deir-ezzor> (accessed October 18, 2017); AJA Breaking, Twitter post, <https://twitter.com/AJABreaking/status/893023737993244673> (accessed October 29, 2017).

⁵⁵ “Syria/Russia: Incendiary Weapons Burn in Aleppo, Idlib,” Human Rights Watch news release, August 16, 2016, <https://www.hrw.org/news/2016/08/16/syria/russia-incendiary-weapons-burn-aleppo-idlib>.

⁵⁶ Atlantic Council, *Breaking Aleppo*, February 2017, <http://www.publications.atlanticcouncil.org/breakingaleppo/wp-content/uploads/2017/02/BreakingAleppo.pdf> (accessed October 29, 2017), p. 32.

⁵⁷ Josie Ensor, “Russians ‘Caught Out’ Using Incendiary Weapons in Syria by Own Channel Russia Today,” *The Telegraph*, June 22, 2016, <http://www.telegraph.co.uk/news/2016/06/22/russia-caught-out-using-incendiary-weapons-in-report-by-own-chann> (accessed October 18, 2017).

⁵⁸ Atlantic Council, *Breaking Aleppo*, p. 32.

⁵⁹ Mary Wareham, “Incendiary Weapons Burn Again in Syria,” Human Rights Watch dispatch, April 12, 2017, <https://www.hrw.org/news/2017/04/12/incendiary-weapons-burn-again-syria>.

⁶⁰ Ensor, “Russians ‘Caught Out’ Using Incendiary Weapons in Syria by Own Channel Russia Today,” *The Telegraph*.

⁶¹ Human Rights Watch and IHRC, *Time to Act against Incendiary Weapons*, p. 10.

actual number of attacks using incendiary weapons in Syria is believed to be much higher. For example, there were reports that incendiary weapons were used 130 times between June 2 and December 8, 2016.⁶² For a few weeks between June and August 2016, incendiary weapons were used almost daily in opposition-held areas, including at least 18 times in Aleppo and Idlib.⁶³ During this period, witnesses and first responders reported that at least 12 civilians were wounded in five incendiary weapon attacks in these regions.⁶⁴ Syria is not a state party to Protocol III.

Incendiary weapons attacks in Syria became more frequent after Russia began joint operations with Syrian government forces in September 2015. In June 2016, *Russia Today* showed footage of incendiary weapons being mounted on a Russian SU-34 aircraft at the Russian air base in Hmeymim, Syria.⁶⁵ Within Syria, these aircraft are used exclusively by the Russian air force. Despite clear evidence to the contrary, Russia has denied using incendiary weapons in Syria.⁶⁶ Russia is party to Protocol III, which prohibits the use of air-dropped incendiary weapons in areas with concentrations of civilians.

Use of incendiary weapons by Syrian government and Russian forces has caused serious harm to civilians. In September 2016, for example, six people were killed and 27 injured when incendiary weapons fell on the Bustan al Qasr and al Kallaseh neighborhoods of Aleppo.⁶⁷ A month earlier, on August 19, incendiary weapons hit a field hospital in Darya, in the suburbs of Damascus. A local councilman described arriving at the scene to help rescue people and finding that “[t]he whole building was on fire.” He recalled that “an empty oxygen bottle blew up in one of the rooms.... The flames passed through the vents, and the operating room was soon on fire.” The councilman recalled that when he and other rescuers entered the building, “we got lost in the dust, the smoke, and the burning smell.”⁶⁸ Syrian government aircraft have also

⁶² The Syria Civil Defense (a volunteer search-and-rescue organization operating in opposition-held areas of Syria) and local media activists reported these numbers. See *Ibid.*, p. 7.

⁶³ *Ibid.*, p. 1; “Syria/Russia: Incendiary Weapons Burn in Aleppo, Idlib,” Human Rights Watch news release, August 16, 2016, <https://www.hrw.org/news/2016/08/16/syria/russia-incendiary-weapons-burn-aleppo-idlib>.

⁶⁴ “Syria/Russia: Incendiary Weapons Burn in Aleppo, Idlib,” Human Rights Watch news release, August 16, 2016.

⁶⁵ Mary Wareham, “Incendiary Weapons Burn Again in Syria,” Human Rights Watch dispatch, April 12, 2017.

⁶⁶ Human Rights Watch and IHRC, *Time to Act against Incendiary Weapons*, p. 7.

⁶⁷ RT Arabic, October 20, 2016, video clip, YouTube, <https://www.youtube.com/watch?v=dK6Hw4G3Xpk>, (accessed October 18, 2017); Syrian Network for Human Rights, “Aleppo-Bostan Al Qasr: Incendiary Weapons Shelling by Suspected Russian Warplanes Pt. 2,” September 25, 2016, video clip, YouTube, https://www.youtube.com/watch?v=_6TMhuTlpcY&feature=youtu.be (accessed October 18, 2017).

⁶⁸ Human Rights Watch interview with Mohammad Abi Rashed, Daraya Local Council and media activist, August 23, 2016. The witness added, “One of the napalm barrels was buried in a hole. When they poured water over, it made the

hit schools with incendiary weapons, causing horrific results. In 2013, incendiary bombs landed on a school in Urum al-Kubra, Aleppo, killing at least 37 civilians—mostly children with an average age of 16—and wounding at least 44 others.⁶⁹

White Phosphorus in Syria and Iraq

The US-led coalition forces used ground-launched white phosphorus in 2017 while fighting the Islamic State in both the northern Iraqi city of Mosul and the northern Syrian city of Raqqa.⁷⁰ Photographs from March 2017 show US Marines with M825A1 white phosphorus projectiles in northern Syria.⁷¹ Videos from early June 2017 show white phosphorus munitions raining down over Mosul and Raqqa.⁷² In the aftermath of these incidents, a spokesman for the US-led coalition stated that “white phosphorous rounds are used for screening, obscuring and marking in a way that fully considers the possible incidental effects on civilians and civilian structures.”⁷³ With regard to the incident in Mosul, Iraqi Security Forces stated that they used the munitions in Mosul to create a smokescreen, and the US-led coalition issued a statement explaining it “used smoke and precision munitions to suppress the enemy and provide cover for fleeing civilians.”⁷⁴

Regardless of the intent behind it, the use of white phosphorus, especially in populated areas, poses immediate and long-term threats to civilians. As discussed above, it can burn skin and muscle down to the bone and reignite in the body when exposed to oxygen, even weeks after its initial use. It is also notoriously difficult to extinguish with water or soil.⁷⁵ Although Human Rights Watch has not itself verified any

water boil. Imagine also, when we tried to pick the barrel up the next day, it caught fire with the wind.” For more information, see Human Rights Watch and IHRC, *Time to Act against Incendiary Weapons*, p. 9.

⁶⁹ Human Rights Watch and IHRC, *Incendiary Weapons: Recent Use and Growing Opposition*, November 2014, <https://www.hrw.org/news/2014/11/10/incendiary-weapons-recent-use-and-growing-opposition>, p. 5.

⁷⁰ The Pentagon posted a photograph taken in March 2017 of Marine M777 howitzers with white phosphorus munitions. See Thomas Gibbons-Neff, “U.S.-Led Forces Appear to Be Using White Phosphorus in Populated Areas in Iraq and Syria,” *Washington Post*, June 9, 2017, https://www.washingtonpost.com/news/checkpoint/wp/2017/06/09/u-s-led-forces-appear-to-be-using-white-phosphorous-in-populated-areas-in-iraq-and-syria/?utm_term=.19bb383d56cf (accessed October 18, 2017).

⁷¹ Ibid.

⁷² Ibid.; “Iraq/Syria: Danger from US White Phosphorus,” Human Rights Watch news release, June 14, 2017, <https://www.hrw.org/news/2017/06/14/iraq/syria-danger-us-white-phosphorus>.

⁷³ Anne Barnard, “U.S.-Led Forces Said to Have Used White Phosphorus in Syria,” *New York Times*, June 10, 2017, https://www.nytimes.com/2017/06/10/world/middleeast/raqqa-syria-white-phosphorus.html?_r=0 (accessed October 29, 2017).

⁷⁴ “Iraq/Syria: Danger from US White Phosphorus,” Human Rights Watch news release, June 14, 2017.

⁷⁵ “Iraq: Use of White Phosphorus Munitions Puts Civilians at Grave Risk,” Amnesty International news release, October 28, 2016, <https://www.amnesty.org/en/latest/news/2016/10/iraq-use-of-white-phosphorus-munitions-puts-civilians-at-grave-risk/> (accessed October 20, 2017).

civilian casualties in Mosul or Raqqa, according to the *New York Times*, Raqqa residents reported that approximately 20 people were killed when white phosphorus munitions hit an Internet café in early June 2017.⁷⁶

Other Recent Uses of Ground-Launched Incendiary Weapons and White Phosphorus

Incendiary weapons have been used in several other twenty-first-century armed conflicts. These incidents illustrate the ongoing harm caused by ground-launched incendiary weapons and white phosphorus munitions in particular.

The use of traditional ground-launched incendiary weapons endangered civilians and damaged their property in at least two communities in Ukraine in 2014. Residents of Ilovaïsk, a town 30 kilometers southeast of Donetsk, described weapons resembling fireworks falling on their town over three nights and burning three homes. Residents of Luhanskoe, located south of Donetsk, told Human Rights Watch that something that looked like fireworks fell on the small village on the night of July 25-26, leaving burning remnants that were hard to extinguish. Several homes were burned, although they could not determine if the fires were due to the “fireworks” or other weapons launched at the same time. Human Rights Watch researchers found hexagonal capsules from incendiary weapons at both sites and an abandoned firing position in a field about 18 kilometers south-southwest of Ilovaïsk with several misfired incendiary 9M22S Grad rockets.⁷⁷

In 2016, the *Washington Post* reported that Saudi-led coalition had used ground-launched munitions containing white phosphorus in Yemen, although the paper was unable to determine the purpose of the use.⁷⁸ A spokesman for the Saudi-led coalition denied, in an email to the *Washington Post*, that the coalition had used white phosphorus in its operations in Yemen.⁷⁹ Saudi Arabia has been a party to Protocol III of the Convention on Conventional Weapons since 2007.

⁷⁶ Barnard, “U.S.-Led Forces Said to Have Used White Phosphorus in Syria,” *New York Times*.

⁷⁷ For more information on the use of incendiary weapons in Ukraine, see Human Rights Watch and IHRC, *Incendiary Weapons: Recent Use and Growing Opposition*, pp. 6-7.

⁷⁸ Thomas Gibbons-Neff, “Saudi Arabia Appears to Be Using U.S.-Supplied White Phosphorus in its War in Yemen,” *Washington Post*, September 19, 2016, https://www.washingtonpost.com/news/checkpoint/wp/2016/09/19/saudi-arabia-appears-to-be-using-u-s-supplied-white-phosphorus-in-its-war-in-yemen/?utm_term=.cde45b68fadb (accessed October 20, 2017).

⁷⁹ Ibid.

US use of ground-launched white phosphorus weapons to target enemy combatants in Fallujah, Iraq, in November 2004 demonstrated that they cause civilian harm even when used against legitimate military targets.⁸⁰ US forces used “shake and bake” tactics, which combine “white phosphorus and high explosive artillery rounds, fired in quick succession, to dislodge and kill enemy combatants in entrenched positions.”⁸¹ Although the US Department of Defense claimed it targeted only enemy combatants, witnesses reported that civilians had injuries consistent with white phosphorus. Jeff Englehart, a US Marine who spent two days in Fallujah during the battle, said he saw “the burned bodies of women and children.”⁸² A resident described “weird bombs that put up smoke like a mushroom cloud” and said he watched “pieces of these bombs explode into large fires that continued to burn on the skin even after people dumped water on the burns.”⁸³

Non-state armed groups have also used white phosphorus as an incendiary weapon. The US military reported at least 44 incidents in which Taliban militants stored and used white phosphorus in attacks against Western forces in Afghanistan between 2003 and 2009. The United States stated that the Taliban used white phosphorus in both improvised explosive devices (IEDs) and mortar and rocket attacks. These attacks included a number of incidents in which Afghan civilians and NATO troops received severe burns.⁸⁴

⁸⁰ “UK Used White Phosphorous in Iraq,” *BBC News*, November 16, 2005, http://news.bbc.co.uk/2/hi/uk_news/politics/4441822.stm (accessed October 18, 2017).

⁸¹ Philip Hashey, “White Phosphorous Munitions: International Controversy in Modern Military Conflict,” *New England Journal of International & Comparative Law*, vol. 17 (2011), p. 299.

⁸² Andrew Buncombe and Solomon Hughes, “The Fog of War: White Phosphorus, Fallujah and Some Burning Questions,” *The Independent*, November 15, 2005, <http://www.independent.co.uk/news/world/americas/the-fog-of-war-white-phosphorus-fallujah-and-some-burning-questions-5348984.html> (accessed October 18, 2017).

⁸³ Buncombe and Hughes, “The Fog of War: White Phosphorus, Fallujah and Some Burning Questions,” *The Independent*.

⁸⁴ For more information, see Human Rights Watch and IHRC, *The Human Suffering Caused by Incendiary Munitions*, p. 15.

V. A Changed Military and Political Landscape

Times have changed since an international body last had the issue of incendiary weapons on its agenda almost 40 years ago. Use of incendiary weapons remains a humanitarian problem, but the specific means and methods employed are not the same. In addition, in the post-Cold War era, the diplomatic discussions have become more inclusive and critical of the harm caused by incendiary weapons. The shifting military and political landscape makes reviewing and strengthening Protocol III both necessary and feasible.

Military Developments

In the lead-up to the negotiations of the CCW, the use of napalm in Vietnam was at the forefront of drafters' minds. While air-dropped incendiary weapons continue to be used, especially in Syria, they are not the only incendiary weapons of concern in contemporary warfare.

In recent years, white phosphorus munitions have become a regular feature of armed conflict. As discussed above, this multipurpose weapon has been used in a number of twenty-first century conflicts by states and non-state armed groups as a weapon and for other purposes. Israel's use of white phosphorus in Gaza in 2009 generated international outrage and brought the issue of incendiary weapons back to the attention of CCW states parties. Unlike napalm, white phosphorus munitions fall outside Protocol III's definition of incendiary weapons since they are not "primarily designed" for incendiary purposes. Their cruel effects, however, must be addressed because they endanger civilians, no matter the weapon's intended purpose.

In their 2017 CCW discussions, states must also look beyond air-dropped incendiary weapons because ground-launched incendiary weapons have become more prevalent than they were in the 1970s. As described earlier, Human Rights Watch found evidence of such weapons in Ukraine in 2014, and ground-launched white phosphorus munitions have been used in a number of countries. Even non-state armed groups, increasingly present in today's armed conflicts, have had access to such weapons.

Growing Political Support

Changes to the political landscape since the adoption of Protocol III will likely facilitate more constructive dialogue and legal reform. Forty-three states selected the experts

who participated in the last Conference of Government Experts in 1976,⁸⁵ and only 50 states signed the CCW in its first year. As of October 2017, 120 states are party to the CCW, and 115 are party to Protocol III in particular.⁸⁶ The increase in states parties means that more countries will be part of the discussions on incendiary weapons at the 2017 Meeting of States Parties.

While not all CCW parties have commented publicly on incendiary weapons, over the past decade the number of countries that have explicitly addressed the topic at Meetings of States Parties or the UN General Assembly's First Committee on Disarmament has grown exponentially. In 2010, three states called for strengthening international law on incendiary weapons. Since then, more than 35 states and the European Union have expressed concerns about the use of incendiary weapons and/or called for a review of Protocol III.⁸⁷ At the 2016 Review Conference alone, of the 89 states present, at least 24 states plus the European Union criticized the use of incendiary weapons and in some cases the adequacy of the law governing them; South Africa and Chile made statements on incendiary weapons for the first time.⁸⁸ No longer constrained by Cold War politics, many states have spoken out against the humanitarian problems of incendiary weapons.

⁸⁵ ICRC, Conference of Government Experts on the Use of Certain Conventional Weapons, Second Session–Lugano, p. 1. For a full list of participants, see pp. 209–226.

⁸⁶ UN Office at Geneva, "The Convention on Certain Conventional Weapons: High Contracting Parties and Signatories,"

[https://www.unog.ch/80256EE600585943/\(httpPages\)/3CE7CFC0AA4A7548C12571C00039CBoC?OpenDocument](https://www.unog.ch/80256EE600585943/(httpPages)/3CE7CFC0AA4A7548C12571C00039CBoC?OpenDocument) (accessed October 24, 2017).

⁸⁷ Argentina, Australia, Austria, Canada, Chile, Colombia, Costa Rica, Croatia, Cyprus, Djibouti, Ecuador, Estonia, Finland, France, the Holy See, Hungary, Ireland, Italy, Kazakhstan, Latvia, Lithuania, Mauritius, Mexico, Moldova, Montenegro, the Netherlands, New Zealand, Nigeria, Palestine, Pakistan, Slovenia, South Africa, Sweden, Switzerland, the United Kingdom, the United States, and the European Union. See statements from CCW Meetings of States Parties and Review Conferences between 2010–2016, generally available at UN Office at Geneva, "The Convention on Certain Conventional Weapons: Meetings of the States Parties," [https://www.unog.ch/80256EE600585943/\(httpPages\)/700BD7373A1FE2BCC12573CF005AFC00?OpenDocument](https://www.unog.ch/80256EE600585943/(httpPages)/700BD7373A1FE2BCC12573CF005AFC00?OpenDocument) (accessed October 20, 2017), and Reaching Critical Will, "Convention on Certain Conventional Weapons (CCW)," <http://reachingcriticalwill.org/disarmament-fora/ccw> (accessed October 20, 2017). See also Human Rights Watch notes from those meetings.

⁸⁸ Australia, Austria, Canada, Chile, Costa Rica, Croatia, Ecuador, Finland, France, the Holy See, Ireland, Italy, Latvia, Lithuania, Mexico, Moldova, Montenegro, New Zealand, Slovenia, South Africa, Sweden, Switzerland, the United Kingdom, the United States, and the European Union. For statements from the CCW's Fifth Review Conference, held in December 2016, see UN Office at Geneva, "Fifth Review Conference,"

[https://www.unog.ch/80256EE600585943/\(httpPages\)/9F975E1E06869679C1257F50004F7E8C?OpenDocument](https://www.unog.ch/80256EE600585943/(httpPages)/9F975E1E06869679C1257F50004F7E8C?OpenDocument) (accessed November 8, 2017); United Nations, "Digital Recordings Portal," <https://conf.unog.ch/digitalrecordings/#> (accessed November 8, 2017); Reaching Critical Will, "Statements from the Fifth CCW Review Conference," <http://www.reachingcriticalwill.org/disarmament-fora/ccw/2016/revcon/statements> (accessed November 8, 2017); Human Rights Watch notes from the 2016 Fifth CCW Review Conference.

The calls to strengthen or review Protocol III and the widespread condemnation of recent use illustrate the stigma against use of incendiary weapons and a greater willingness to address the harm these weapons cause.⁸⁹

Calls to Strengthen Protocol III

In 2016, five states parties specifically called for strengthening Protocol III: Argentina, Costa Rica, Croatia, the Holy See, and Moldova.⁹⁰ At least three of these states supported an effects-based definition of incendiary weapons in particular. Croatia recognized the problems with the current definitional loophole and called to improve “Protocol III’s definitions and scope by focusing on actual effects of the weapon, and not its intended effects.”⁹¹ Moldova was similarly concerned about “the consequences of weapons with incidental incendiary effects,” and called on states parties to begin work in 2017 to address the “legal loopholes around use in order to fully ensure the continued applicability and relevance of Protocol III.”⁹² The Holy See declared that incendiary weapons should be “regulated or prohibited regardless of the purpose for which the weapons are primarily designed.”⁹³

Calls to Review Protocol III

Recognizing the need to update Protocol III, 10 additional states called for or expressed a willingness to participate in a review of the protocol.⁹⁴ Ecuador, for example, recommended establishing a group of experts to study incendiary weapons and their detrimental effects on civilian populations.⁹⁵ It was especially concerned that the current design-based definition of incendiary weapons allows white phosphorus to escape regulation. Ireland stated that it wanted to examine the “applicability and

⁸⁹ In 2016, five states expressed views that Protocol III was sufficient and should not be discussed: Brazil, Bulgaria, Canada, France, and Russia.

⁹⁰ Argentina, Costa Rica, Croatia, the Holy See, and Moldova.

⁹¹ Statement of Croatia, CCW Fifth Review Conference, Geneva, December 12–16, 2016, http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/ccw/2016/RevCon/statements/12Dec_Croatia.pdf (accessed October 9, 2017), p. 3.

⁹² Statement of Moldova, CCW Fifth Review Conference, Geneva, December 12–16, 2016, http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/ccw/2016/RevCon/statements/12Dec_Moldova.pdf (accessed October 9, 2017), p. 2.

⁹³ Statement of the Holy See, CCW Fifth Review Conference, Geneva, December 12–16, 2016, audio recording of full meeting in original language, <https://conf.unog.ch/digitalrecordings/#> (accessed October 19, 2017), 1:49:20–1:50:09. In the same statement, the Holy See noted more generally that there was “no room for weak decisions and compromises” at the Review Conference.

⁹⁴ Austria, Chile, Ecuador, Finland, Ireland, Italy, Mexico, New Zealand, Panama, and Switzerland.

⁹⁵ Statement of Ecuador, CCW Fifth Review Conference, Geneva, December 12–16, 2016, http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/ccw/2016/RevCon/statements/12Dec_Ecuador.pdf (accessed October 9, 2017), p. 4 (translation by IHRC).

relevance” of Protocol III to current armed conflicts.⁹⁶ Finland underscored that “keeping this theme [incendiary weapons] on the agenda of the CCW is of great importance.”⁹⁷ The ICRC supported continued discussions as well.⁹⁸

Switzerland took the lead in turning these statements into action by proposing that the November 2017 Meeting of States Parties set aside time to discuss incendiary weapons. Switzerland recommended that states address the “question of whether Protocol III adequately protects civilians as well as combatants from the severe effects of the weapons covered by Protocol III.”⁹⁹ Although states parties did not reach consensus on Switzerland’s language regarding the specific content of discussions, they agreed to add Protocol III to the agenda of their 2017 meeting.¹⁰⁰

Condemnation and Expressions of Concern

The vast majority of states that spoke at the Review Conference about incendiary weapons expressed their concern about the humanitarian consequences of the weapons. For example, Montenegro stated plainly that the “unbearable suffering for civilian populations caused by incendiary weapons is unacceptable.”¹⁰¹ The European Union remained “gravely concerned over the deteriorating situation in Syria which is causing unacceptable suffering for civilian populations” and “condemn[ed] the alleged use of air-delivered incendiary weapons against civilians or military targets located within a concentration of civilians in Syria,” using the language of Protocol III to

⁹⁶ Statement of Ireland, CCW Fifth Review Conference, Geneva, December 12–16, 2016, http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/ccw/2016/RevCon/statements/12Dec_Ireland.pdf (accessed October 9, 2017), p. 4.

⁹⁷ Statement of Finland, CCW Fifth Review Conference, Geneva, December 12–16, 2016, audio recording of full meeting in original language, <https://conf.unog.ch/digitalrecordings/#> (accessed October 19, 2017), 46:29–46:45.

⁹⁸ ICRC, “Views and Recommendations for the Fifth Review Conference of the Convention on Certain Conventional Weapons,” CCW/CONF.V/WP.3, September 26, 2016, <https://documents-dds-ny.un.org/doc/UNDOC/GEN/G16/212/13/pdf/G1621213.pdf?OpenElement> (accessed October 29, 2016).

⁹⁹ Statement of Switzerland, CCW Fifth Review Conference, Geneva, December 12–16, 2016, http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/ccw/2016/RevCon/statements/12Dec_Switzerland.pdf (accessed October 9, 2017), p. 6–7, (translation by Reaching Critical Will).

¹⁰⁰ UN, *Final Document of the Fifth Review Conference*, CCW/CONF.V/10, December 23, 2016, [https://www.unog.ch/80256EDD006B8954/\(httpAssets\)/B80134C5E97FB90AC125814F0047CCB1/\\$file/FinalDocument_FifthCCWRevCon.pdf](https://www.unog.ch/80256EDD006B8954/(httpAssets)/B80134C5E97FB90AC125814F0047CCB1/$file/FinalDocument_FifthCCWRevCon.pdf) (accessed October 2, 2017), p. 10.

¹⁰¹ Statement of Montenegro, CCW Fifth Review Conference, Geneva, December 12–16, 2016, http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/ccw/2016/RevCon/statements/12Dec_Montenegro.pdf (accessed October 9, 2017), p. 1.

condemn use in Syria.¹⁰² Croatia looked beyond Syria and “strongly condemn[ed] indiscriminate use of incendiary weapons against civilians in Syria and anywhere.”¹⁰³

New Zealand called for the final declaration of the Fifth Review Conference to use stronger language than previous ones. Reacting to the “horrific and compelling reports about the recent use of incendiary weapons against civilians in Syria,”¹⁰⁴ New Zealand felt “that the political declaration emerging from this Review Conference must record more than just ‘concern’ about this issue.”¹⁰⁵ New Zealand wanted the document to register “condemnation of any use of incendiary weapons against civilians or civilian objects.”¹⁰⁶ New Zealand’s call was successful, and for the first time states parties approved language “condemning” incendiary weapons use in a final declaration or report following a CCW review conference or meeting of states parties.¹⁰⁷ Reflecting the growing stigma against incendiary weapons, states parties agreed in the final declaration to “condemn any use of incendiary weapons against civilians or civilian objects,” and any use of incendiary weapons that violates international humanitarian law.¹⁰⁸

¹⁰² Statement of the European Union, CCW Fifth Review Conference, Geneva, December 12–16, 2016, http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/ccw/2016/RevCon/statements/12Dec_EU.pdf (accessed October 9, 2017), p. 4.

¹⁰³ Statement of Croatia, CCW Fifth Review Conference, Geneva, December 12–16, 2016, http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/ccw/2016/RevCon/statements/12Dec_Croatia.pdf (accessed October 9, 2017), p. 3.

¹⁰⁴ Statement of New Zealand, CCW Fifth Review Conference, Geneva, December 12–16, 2016, pp. 2–3.

¹⁰⁵ “In light of horrific and compelling reports about the recent use of incendiary weapons against civilians in Syria, it is New Zealand’s view that the political declaration emerging from this Review Conference must record more than just ‘concern’ about this issue. Rather, we consider that the declaration presents an appropriate opportunity to register our condemnation of any use of incendiary weapons against civilians or civilian objects, and against military targets where the incendiary effects of the weapons would be incompatible with Protocol III and with customary International Humanitarian Law. We must not miss this chance to strongly encourage 24niversalization and full implementation of Protocol III.” Statement of New Zealand, CCW Fifth Review Conference, Geneva, December 12–16, 2016, http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/ccw/2016/RevCon/statements/12Dec_NZ.pdf (accessed October 9, 2017), pp. 2–3.

¹⁰⁶ Statement of New Zealand, CCW Fifth Review Conference, Geneva, December 12–16, 2016, http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/ccw/2016/RevCon/statements/12Dec_NZ.pdf (accessed October 9, 2017), pp. 2–3.

¹⁰⁷ The final reports of the 2013-2015 CCW Meeting of States Parties “noted the concerns raised by a number of High Contracting Parties over the allegations of use of incendiary weapons against civilians.” The final reports of the 2011 Review Conference and 2012 Meeting of States Parties noted some states parties’ concerns about the use of white phosphorus. None of these reports condemned the use of incendiary weapons. For more information on the final reports, see CCW Meeting of States Parties, *Final Report*, November 12-13, 2015, CCW/MSP/2015/9, para. 20; Human Rights Watch and IHRC, *From Condemnation to Concrete Action: A Five-Year Review of Incendiary Weapons*, November 2015, https://www.hrw.org/sites/default/files/supporting_resources/incendiaries-5_year_review-final_o.pdf, p. 18.

¹⁰⁸ The full paragraph reads: “Notes the concerns raised by a number of High Contracting Parties over the recent growing number of reports of use of incendiary weapons against civilians and condemns any use of incendiary weapons against civilians or civilian objects, and any other use incompatible with relevant rules of International Humanitarian Law,

Civil Society Engagement

At the 2016 Review Conference, civil society also called for reviewing and strengthening law on incendiary weapons. In addition to Human Rights Watch, Mines Action Canada and the Women’s International League for Peace and Freedom (WILPF) urged states to set aside time to discuss Protocol III. PAX, a Dutch peace organization, described Protocol III as “the CCW’s flawed protocol” and encouraged states to create “stronger international law” to protect civilians from incendiary weapons.¹⁰⁹

including provisions of Protocol III where applicable.” CCW Fifth Review Conference, *Final Document of the Fifth Review Conference*, p. 15.

¹⁰⁹ Statement of PAX, CCW Fifth Review Conference, Geneva, December 12–16, 2016, http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/ccw/2016/RevCon/statements/12Dec_PAX.pdf (accessed October 9, 2017), pp. 1–2.

VI. Recommendations

Human Rights Watch and IHRC recommend states parties take the following steps in order to address the ongoing use of incendiary weapons and to build on the growing political support for reviewing and strengthening Protocol III.

Advance CCW Discussions

During their annual meeting in November 2017, CCW states parties should take advantage of having Protocol III on the agenda to:

- 1) Have substantive discussions that address the harms caused by incendiary weapons, the shortcomings of Protocol III, and ways to strengthen the protocol.
- 2) Increase the quantity and improve the quality of statements regarding incendiary weapons. States that have previously expressed support for reviewing and in some cases strengthening Protocol III should speak in more detail about their national positions and policies. New states from all regions should add their voices to the discussion.
- 3) Call for a formal review of the implementation and adequacy of Protocol III.
- 4) Condemn the use of incendiary weapons, including the recent use in Syria, in both national statements and the meeting's final report.
- 5) Ensure that the Meeting of States Parties sets aside more time for discussion of the implementation and adequacy of Protocol III in 2018. Since 2010, momentum for addressing the problems of incendiary weapons within the CCW framework has been building gradually but steadily. States parties should continue this forward progress.

Improve Protections for Civilians

To help the CCW better protect civilians from incendiary weapons, states parties should:

- 1) Promote compliance with and universalization of Protocol III. Use of incendiary weapons in Syria underscores the need to urge states parties, such as Russia, to meet their obligations and to pressure states not party, including Syria, to join the instrument.
- 2) Strengthen Protocol III by closing the two loopholes detailed in this report. First, states parties should replace the overly narrow, design-based definition of “incendiary weapons” with an effects-based definition that classifies weapons based on their actual effects rather than on the designer or user’s intent. Under this approach, the protocol would cover any munitions, including those containing white phosphorus, that cause burns or ignite fires as a result of a chemical reaction, even if they were designed primarily as an illuminant or a screening device.

Second, states parties should strengthen the rules restricting the use of incendiary weapons. They should at a minimum eliminate the distinction between air-dropped and ground-launched incendiary weapons, a historical legacy that has no relevance today. The protocol should prohibit use of all incendiary weapons, regardless of their delivery mechanism, in concentrations of civilians. In the long run, a complete ban on the use of incendiary weapons would have the greatest humanitarian impact.

Strengthening Protocol III would bind states parties to stricter rules while putting greater pressure on parties outside the CCW to comply with its standards. Stigmatization of incendiary weapons has already proven effective in influencing the decision-making of states not party, including Israel, which changed its policy and practice regarding white phosphorus munitions after attracting international condemnation in 2009.¹¹⁰

¹¹⁰ Israel adopted a new policy toward the use of white phosphorus in 2013, and there were no confirmed reports of the use of white phosphorus munitions by Israeli forces during their military operations in Gaza in 2014. For more information on Israel’s use of white phosphorus in 2009 and its change of policy and practice, see Human Rights Watch and IHRC, *Incendiary Weapons: Recent Use and Growing Opposition*. For an explanation of its 2013 policy, see Israel Defense Forces website, “IDF Clarifies Policy Regarding White Phosphorus,” last updated February 2013, <https://www.idfblog.com/about-the-idf/idf-units/legal-issues/clarification-idf-policy-white-phosphorous/> (accessed November 8, 2017).

By advancing discussions of incendiary weapons and working to strengthen the provisions of Protocol III, countries can help make the protocol an instrument for this century rather than a legacy of the last one. In so doing, they will improve the protection of civilians from incendiary weapons, an especially cruel and indiscriminate category of munitions.