THE LEGALITY OF THE USE OF WHITE PHOSPHORUS BY THE UNITED STATES MILITARY DURING THE 2004 FALLUJAH ASSAULTS

ROMAN REYHANI

ABSTRACT

The assaults on Fallujah by the United States military in April and November of 2004 involved the use of white phosphorus. White phosphorus has extremely damaging effects on the health of victims, including severe burns and irritation of the respiratory system. This article examines whether the use of white phosphorus was a violation of the Chemical Weapons Convention, Protocol III to the Convention on Conventional Weapons and international humanitarian law. It concludes that the use of white phosphorus was illegal because it is arguably a chemical weapon, riot control agent, or incendiary weapon. Furthermore, the methods and means of its use in Fallujah violated the laws of war.

I. INTRODUCTION

"If we fight a war and win it with H-bombs, what history will remember is not the ideals we were fighting for but the methods we used to accomplish them."

- Hans A. Bethe

As this quotation by Nobel Prize winner Hans A. Bethe suggests, methods and means of warfare have long-lasting effects on a war's legacy. Although using certain weapons and tactics may achieve some level of military success, their use must be tempered with humanitarian principles. Throughout most of the Iraq war, the media has glossed over the impact and legality of weapons and tactics used by Coalition forces. One issue that deserved wider public discussion is the use of certain controversial weaponry by the US military during the Fallujah assaults of 2004, and in particular the use of white phosphorus. Although a number of news outlets described it as a chemical weapon, little detailed discussion of its legal status was undertaken. This paper aims to examine whether the use of white phosphorus was a violation of international law. Part One will outline the background to the US assault in Fallujah as well as the various allegations of white phosphorus use. Part Two will discuss how the alleged use fits into the legal framework banning chemical weapons use. Part Three will discuss whether the use of white phosphorus could also be considered a breach of the various rules governing...
incendiary weapons use. Regardless of their legality, the use of weapons such as white phosphorus was a flawed strategy that could only further stiffen the resolve of those opposing the Coalition’s presence in Iraq.

II. Background

A. Fallujah City

Lying approximately forty miles west of Baghdad, Fallujah is situated in the heart of what has been coined the “Sunni Triangle,” a triangular shaped area lying to the north and west of Baghdad. The Triangle stretches from Baghdad in the east, to Tikrit in the north, and to Ramadi in the west. Contained within this Triangle are the towns of Samara and Fallujah. As its name suggests, it is inhabited predominantly by Sunni Muslims, the ethnic group of former Iraqi President Saddam Hussein. This area has suffered widespread violence since the 2003 invasion due to high insurgent activity. During 2003 and 2004, it was described as Iraq’s “most volatile region, a hotbed for opposition against the US led occupation,” and a “dangerous ground for US soldiers.”

Fallujah’s lawlessness became evident on March 31, 2004, when four private US military contractors from the security firm Blackwater USA were dragged from their vehicles, their bodies mutilated, set on fire, and hung from a bridge. Within days, beginning on April 4, 2004, Operation Vigilant Resolve was launched, featuring 1200 US Marines, backed by two Iraqi Security Force Battalions. Over the course of a week, this operation swept through a number of cities in the region aiming to quell the violence and regain control, with particular focus placed on ridding Fallujah of the insurgents. With the city sealed and a night-time curfew imposed, the coalition forces met fierce urban resistance, requiring dangerous house-to-house searches. In total, approximately 600 Iraqis were reported dead, and a large number of high value targets were apprehended. By April 9, the United States announced a unilateral suspension of fighting. By the end of April, after intense international pressure to end the siege, an agreement was reached whereby the local population would keep the resistance fighters out of the city. The Fallujah Protection Army, led by former Revolutionary Guard Brigade Commander and

---

2 Tikrit, the home-town of Saddam Hussein, is infamous for being a stronghold of regime die-hards, powerful tribes and senior Baath Party members. See Ann Scott Tyson, Iraq’s Restive ‘Sunni Triangle,’ CHRISTIAN SCI. MONITOR, Sept. 24, 2003, at 1.
3 A Success, at Last, ECONOMIST, Oct. 9, 2004, at 63.
current Iraqi force General Jasim Mohamed Saleh, was established to maintain peace. The force of approximately 1100 would operate independently of the US military. Despite the announcement of a ceasefire in May, skirmishes continued for the following months.

In October 2004, the violence in Fallujah re-escalated, and it became clear that the city had fallen back into the hands of the insurgency. In response, on November 8, 2004, Operation al-Fajr ("Dawn" in Arabic) was executed. This involved a force of 10,000 to 12,000 US Marines, supported by Iraqi troops, with the United States and the Iraqi Interim Government authorizing the assault. Iraqi Prime Minister Allawi gave his authorization largely as a result of the failed negotiations between the Government and the Fallujah representatives to eject the foreign fighters suspected in the city. One such insurgent believed to be present was Abu Musab al-Zarqawi, the infamous leader of Al-Qaeda in Iraq. In the lead-up to the assault, the US forces encircled the city and warned the Fallujah residents of the impending attack, strongly urging them to leave. US officials believe that of the 300,000 citizens, 70 to 90 percent fled, seeking refuge in neighbouring towns, with a force of 2000 to 3000 insurgents remaining behind. US General George Casey later acknowledged that al-Zarqawi fled by November 9th. In the first stage of the assault, the Marines took control of strategic bridges and a hospital on the western side of the town. By November 15th, the town was largely under US control except for the southern Shuhada District, in which fierce fighting remained. Upon securing a part of the city, the US military turned it over to Iraqi forces. During the assault, important discoveries were made, such as large arms caches and heavily fortified underground bunkers connected through a network of tunnels. During the assault, which lasted until late January 2005, the US forces suffered 71 fatalities and 275 injuries. Between 1200 and 1600 insurgents were reported killed, as well as 2000 civilians. It was during this campaign that the allegations of white phosphorus use by Coalition forces emerged.

B. Allegations

The following is a summary of the various accounts regarding white phosphorus use by US Marines.

The first report regarding Operation Vigilant Resolve of April 2004 was written by embedded journalist Darrin Mortenson and published on April 10, 2004. He wrote, "Bogert is a mortar team leader who directed his men to fire round after round of high

---

10 Id.
11 Originally known as 'Operation Phantom Fury'.
12 Approximately 2000 Iraqi troops were expected, however US General George Casey acknowledged that an unknown number did not show up. See GlobalSecurity.org, Operation al-Fajr (Dawn)/Operation Phantom Fury [Fallujah], http://www.globalsecurity.org/military/ops/oif-phantom-fury-fallujah.htm.
14 GlobalSecurity.org, supra note 12.
15 Id.
17 GlobalSecurity.org, supra note 12.
18 ABC News Online, supra note 16.
explosives and white phosphorus charges into the city Friday and Saturday, never knowing what the targets were or what damage the resulting explosions caused."\(^9\)

Under a sub-heading entitled “Shake ‘n’ bake” he continued:

‘Gun up!’ Milikin yelled when they finished a few seconds later, grabbing a white phosphorus round from a nearby ammo can and holding it over the tube.

‘Fire!’ Bogert yelled, as Milikin dropped it.

The boom kicked dust around the put as they ran through the drill again and again, sending a mixture of burning white phosphorus and high explosives they call ‘shake ‘n’ bake’ into a cluster of buildings where insurgents have been spotted all week.

They say they have never seen what they’ve hit, nor did they talk about it as they dusted off their breakfast and continued their hilarious routine of personal insults and name-calling.\(^20\)

In an email correspondence with The Independent, the same reporter confirmed, “[d]uring the fight I was describing in my article, WP mortar rounds were used to create a fire in a palm grove and a cluster of concrete buildings that were used as cover by Iraqi snipers and teams that fired heavy machine guns at US choppers.\(^21\)

A further account of the Fallujah assault is detailed in a March-April 2005 issue of the journal, Field Artillery. This report, written not by journalists but by three US artillerymen, discusses their view of the operation from a tactical perspective. The following passages are under the subheading “Munitions”:

WP proved to be an effective and versatile munition. We used it for screening missions at two breeches and, later in the fight, as a potent psychological weapon against the insurgents in trench lines and spider holes when we could not get effects on them with [high explosive rounds]. We fired ‘shake and bake’ missions at the insurgents, using WP to flush them out and [high explosive rounds] to take them out….

...

We could have used [hexachloroethane zinc smoke (HC) and precision-guided munitions]. We used improved WP for screening missions when HC


\(^20\) Id.

smoke would have been more effective and saved our WP for lethal missions.\textsuperscript{22}

On November 10, 2004, \textit{The Washington Post} reported: “Some artillery guns fired white phosphorous rounds that create a screen of fire that cannot be extinguished with water. Insurgents reported being attacked with a substance that melted their skin, a reaction consistent with white phosphorous burns.”\textsuperscript{23} In the same report, a physician at a regional hospital is quoted as saying the corpses of the insurgents “were burned and some corpses were melted.”\textsuperscript{24}

On November 8, 2005, the Italian state television network, RAI, aired the documentary \textit{Fallujah: The Hidden Massacre}, by Sigfrido Ranucci, which documented the use of white phosphorus during the November 2004 Fallujah assault. In the documentary, Mohammad Tareq, a human rights campaigner, reported that many victims suffered serious burns. He claimed that the clothes of some of the victims appeared to be intact even though their bodies were badly burned. The documentary alleges that civilians, including women and children, had been killed through white phosphorus attacks and includes images of these bodies. Critics of this film claim that such reports are inconsistent with the actual effects of white phosphorus use, as it would have also burned the victims’ clothes.\textsuperscript{25} The bodies from the RAI film could also have had such an appearance from exposure to the elements.\textsuperscript{26} As such, the evidence provided by the documentary was not entirely convincing, and consequently will not be heavily weighted in the analysis below.

In the RAI documentary, a former US Marine who fought in Fallujah during November 2004 commented about white phosphorus use:

I heard the order to pay attention because they were going to use white phosphorus on Fallujah. In military jargon it’s known as “Willy Pete” …. Phosphorus burns bodies, in fact it melts the flesh all the way down to the bone …. I saw the burned bodies of women and children.\textsuperscript{27}

An unembedded Iraqi journalist, Dahr Jamail, who had been collecting testimony from Fallujah’s refugees, spoke to a doctor who remained in the city to help people and who encountered numerous reports of civilians suffering unusual burns.\textsuperscript{28} The doctor said he “treated people who had their skin melted.”\textsuperscript{29} A resident also told Jamail that the United States had used “weird bombs that put up smoke like a mushroom cloud” and that

\begin{itemize}
  \item \textsuperscript{22} James T. Cobb, Christopher A. LaCour & William H. Hight, \textit{TF 2-2 in FSE AAR: Indirect Fires in the Battle of Fallujah}, FIELD ARTILLERY, March-April, 2005, at 23.
  \item \textsuperscript{23} Jackie Spinner, Karl Vick & Omar Fekesi, \textit{US Forces Battle into Heart of Fallujah}, WASH. POST, Nov. 10, 2004, at A01.
  \item \textsuperscript{24} Id.
  \item \textsuperscript{25} Buoncombe & Hughes, supra note 21.
  \item \textsuperscript{26} Id.
  \item \textsuperscript{27} \textit{Fallujah: The Hidden Massacre} (RAI network broadcast Nov. 8, 2005) (Italy) available at http://www.rainews24.rai.it/ran24/inchiiesta/video/fallujah_ING.wmv.
  \item \textsuperscript{28} Buoncombe & Hughes, supra note 21.
  \item \textsuperscript{29} Id.
\end{itemize}
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."30

The response by the US government changed as the story gathered media
momentum. The Wall Street Journal quoted Lieutenant General Walter Buchanan III,
commander of the US Central Command Air Forces, as saying that white phosphorus "is
purely used as a marking round, not a weapon."31 The US Embassy in Rome issued
similar statements which said, "to maintain that US forces have been using [white
phosphorus] against human targets...is simply mistaken."32 In addition, the US
Ambassador in London, Robert Tuttle, wrote to The Independent claiming that white
phosphorus was only used as an obscurant or else for marking targets.33 He further
stated, "US forces participating in Operation Iraqi Freedom continue to use appropriate,
lawful and conventional weapons against legitimate targets. US forces do not use napalm
or phosphorus as weapons."34 The US State Department's Counter Misinformation
Office provided a similar position, stating that the use of phosphorus shells is not
outlawed and that "US forces have used them very sparingly in Fallujah, for illuminating
purposes. They were fired into the air to illuminate enemy positions at night, not at
enemy fighters."35

The United States revised its official position, however, on November 10, 2005,
with an acknowledgement that it had previously been incorrect. It stated:

White Phosphorus shells, which produce smoke, were used in Fallujah not
for illuminating but for screening purposes, i.e., obscuring troop movements
and according to an article, 'The Fight for Fallujah,' in the March-April
2005 issue of Field Artillery magazine, "as a potent psychological weapon
against the insurgents in trench lines and spider holes ..." The article states
that U.S. forces used white phosphorus rounds to flush out enemy fighters
so that they could then be killed with high explosive rounds.36

On November 15, 2005, US Department of Defense Spokesperson Lieutenant-
Colonel Barry Venable confirmed to the BBC Radio 4PM program that white phosphorus
had indeed been used in Fallujah, however he denied that it was a chemical weapon.37
Lieutenant-Colonel Venable acknowledged that US forces could use white phosphorus in
order to flush out enemy troops from covered positions, saying, "[w]e use them primarily
as obscurants, for smokescreens or target marking in some cases. However it is an
incendiary weapon and may be used against enemy combatants."38

30 Id.
31 Darrin Mortenson, Official Waffling on White Phosphorus Fuels Debate Abroad, N. COUNTY TIMES
32 Buncombe & Hughes, supra note 21
33 Id.
34 Id.
35 US Department of State, Did the U.S. Use "Illegal" Weapons in Fallujah? (updated Nov. 10, 2005),
available at http://usinfo.state.gov/media/Archive_Index/Illegal_Weapons_in_Fallujah.html.
36 Id.
37 US Used White Phosphorus in Fallujah, BBC NEWS, Nov. 16, 2006, available at
38 US Forces Used 'Chemical Weapon' in Iraq, THE INDEP. (U.K. Online Edition), Nov. 16, 2005,
available at http://news.independent.co.uk/world/americas/article327379.ece.
In response to the question of whether white phosphorus was used as an offensive weapon during the Fallujah assault, he confirmed, "[y]es, it was used as an incendiary weapon against enemy combatants."\textsuperscript{39} He continued:

When you have enemy forces that are in covered positions that your high explosive artillery rounds are not having an impact on and you wish to get them out of those positions, one technique is to fire a white phosphorus round into the position because the combined effects of the fire and smoke—and in some case the terror brought about the explosion on the ground—will drive them out of the holes so that you can kill them with high explosives.\textsuperscript{40}

In a report published November 22, 2005 in the \textit{North County Times}, Colonel Dave Lapan, top spokesman for the US Marine force in Iraq, maintained that white phosphorus bombs could be unleashed on insurgents. In an email to reporter Darrin Mortenson, he wrote, "[i]t is a conventional weapon used as an obscurant, for marking and illumination, and may be used against enemy forces."\textsuperscript{41} He continued, "[a]s with any weapon in our inventory, we consider the target vulnerability and location, available munitions, risk to the civilian population, and risk to friendly forces in determining how a target will be attacked."\textsuperscript{42}

For the purposes of this article, the allegations above will be assumed as facts. The following is a summary of assumptions upon which the legal analysis presented below will be based:

- White phosphorus was used during the Fallujah assaults of 2004;
- White phosphorus was fired at suspected insurgent positions in order to flush them out and kill them with high explosives;
- The marines were often not aware of who their targets were, or what damage was being caused;
- Although non-combatants were not intentionally targeted, the difficulty in distinguishing them from the combatant insurgents in the urban setting and from controlling the indiscriminate effects of white phosphorus meant the non-combatants suffered the effects of the attacks.

\textit{C. The Chemistry and Utility of White Phosphorus}

White Phosphorus is a white (or yellow) solid with a garlic-like odor. It burns very easily, catching fire at temperatures 10-15 degrees (°F) above room temperature. It reacts very easily with oxygen, and as a result, is normally stored in water. The substance does not occur naturally.\textsuperscript{43}

\textsuperscript{39} Id.
\textsuperscript{40} Id.
\textsuperscript{41} Mortenson, \textit{supra} note 31.
\textsuperscript{42} Id.
White phosphorus has a number of uses, including as a component in fertilizers, food additives, cleaning compounds, and historically, in rat and roach poisons as well as fireworks. Its most infamous use was in the manufacture of matches, which was discontinued due to the severe side effects experienced by workers involved in the manufacturing process.

The most useful military application for white phosphorus has been as a smoke screen. When fired, either from mortar, artillery or grenade, it burns to produce a dense white smoke. It has proven extremely useful as a screening agent to obscure troop movements.

The US Environmental Protection Agency (EPA) describes white phosphorus as "extremely toxic to humans." There are two ways in which white phosphorus can impact human health: through particles and smoke. These will be discussed below.

As mentioned above, white phosphorus burns very easily. It is described as a phyophobic material in that it is spontaneously flammable. Upon exposure to air, it oxidizes to form phosphorus pentoxide. During this process, immense heat is released in the form of a bright flame with dense white smoke. This process continues until all phosphorus has oxidized or until it has been deprived of oxygen. When the burning particles come into contact with exposed skin it can cause serious second and third degree burns. It has rapid dermal penetration and results in deep and painful burns. Once the particle is under the skin, it will burn until it is used up or deprived of oxygen. As such, it can potentially burn right to the bone. Water may temporarily stop the burning, but once the water has dried, and the white phosphorus particle again has access to oxygen, it will reignite. Aside from death or serious burns, the victim of a white phosphorus burn may also develop heart, liver and kidney damage as a result. Inhalation of the white phosphorus particles in the smoke can also cause serious damage to the lungs and throat.

White phosphorus smoke also possesses physiological effects on the human body. White phosphorus smoke is composed of particles of phosphorus pentoxide, which reacts with moisture in the air or body to form phosphoric acid. This acid, depending on its concentration and the duration of exposure, may produce a variety of topically irritative injuries to the victim. Few studies have been conducted regarding the effects of inhalation of white phosphorus smoke on human health. One study, by White and Armstrong, took place in 1935 with a series of tests on human volunteers. Male subjects were exposed to white phosphorus smoke at various concentrations. At the lowest concentration (phosphorus pentoxide at $188\text{mg/m}^3$) a five-minute exposure resulted in half of the subjects reporting respiratory distress, coughing, congestion and throat irritation. At a higher concentration (phosphorus pentoxide at $514\text{mg/m}^3$) a

---

46 ATSDR, *supra* note 43.
47 Id.
48 Id.
51 Id.

https://scholarship.law.upenn.edu/jlasc/vol10/iss1/2
fifteen-minute exposure resulted in all subjects reporting tightness of chest, coughing, nose irritation, and difficulty speaking. In a further study, human volunteers were exposed to phosphorous pentoxide for 3.5 minutes at a concentration of $592 \text{mg/m}^3$, resulting in similar respiratory irritation, tightness of chest, coughing and difficulty breathing. Following this experiment, the subjects refused to be exposed to a higher concentration and thought it would be impossible, without more serious effects, to perform any physical exercise or labor at that concentration. In one such experiment one of the subjects developed acute bronchitis. Importantly, all these effects were reversible once the subject had left the exposure site.

In summary, white phosphorus is a volatile chemical which can cause serious burns to victims. Under this usage, it could be potentially considered as an incendiary weapon. When oxidized, it causes irritation to the respiratory system and mucus membranes. Under this usage, it could potentially be used as a chemical weapon. The following is an analysis of the legal regime governing such uses.

III. CHEMICAL WEAPONS

One of the principle allegations against white phosphorus use in Fallujah is that it amounted to the use of a chemical weapon, thereby violating international treaty and customary law. In order to ascertain the law, Article 38(1) of the Statute of the International Court of Justice provides the sources which may be relied upon: international conventions, international custom, general principles of law, judicial decisions and the teachings of the most highly qualified publicists. In light of this provision, the following is an analysis of the law governing chemical weapon use and its application to the Fallujah assault.

A. Prohibition of Chemical Weapons Use

International treaty and customary law clearly prohibit the use of chemical weapons.

1. Treaty Law

The euphoria following the Cold War, coupled with the international condemnation of the use of chemical weapons by Iraq in the Iran-Iraq War and in Kurdistan, created fertile ground for the development of a comprehensive chemical weapons treaty. In 1993, the Convention on the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (also known as “Chemical Weapons Convention” or “CWC”) was concluded. It opened for signature on January 13, 1993, and entered into force on April 29, 1997, currently boasting 178 state parties, including the United States, Russia, Iran, India, and Pakistan.

---

52 Id.
53 Id.
54 Id.
55 Id.
56 1945 Statute of the International Court of Justice, art. 38(1).
The CWC has a much broader scope of application than any previous regime. Under Article I, each state party undertakes "never under any circumstances ... to use chemical weapons,"57 or "[t]o develop, produce, otherwise acquire, stockpile or retain chemical weapons, or transfer, directly or indirectly, chemical weapons to anyone."58 Likewise, a state may not "engage in any military preparations to use chemical weapons,"59 or "assist, encourage or induce, in any way, anyone to engage in any activity prohibited to a State Party under this Convention."60 States are also required to destroy their current (and abandoned) chemical weapon stockpiles, and any current or former production facilities.61 The phrase "never under any circumstances" emphasizes the comprehensive and totally binding character of the prohibitions.62 Geographically, the prohibitions possess a universal character, applying to the activities of state parties everywhere.63 The wording is such that it covers international and non-international armed conflicts, regardless of whether the parties recognize each other.64 Furthermore, state parties are required to adopt penal legislation to enforce the convention and extend that legislation extraterritorially to all persons holding their nationality.65 Reservations to the articles of this treaty are not permitted.66

2. Customary International Law

Although early attempts to prohibit the use of chemical weapons date back to 1865, when an agreement between the French and German armies was recorded as stating that "no side should use poisoned bullets,"67 no multilateral approach was subsequently undertaken until the Hague Peace Conferences of 1899 and 1907. The 1899 Conference included an adopted declaration prohibiting "the use of projectiles the sole object of which is the diffusion of asphyxiating or deleterious gases."68 In addition, both the 1899 and 1907 Conferences included prohibitions on the use of "poison or poisoned weapons."69 Unfortunately, these provisions proved unsuccessful, as in 1915, during the First World War battle of Ypres, the German military unleashed a chemical attack against

58 Id. at art. 1(1)(a).
59 Id. at art. 1(1)(c).
60 Id. at art. 1(1)(d).
61 Id. at art. 1(2)-(4).
63 Id. at 13.
64 Id. at 13.
65 Chemical Weapons Convention, art. VII(1)(c).
66 Chemical Weapons Convention, art. XXII.
the French forces. This led the English, French and Americans to retaliate in kind. During the First World War, 1.3 million casualties were caused by such chemical attacks.

The Treaty of Versailles provided further prohibitions on the use of chemical weapons. Germany was banned from their possession and use. Their use was also outlawed in the Treaty in Relation to the Use of Submarines and Noxious Gases in Warfare 1922 (the latter of which never entered into force).

It was not until the Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare (hereinafter ‘Geneva Protocol’) opened for signature in 1925 that a relatively broader ban was implemented. The Geneva Protocol outlawed “the use in war of asphyxiating, poisonous or other gases, and of all analogous liquids materials or devices ....”

The Hague Conventions and the Geneva Protocol had a number of serious limitations. Firstly, both were merely prohibiting the use of chemical weapons, and providing no safeguards against their possession, development, transfer, or stockpile. Secondly, the ban on use only applied as between State Parties to the instruments, and had no effect on the use of the weapons against a non-state party. Furthermore, the Hague Convention applied only during war. Thirdly, a large number of states entered reservations to the Geneva Protocol allowing them the right to retaliate in kind if they are attacked with chemical weapons. This rendered the applicability of the Protocol merely a ban on first use. Regardless of limitations, these instruments were a step towards chemical disarmament and formed the basis of the international arms control regime throughout most of the twentieth century.

**B. Legal Framework**

1. What is a Chemical Weapon?

In order to establish what chemicals and activities fall within the prohibitions outlined above, Article II of the CWC provides a set of definitions. The CWC has a unique formulation for identifying chemical weapons. Article II(1)(a) defines a chemical weapon as:

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

---


72 Treaty of Versailles (1919) art. 171.


75 Fidler, supra note 73.

76 Id.

(b) Munitions and devices, specifically designed to cause death or other harm through the toxic properties of those toxic chemicals specified in subparagraph (a), which would be released as a result of employment of such munitions and devices;
(c) Any equipment specifically designed for use directly in connection with the employment of munitions and devices specified in subparagraph (b).\textsuperscript{78}

The above are considered chemical weapons, together or separately. Although a list of toxic chemicals and precursors considered to be of particular danger are provided in three schedules annexed to the Convention, these are included not to further define chemical weapons, but to serve as the list of chemicals subject to declaration, inspection and verification under the Convention. The definition is based on two central questions: first, is it a toxic chemical or precursor, and second, what is the intent of use? In assessing whether a substance is a chemical weapon, the definition must be read together with the definition of toxic chemicals, precursors, and purposes not prohibited.

2. What is a Toxic Chemical?

Toxic chemicals are defined in Article II(2) as:

Any chemical which through its chemical action on life processes can cause death, temporary incapacitation or permanent harm to humans or animals. This includes all such chemicals regardless of their origin or of their method of production, regardless of whether they are produced in facilities, in munitions or elsewhere.\textsuperscript{79}

In order to fall within this definition, the chemical must, as a result of its chemical action on life processes, cause death, temporary incapacitation or permanent harm to humans or animals.\textsuperscript{80} This highlights two important issues. First, utilization of the chemical must be accompanied by an intent to exploit its toxic properties, which manifest themselves through the chemical action on life processes. As a result, other toxic or harmful chemicals, such as dynamite, incendiaries, smoke mixtures, missile fuel and so forth, the toxic properties of which are not being exploited and the toxic side-effects of which are incidental to the intended use of the substance, would not be considered chemical weapons. For example, if death, temporary incapacitation or permanent harm arose out of exposure to missile fuel, and the exposure was not the result of an intent to utilize the toxic properties of the fuel, it would not be considered a chemical weapon. However, if the fuel were sprayed upon the victims with the intent to exploit its toxic properties, it would be considered a chemical weapon. The terms “temporary incapacitation” and “permanent harm” are not further defined in the Convention.

\textsuperscript{78} Chemical Weapons Convention, art. II(1).
\textsuperscript{79} Id. at art. II(2).
\textsuperscript{80} The Chemical Weapons Convention Preamble indicates that herbicides are covered elsewhere in international law.
The second issue this paragraph raises is that toxicity is not dependent upon lethality. The toxic effect can also fall within a lower standard of causing temporary incapacitation or permanent harm. This is echoed in Article I(1)(b), which refers to munitions and devices causing "death or other harm."\(^{81}\) Therefore, lethality is not a requirement for inclusion within the terms of this definition.

3. What are Precursors?

The CWC defines precursors in Article II(1)(c) as "[a]ny chemical reactant which takes part at any stage in the production by whatever method of a toxic chemical. This includes any key component of a binary or multicomponent chemical system."

Taking the plain and ordinary meaning of these words creates a potentially broad definition. The phrases "at any stage in the production" and "by whatever method" allow this to apply to a very wide variety of chemical reactants. It would seemingly include, for example, an agent that reacts with chemicals in the air or body to form a lethal chemical agent. As Ralf Trapp and Walter Krutzsch write, since this is an entirely open-ended definition, it should be read in conjunction with the general purpose criterion in Article II(1)(a), thereby requiring the intent criteria to be the ultimate determining factor.\(^{82}\) If the intent criterion is satisfied, the use of a precursor would amount to the use of a chemical weapon.

4. Lawful Use – "Purposes not Prohibited"

The CWC was not designed to stifle international trade or the technological development of the chemical industry.\(^{83}\) As many chemicals have dual uses, the Convention’s drafters understood that legitimate purposes should not be hindered. Therefore, they specified the permitted uses of toxic chemicals and precursors. These "purposes not prohibited" are defined in Article II(9) as:

(a) Industrial, agricultural, research, medical, pharmaceutical or other peaceful purposes;
(b) Protective purposes, namely those purposes directly related to protection against toxic chemicals and to protection against chemical weapons;
(c) Military purposes not connected with the use of chemical weapons and not dependent on the use of the toxic properties of chemicals as a method of warfare;
(d) Law enforcement including domestic riot control purposes.\(^{84}\)

\(^{81}\) Chemical Weapons Convention, art. I(1)(b)
\(^{82}\) Krutzsch and Trapp, supra note 62 at 26.
\(^{84}\) Chemical Weapons Convention, art. II(9).
Of particular importance to the present discussion are paragraphs (c) and (d). These relate to the legitimate use of a toxic chemical by military or law enforcement personnel. Paragraph (d) will be discussed in the “riot control agent section” below. Paragraph (c) creates an exception, similar to the missile fuel example outlined above, by which a toxic chemical may be utilized for military purposes so long as such use is not dependent on the toxic properties of the chemical as a method of warfare. Therefore, this paragraph relies on the intent of the chemical’s application.

5. Summary

The above definitions and criteria were carefully negotiated. Read together, no loopholes exist in the convention’s ban on chemical weapons. The definition of a chemical weapon is purpose driven: all toxic chemicals and their precursors qualify as chemical weapons, unless the chemical’s intended purpose is not prohibited and the type and quantity used are consistent with that purpose.

C. Application to Fallujah

During the debates surrounding the use of white phosphorus in Fallujah, one of the central accusations against US forces was that the use was a violation of the prohibition against the use of chemical weapons. This is a strong argument. Although poorly advocated in the news media, the use of white phosphorus by US forces was a violation of the prohibition against the use of chemical weapons. As outlined above, chemical weapons can be either toxic chemicals or precursors. The following questions determine whether a chemical falls within these two categories:

1) Is it a toxic chemical or precursor?
2) Was it used for purposes prohibited by the CWC? and if so
3) Were the types and quantities consistent with such use? and
4) Was the chemical used to exploit its toxic properties?

If the final answer to these questions is “yes,” then white phosphorus was used as a chemical weapon and the prohibition against chemical weapons use was violated.

Before undertaking any further analysis, it should be noted that Article 31(1) of the Vienna Convention of the Law of Treaties states that a treaty “shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose.”85 With this in mind, the first question is, was white phosphorus a toxic chemical? As discussed above,86 toxic chemicals’ effect on life processes cause death, temporary incapacitation or other permanent harm. Pertaining to the chemical nature of white phosphorus and its reaction in the human body, it does not appear to meet these requirements. Instead, the physiological effect of white phosphorous when it comes into contact with the skin is closer to that of an incendiary weapon. Specifically, it burns the skin through the generation of high levels of heat, rather than as part of a chemical reaction. The evidence

86 See supra sect. II(C).
from the Fallujah assault supports this. Many victims of the Fallujah assault complained of suffering strange burns that could not be extinguished with water. As such, it is unlikely that white phosphorus would be considered a toxic chemical and, therefore, cannot be considered a chemical weapon.

Alternatively, it is plausible that white phosphorus smoke could be a precursor as defined by the CWC. As discussed above, the CWC’s definition of a precursor is broad: any chemical reactant that takes part in any stage of the production of a toxic chemical. Here, when the mortar shells containing white phosphorous were detonated the burning phosphorus released a dense white smoke, containing phosphorus pentoxide and phosphoric acid, which irritated the body. Thus, white phosphorus served as a precursor in this process. By itself it could not be a chemical weapon because its effect is felt through heat and burns. However, when white phosphorous reacts with oxygen and water, whether in the air or in the body, the chemical reaction becomes complete and is devastating. Yet, as defined in Article II(2) of the CWC’s definition, classification as a “precursor” requires one further element: that the final chemical product be toxic. Furthermore, this toxic chemical must cause death, temporary incapacitation or permanent harm to humans through its chemical action on life processes. These three requirements are read disjunctively. Although death is possible if one is exposed to an overwhelming amount of phosphoric acid, temporary incapacitation is the most typical result. Interpreted broadly, this could mean that because the insurgents were unable to maintain their positions, fight effectively, and operate as they normally would they were temporarily incapacitated. However, a narrower reading would require a loss of consciousness, such as was present when an unknown chemical agent was used by Russian forces during the November 2002 Moscow theater hostage siege. It is not clear which interpretation should be used. There is no agreed upon definition of temporary incapacitation stemming from the CWC. However, when one considers the CWC’s Preamble, which states that it is determined for the sake of all mankind to exclude completely the possibility of the use of chemical weapons, and when one upholds the VCLT’s Article 31(1), the best interpretation is likely to fall closer to a broader reading. Under such a reading, it is easy to conclude that the effect white phosphorus smoke has on its victims is one of temporary incapacitation. This brings white phosphorous within the CWC’s definition of a chemical weapon.

In addition, the use of white phosphorous by US forces does not fall within any of the exceptions of the CWC’s “purposes not prohibited.” Article II(9)(c) does not apply because this was not a use “not dependent on the use of the toxic properties of chemicals as a method of warfare.” The bombs deployed by US forces were not used in this

---

87 Buncombe & Hughes, supra note 21
89 See id.
90 See id.
91 See id.
93 The Chemical Weapons Convention, art. II(9).
94 See id.
instance as a smoke screen. Instead, they were clearly dependent upon the toxic properties of white phosphorus as a precursor.

The final element that must be proved is the intent of the commander ordering the use of white phosphorus. Was it used to take advantage of its toxic properties? Following the assumptions above, white phosphorus was used here in order to flush the insurgents from their protected spaces, so that highly flammable explosive rounds could be fired as they fled the building. Thus, white phosphorus was used as a precursor chemical reactant, with the intent of exploiting the toxic properties of the phosphoric acid it produced.

My conclusion is that due to the method of use and intent for which white phosphorus was deployed, it served as a precursor that was not being used for "purposes not prohibited." Thus, it was a chemical weapon, the use of which is strictly prohibited under any circumstances by the CWC. Therefore, the United States breached its obligations under the CWC.

IV. RIOT CONTROL AGENTS

Another CWC prohibition potentially violated by the use of white phosphorus in Fallujah was the use of a riot control agent (RCA) in warfare. Prior to the adoption of the CWC, international law was somewhat ambiguous regarding whether or not RCAs were chemical weapons. This was largely because the Geneva Protocol did not directly address the issue. During the Vietnam War, US forces came under heavy criticism for their use of tear gas as a method of warfare. Tear gas was primarily used to demobilize and disorientate the enemy and was often followed with heavy rounds of lethal conventional munitions. There were also allegations that the North Vietnamese committed similar acts.

A. General Purpose Criterion

The CWC is the first treaty to deal specifically with the issue of RCAs. Article I(5) states that "[e]ach State Party undertakes not to use riot control agents as a method of warfare."\(^{95}\) RCAs are defined in Article II(7) as "[a]ny chemical not listed in a Schedule, which can produce rapidly in humans sensory irritation or disabling physical effects which disappear within a short time following termination of exposure."\(^{96}\) There is some disagreement between the position of the United States and that of the rest of the world regarding what acts this prohibition encompasses. The US belief is that the prohibitions regarding RCA use should couple Article I(5) with the corresponding definition in Article II(7). Therefore, the United States argues that the prohibition against RCA use as a method of warfare is the only constraint. If this interpretation were correct it would permit a state to develop, produce, retain and transfer RCAs in any form and in any quantity, so long as it did not actually use them as a method of warfare.\(^{97}\)

\(^{95}\) Id.

\(^{96}\) Id.

\(^{97}\) Abram Chayes, Matthew Meselson and R. Justin Smith, Proposed Guidelines on the Status of Riot Control Agents and Other Toxic Chemicals under the Chemical Weapons Convention, Background Document, 19th Workshop of the Pugwash Study Group on the Implementation of the Chemical and...
against the purposes and principles of the CWC and would allow a large class of toxic chemicals to evade the Convention’s control mechanisms. It would also create a system replicating what already existed under the Geneva Protocol, in which only use was prohibited and not the development, production, retention, and transfer of certain agents.

Most state parties to the CWC, however, agree that it contains further restrictions and that the general purpose criterion applies to RCAs. These countries argue that by definition, a RCA is a toxic chemical, because the CWC defines a toxic chemical as “[a]ny chemical which through its chemical action on life processes can cause death, temporary incapacitation or permanent harm to humans or animals.” Comparing this definition to the definition of a RCA, it is clear that a RCA must cause “sensory irritation or disabling physical effects.” All chemicals that cause such irritation or disabling physical effects would naturally cause temporary incapacitation. Thus, RCAs, by definition, should be viewed as a subset of toxic chemicals. Consequently, RCAs fall under the restrictions of the general purpose criterion defined in Article II(1). The general purpose criterion played a central role in the CWC and it would be surprising for some toxic chemicals to be covered and for some to be excluded. The implications of this are that RCAs may only be used in a situation which is not a method of warfare, which complies with the purposes not prohibited under Article II(9) and so long as the types and quantities were consistent with such purposes.

Of the two positions outlined above, the history of the CWC, its purposes and objectives, its text and general state practice all lend support to the second and more restrictive argument. An often quoted example applying the above reasoning involves the following situation: imagine a stockpile of howitzer shells loaded with a toxic chemical that meets the RCA requirements of Article II(7). This RCA, because it temporarily incapacitates its victims, is a toxic chemical under Article II(2) and thereby falls within the general purpose criterion requirements. At this point, two issues in this scenario need to be addressed. First, it is not clear if its use was intended for purposes not prohibited under Article II(9). Second, it is not clear if the types and quantities are consistent with such purposes. With this in mind, the only two purposes in Article II(9) that could possibly apply to this example are sub-paragraphs (c) and (d). Upon closer inspection, it is evident that sub-paragraph (c) (which requires that “the agent is used for military purposes not connected with the use of chemical weapons and not dependent on the use of the toxic properties of chemicals as a method of warfare”) would not apply because the inferred intent of loading and using howitzer shells with a RCA does not necessarily involve anything other than the exploitation of the agent’s toxic properties as a method of warfare. Similarly, sub-paragraph (d) is inapplicable because there is no plausible argument for why howitzer shells were used for law enforcement including

---


98 *Id.* at 2.

99 *See* Chemical Weapons Convention.

100 *See* id.

101 *See* Chayes, Meselson & Smith, *supra* note 97 at 2.

102 *See* id.

103 "See" id.

104 *The* purposes not prohibited *sub-*paragraphs relevant to the present discussion are (9)(c) and (d).

105 *See* Chayes, Meselson & Smith, *supra* note 97.
domestic riot control purposes. Even if the example were to fall within one of these non-prohibited purposes, the types and quantities used would still be inconsistent with the permitted use in either of these sub-paragraphs. Therefore, the shells and the agent would be considered chemical weapons. Any use of them would result in a violation of the CWC prohibition on the use of chemical weapons.

In sum, the requirements that must be satisfied to establish whether a RCA is considered a chemical weapon are: 1) Was the chemical use considered a RCA under the CWC? 2) Was the RCA used as a method of warfare? 3) Did the use fall under one of the purposes not prohibited in Article II(9)? 4) Were the types and quantities consistent with such purposes?

The first requirement has already been defined above. I will now apply the second and third points to the use of white phosphorus in Fallujah.

B. Method of Warfare

Article I(5) of the CWC requires that RCAs not be used as a method of warfare.\(^{106}\) This was a highly contentious section to negotiate because no definition of “method of warfare” could be agreed upon and none is universally accepted or readily identifiable from other sources.\(^{107}\) The final text of the CWC represents a compromise between the two primary opposing positions, with the United States on one side and the United Kingdom (supported by most negotiating states) on the other.

1. US Position

Before the CWC, there was no consensus as to the legality of RCA use as a method of warfare. The 1925 Geneva Gas Protocol did not address the issue directly. Most states believed that the Protocol prohibited RCA use through its prohibition against the use of all asphyxiating and poisonous gases and analogous materials.\(^{108}\) The United States offered an extreme position by consistently arguing that the prohibition did not apply to agents with temporary effects.\(^{109}\) However, this view did not receive widespread international support,\(^{110}\) or unanimous approval within the US government.\(^{111}\) In order to receive Senate ratification of the Protocol, President Gerald Ford was forced into a compromise position. His administration agreed to Executive Order 11850 (EO 11850), permitting some restricted uses of RCAs.\(^{112}\) The relevant section states:

The United States renounces, as a matter of national policy...first use of riot control agents in war except in defensive military modes to save lives such as:

\(^{106}\) See Chemical Weapons Convention.


\(^{108}\) Id.

\(^{109}\) Id.


\(^{111}\) Harper, supra note 107 at 135.

(a) Use of riot control agents in riot control situations in areas under direct and distinct U.S. military control, to include controlling rioting prisoners of war.

(b) Use of riot control agents in situations in which civilians are used to mask or screen attacks and civilian casualties can be reduced or avoided.

(c) Use of riot control agents in rescue missions in remotely isolated areas, of downed aircrews and passengers, and escaping prisoners.

(d) Use of riot control agents in rear echelon areas outside the zone of immediate combat to protect convoys from civil disturbances, terrorists and paramilitary organizations.\textsuperscript{113}

During the CWC negotiations the United States argued that chemical weapons should be defined so as to omit, and therefore exclude RCAs.\textsuperscript{114} The United States also argued that RCAs may be used in numerous types of military-related activities conducted outside armed conflicts and can be used defensively to save lives, as authorized by Executive Order 11850.\textsuperscript{115} This was an attempt by US negotiators to ensure that their military commanders were able to retain as many tactical battlefield options as possible, so that they would not be limited by what they perceived as unduly restrictive regulations.

\section*{2. UK and Other States' Positions}

The positions of the other negotiating states differed from that of the United States. The United Kingdom and Australia led the charge for prohibiting all use of RCAs in hostilities.\textsuperscript{116} They feared that “an interpretation of the CWC that would allow use of non-lethal agents in war might create a dangerous loophole in the Convention.”\textsuperscript{117}

\section*{3. Compromise}

These two opposing positions were not easily reconciled. What brought the different parties together was a final compromise by German Ambassador Adolf von Wagner, who was the chairman of the Conference on Disarmament working group during the final CWC negotiations. The wording ultimately accepted in the CWC made a distinction between use during hostilities as a

\textsuperscript{113} Id.


\textsuperscript{116} See Harper, supra note 107 at 136; See also Jean Marie Henckaerts & Louise Doswald-Beck, 1 CUSTOMARY INT'L HUMANITARIAN L. 264 (2005).

\textsuperscript{117} See Harper, supra note 107 at 136 n.10.
method of warfare and use for purposes of law enforcement.118 The latter use was permitted, while the former was prohibited.119 Ambassador von Wagner described this compromise stating that, "'[t]hese [RCAs] will be banned as a method of warfare, but allowed for normal domestic law enforcement purposes or for non-warfare military purposes, such as rescuing a pilot shot down behind enemy lines, or dealing with a riot in an [sic] prisoner of war camp...."120

As Harper writes, this statement by von Wagner reflects the language of Executive Order 11850 and demonstrates the compromise made with the United States.121 Although this is an important prohibition, it is flawed due to its ambiguity. The compromise allowed excessive room for interpretation. Customary international law provides little assistance in resolving this ambiguity. The International Committee of the Red Cross’ (ICRC) study on customary international humanitarian law recognizes the rule that "the use of riot-control agents as a method of warfare is prohibited."122 The ICRC found that the majority of states agree that this customary prohibition of chemical weapons applies also to agents with temporary effects.123 However, the ICRC considered the United States to have made consistent objections to the formation of this rule. The objections of the United States were evident regarding the Geneva Protocol and the statements it made during the CWC negotiations.124 The US does not accept this customary rule and threatens to use RCAs in defensive military modes to save lives because of their belief that this does not constitute a method of warfare.125

Should such objections to customary international law excuse the United States from the application of this law? According to public international law, a customary norm is formed when there is both state practice and opinio juris (opinion of justice).126 However, if a state, while such a norm is being developed, persistently objects to its formation then it will not be bound by it.127 As the United States has argued, its broader position throughout the development of this norm has consistently been against the use of RCAs as a method of warfare. Thus, in accordance with public international law, it is likely that the United States is only bound by its own interpretation of this norm, rather than that of the majority of the international community.

C. US CWC Ratification

Considering the disagreement regarding the interpretation of “method of warfare,” it is important to fully understand the US position on the use of RCAs in warfare. Within the United States, a significant debate regarding the status of RCAs emerged as

118 See Henckaerts & Doswald-Beck, supra note 116 at 264.
119 See id.
120 UN Press Release, Ambassador von Wagner, Geneva Dateline (Jun. 23, 1992); see also Harper, supra note 107 at 137.
121 See Harper supra note 107 at 137.
122 Henckaerts & Doswald-Beck, supra note 116 at 262.
123 Id. at 264.
124 Id.
125 Id.
126 ANTONIO CASSESE, PUBLIC INTERNATIONAL LAW 156 (Oxford Univ. Press 2005).
ratification of the CWC became a priority. Under President Bill Clinton’s leadership, an interagency review was conducted.128 This review found that the CWC precluded use of RCAs in two situations mentioned in EO 11850, namely, where civilians were used to screen attacks, and, the rescue of downed aircrew. This position was confirmed by the then Chairman of the Joint Chiefs of Staff, General Shalikashvili.129 As a result, in his letter to the US Senate in June 1994, President Clinton proposed a modification of EO 11850, in which he suggested a more restrictive approach than that permitted in the Executive Order. The President stated:

Article I(5) of the CWC prohibits Parties from using RCAs as a “method of warfare.” That phrase is not defined in the CWC. The United States interprets this provision to mean that:

The CWC applies only to the use of RCAs in international or internal armed conflict. Other peacetime uses of RCAs, such as normal peacekeeping operations, law enforcement operations, humanitarian and disaster relief operations, counter-terrorist and hostage rescue operations, and noncombatant rescue operations conducted outside such conflicts are unaffected by the Convention.

The CWC does not apply to all uses of RCAs in time of armed conflict. Use of RCAs solely against noncombatants for law enforcement, riot control or other noncombat purposes would not be considered as a “method of warfare” and therefore would not be prohibited. Accordingly, the CWC does not prohibit the use of RCAs in riot control situations in areas under direct US military control, including against rioting prisoners of war, and to protect convoys from civil disturbances, terrorists and paramilitary organizations in rear areas outside the zone of immediate combat.

The CWC does prohibit the use of RCAs solely against combatants. In addition, according to the current international understanding, the CWC's prohibition on the use of RCAs as a method of warfare also precludes the use of RCAs even for humanitarian purposes in a situation where combatants and noncombatants are intermingled, such as the rescue of downed air crews, passengers and escaping prisoners and situations where civilians are being used to mask or screen an attack. However, were the international understanding of this issue to change, the United States would not consider itself bound by this position.130

As ratification drew near, President Clinton’s approach received opposition in the US Senate. The Senate charge was led by Senator Sam Nunn of Georgia, Chairman of

128 Harper, supra note 107 at 138.
129 Id.
130 Letter of Transmittal, President of the United States, to Senate of the United States, subject: Ratification of the CWC (June 23, 1999); see also Harper, supra note 107 at 138 n.26.
the US Senate Armed Services Committee, arguing that the full range of options contained in EO 11850 must be retained. Ultimately, Senator Nunn’s view prevailed, with the Senate ratifying on the condition that the President agree to a list of 28 conditions. As the CWC does not allow reservations, these conditions are not considered to be reservations, but rather outline the US interpretation of the CWC. The most relevant condition to the present discussion is Condition 26, which stated that RCA use would be permitted in peacetime military operations in which the United States is not a party, or under UN Charter Chapter VI or Chapter VII peacekeeping operations where authorized by the Security Council. The reasoning behind this condition is that in such operations, the United States is not waging war and therefore any use of RCAs would not amount to use as a method of warfare. However, were the United States to be a party in an international or internal armed conflict, use of RCAs would be barred as constituting a method of warfare. A week after these conditions were presented, President Clinton agreed to them, and the CWC was subsequently ratified by the United States on April 27, 1997.

The US military developed its policy on RCA use in light of the restrictions contained in the CWC, as well as the US Senate’s ratification conditions. This policy is embodied in the Chairman of the Joint Chief of Staff Instruction 3110.07A (hereinafter “CJCSI 3110.07A”). This instruction reflects both Condition 26 and EO 11850. The instruction provides two situations in which use of RCAs would be permitted: in wartime, and in peacetime. The use in war copies the four conditions set out in EO 11850, but adds a fifth option, namely the protection and recovery of nuclear weapons. The uses in peacetime reflect the above Condition 26, allowing the use of RCA during peacekeeping operations.

The US position has not received widespread international support. It even stands in contrast to a report commissioned by the North Atlantic Treaty Organization (NATO). In 1997, NATO’s North Atlantic Assembly commissioned Lord Lyell to undertake a report on non-lethal weapons. The draft report of September 1997, entitled “Non-Lethal Weapons” (known as the Lyell Report, excerpts of which were published in Defense News) firmly states that RCAs can only be used in domestic law enforcement and not in foreign peacekeeping missions. Allowing “peaceful” military applications of RCAs presents a slippery slope argument. It is very difficult to define every situation as either a peaceful military application or a method of warfare. The prohibition against use as a method of warfare must be clear-cut in order to prevent abuse and misunderstandings.

In summary, the official position of the United States is that RCAs may not be used as a method of warfare, except in order to save lives as expounded by EO 11850 or in “peaceful” operations as outlined in Condition 26. These exceptions are generally considered to be for limited, life-saving, and defensive purposes. Although they do not amount to a reservation to the CWC, the US government will allow its commanders to act within these parameters without invoking any disciplinary action. This unilateral

---

131 Harper, supra note 107 at 142.
132 Id.
133 Fidler, supra note 73 at 74.
American interpretation has not found wide international acceptance. If US forces actually employed such methods, they could be violating the CWC.

1. Aggravating Factor
   a. RCA in Conjunction with Lethal Force

Would the use of RCAs in conjunction with lethal force be a violation of the prohibition of use as a method of warfare? An example of such use is to employ a RCA to flush the enemies out of their protected position (e.g., a cave, building etc.) in order to engage them with lethal force. Would such use of RCAs as a force multiplier be considered a method of warfare?

During Congressional testimony, Dr. Amy Smithson explained what would clearly constitute a method of warfare:

Distinguishing method of warfare use from a limited, defensive, life saving use of RCAs should be a fairly straightforward matter. The law of war describes a method of warfare as a way to attain military objectives. According to this definition, flushing enemy soldiers from foxholes into the line of fire, or launching an RCA attack on an enemy command post easily qualify as method of warfare uses.\(^{135}\)

There is little disagreement amongst commentators that a RCA attack as a force multiplier would come under the definition of "method of warfare."\(^{136}\) The then US Secretary of Defense, William Perry, in a memorandum entitled "Riot Control Agents and the Chemical Weapons Convention," addressed to the Assistant to the President for National Security Affairs, agreed "that the CWC would prevent some militarily useful applications of RCAs, when they would achieve a military objective, e.g. against troops in caves."\(^{137}\) The use of a RCA in such a manner would constitute a method of warfare and be prohibited.\(^{138}\)

One of the dangers of allowing force multiplier use of a RCA is the fear of escalation. The enemy may not realize that the chemical is "merely" a RCA and could retaliate with a lethal agent. The Chemical Weapons Convention Bulletin rightly summarizes this point:

The question is whether the risk of further escalation does not outweigh such limited military benefit as these uses might bring. Use of disabling chemicals on intermingled combatants and civilians in a war zone, for example, could lead to or become the excuse for unrestricted employment in urban warfare.\(^{139}\)

135 Harper, supra note 107 at 149.
136 id. at 150.
137 id. at 151.
138 id.
2. Mitigating Factors

When weighing whether a specific use of RCAs is a “method of warfare” in violation of the CWC, a number of mitigating factors deserve consideration. Although none of these criteria exist in the CWC itself, nor would excuse the violations of the CWC, they may lessen the severity of the accusations.

a. Mitigating Factor 1: Avoiding Unnecessary Non-Combatant Casualties

Harper writes that the most important measure in determining whether a particular employment of a RCA constitutes a method of warfare is whether the goal of that employment is to avoid unnecessary non-combatant casualties. As with a number of considerations in the CWC, this factor also boils down to the intent of RCA use: was the intent to save innocent lives, or to enhance the effects of lethal weapons? If the intent of using RCAs was to avoid unnecessary non-combatant casualties, for example in an urban setting, then this would weigh against such use being considered a method of warfare. However, if used as a force multiplier, there is little room for argument that they were not used as a method of warfare. The intent to save innocent lives was the overriding consideration that guided the US military and civilian administration to allow the use of RCAs in certain limited situations under EO 11850. An example in which such use could be permitted is to control civilians rioting and threatening food convoys traveling to refugee camps. The intent in such a situation is to save lives, reduce casualties and protect supplies.

Commentators have also argued that use against enemy combatants would be barred irrespective of purpose. Such use will virtually always be designed to advance some military objective. Even if the intent is to save enemy combatants’ lives, the method is used to their harassment and/or immobilization, which is a military objective, and thereby exploits the toxic properties of the chemicals as a method of warfare.

b. Mitigating Factor 2: Incidental Operations

A further mitigating factor is whether the RCA use is incidental to attaining the military objective. A number of cases outlined in EO 11850 would fall within this factor. An example is employing RCAs in an operation to clear civilians from the vicinity of a downed aircraft. The primary objective of the operation is not the clearing of civilians, but rather the recovery of the aircrew. As such, RCA use would be incidental to the primary objective.

---

140 Harper, supra note 107 at 152-153.
141 Id. at 153.
142 Id.
143 Id.
144 Chayes, Meselson & Smith, supra note 97 at 6.
145 Id.
146 Id.
147 Harper, supra note 107 at 154.
If the RCA were used as part of achieving a military objective, however, it would be considered a method of warfare. An example is utilizing a RCA to flush soldiers from a defensive position in a cave in order to engage them.\textsuperscript{148}

\textbf{C. Law Enforcement Purposes}

As mentioned earlier, an important aspect of the general purpose criterion defining a chemical weapon is the series of "purposes not prohibited" exceptions. These exceptions describe situations in which the use of toxic chemicals and their precursors are permitted. Of the four exceptions, Article II(9)(d) is of relevance to the Fallujah assault. This section allows use of a toxic chemical if it is for law enforcement purposes, including domestic riot control, and if the types and quantities of the chemicals used are consistent with this purpose. This argument is posed as an additional or alternative argument in case it is found that the white phosphorus was not used as a method of warfare.

\textbf{1. Law Enforcement vs. Domestic Riot Control}

There has been considerable debate over the choice of wording in Article II(9)(d). A split has emerged over the relationship between the phrases "law enforcement" and "domestic riot control." The United States adopts the ordinary meaning of the phrases, that is, that "domestic riot control" is a subset of "law enforcement" and that other permissible law enforcement activities exist that may not be domestic riot control.\textsuperscript{149} According to Ambassador Stephen Ledogar, the US CWC-negotiating ambassador, in written testimony to the US Senate Foreign Relations Committee:

\begin{quote}
We understand the language 'law enforcement including domestic riot control' to mean that domestic riot control is a subset of law enforcement activities. We understand other law enforcement activities to include: controlling rioting prisoners of war; rescuing hostages; counter terrorist operations; drug enforcement operations; and non-combatant evacuation.\textsuperscript{150}
\end{quote}

However, an opposing interpretation was proposed by the United Kingdom and supported by the majority of negotiating states which stated that the Convention entitles state parties:

\begin{quote}
to use toxic chemicals for law enforcement, including domestic riot control purposes, provided that such chemicals are limited to those \textit{not listed in the schedules to the convention and which can produce rapidly in}
\end{quote}

\textsuperscript{148} \textit{Ibid.}
\textsuperscript{150} 102d Congress, 2nd Session, Senate, Committee on Foreign Relations (May 1, 1992), Chemical Weapons Ban Negotiation Issues, S.Hrg.102-719, USGPO, at 34-35.
humans sensory irritation or disabling physical effects which disappear within a short time following termination of exposure.\textsuperscript{151}

This second interpretation incorporates the RCA definition from Article II(7). It consequently limits the use of chemicals for law enforcement purposes only to those which are permitted for riot control purposes, thereby coming to the opposite interpretation of the United States and making law enforcement purposes a subset of domestic riot control.\textsuperscript{152} This interpretation complies with Article 31 of the VCLT by interpreting the provision “in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in light of its object and purpose.”\textsuperscript{153}

According to the CWC’s Preamble, the Convention’s object and purpose is to exclude “completely the possibility of the use of chemical weapons.”\textsuperscript{154} The practical effect of the US position is that it creates an entire class of chemicals that would be completely free from the Convention’s prohibitions. As the CWC provides only a definition of RCAs, and not of law enforcement, and since the United States considers RCAs a subset of chemicals used for law enforcement purposes, those latter chemicals would not fall under the CWC control mechanisms. As Robinson states, the US position pays little attention to the object and purpose of the Convention by legitimizing the development, production and stockpiling of anti-personnel chemicals having physiological effects different from those of existing police-issue tear gases and other similar substances.\textsuperscript{155}

The consequences of adopting the US position are that white phosphorus smoke could potentially be used in a situation that is arguably one of law enforcement, but which does not fall within the riot control definition. Although at odds with the interpretation accepted by most CWC state parties, the United States could argue that Fallujah was a situation of law enforcement and that therefore the use of white phosphorus was permitted. However, as will be outlined below, it is unlikely that such an interpretation is acceptable. The analysis below will discuss the meaning and scope of the term “law enforcement.” It will also explore issues of law enforcement authorization under national and international law. Lastly, these will be applied to the Fallujah assault to assess whether the situation was one of law enforcement.

2. The Meaning and Scope of “Law Enforcement”

As mentioned above, the CWC does not provide a separate definition of the term “law enforcement.” There is confusion regarding what law may be enforced, how and where it may be enforced, and under what circumstances.\textsuperscript{156} Krutzsch gives some guidance on this issue. He points out that the phrase “law enforcement including

\textsuperscript{151} UK Foreign & Commonwealth Office Minister of State Douglas Hogg, written response to a Parliamentary question from Mr. Macdonald addressed to the Secretary of State for Foreign and Commonwealth Affairs (Dec. 7, 1992), Hansard (Commons) vol. 215 no. 89 cols. 461-62; see also Robinson, supra note 149 at 1.

\textsuperscript{152} Robinson, supra note 149 at 1.

\textsuperscript{153} Vienna Convention for the Law of Treaties (1969), art. 31(1).

\textsuperscript{154} Chemical Weapons Convention, Preamble.

\textsuperscript{155} Robinson, supra note 149 at 1.

\textsuperscript{156} Chayes, Meselson & Smith, supra note 97 at 15.
domestic riot control" presupposes a specific factual situation in which domestic law and order are violated or endangered. The terms "law enforcement" and "domestic riot control" have different meanings. Krutzsch states that "law enforcement" is the more general term, whereas "domestic riot control" is more specific. An example of law enforcement that Krutzsch provides is the reprimand by a policeman on night patrol towards individuals disturbing sleep. The consequences of law enforcement are a fine or arrest. In contrast, a domestic riot control situation involves rioting citizens with the consequent security action involving cordons, police sticks, water-canons and tear gas.

3. Who May Enforce the Law?

Without a proper definition, the question of who may execute law enforcement is of vital importance. The editors of the Chemical Weapons Convention Bulletin have provided a proposed guideline to this question:

The term "law enforcement" in Article II(9)(d) means actions taken within the scope of a nation's "jurisdiction to enforce" its national laws, as that term is understood in international law. When such actions are taken in the context of law enforcement or riot control functions under the authority of the United Nations, they must be specifically authorized by that organization. No act is one of "law enforcement" if it otherwise would be prohibited as a "method of warfare" under Article II(9)(c).

a. Enforcement of National Law

It is clear that national law may be enforced within a state's territorial boundary and upon its subjects. This is not in dispute and is a cardinal principle of national jurisdiction and state sovereignty. However, may a state enforce its laws within the territory and upon the subjects of another state? As the above guideline states, the phrase "jurisdiction to enforce" national laws must be considered in the context of international law. It is a cardinal principle that "a state cannot take measures on the territory of another state by way of enforcement of national laws without the consent of the latter." Therefore, the enforcement of national law depends on territorial and subject-matter jurisdiction. No person may be arrested, detained, or taxed while in the territory of

---

158 Id.
159 Id. at 4.
162 Id. at 297.
another state, except when permitted by that state. In the context of the CWC, for a state to use RCAs for law enforcement activities in another state’s territory, it must first receive the consent of that state.

b. Enforcement of International Law

International law does not provide greater clarity on the issue. Is it permissible for a state to justify its use of RCAs by claiming that it is enforcing international law? Are there restrictions on such actions? As Chayes and Meselson write, only in the narrowest of circumstances should states be permitted to invoke international law to justify their “law enforcement” activities, because it would be an invitation to anarchy to permit states to judge and enforce violations of international law themselves. As such, the United Nations provides international law enforcement the greatest legitimacy. Under the UN Charter, two organs are empowered to authorize international actions involving the use of force: the General Assembly and the Security Council. Without their approval, such actions would not be legal law enforcement. Despite UN approval, these actions would still have to comply with the prohibitions under treaty and customary law on the use of RCAs as a method of warfare.

D. Application to Fallujah

The above law will be applied to the Fallujah assault to ascertain whether the use of white phosphorus smoke amounted to a use of a RCA as a method of warfare, and/or whether it was a situation of law enforcement.

White phosphorus smoke does have properties consistent with a RCA. As mentioned earlier, burning white phosphorus emits a dense white smoke composed of particles of phosphorus pentoxide, which reacts with moisture in the air to form phosphoric acid. This acid may produce a variety of topically irritating injuries to the victim, as well as eye, nose and respiratory irritation. The testing carried out in 1935 demonstrated that the symptoms were reversible when the victim left the exposure site. This fits the CWC definition of a RCA under Article II(7), i.e., that it be a chemical producing sensory irritation or disabling physical effects that disappear within a short time following termination of exposure. It would therefore be a violation of the CWC if the United States had used white phosphorus smoke as a method of warfare.

Exposure to the chemical produces temporary incapacitation, which places white phosphorus within the general purpose criterion and the definition of a toxic chemical. In order to be a lawful use of the chemical, the United States would have to show that it was using the smoke for a purpose not prohibited (i.e. law enforcement) and that the types and

---

163 Id. at 306.
164 Chayes, Meselson & Smith, supra note 97 at 15.
165 CASSESE, supra note 126 at 346-52.
167 ATSDR, supra note 43.
168 GlobalSecurity.org, supra note 45.
169 National Academy of Sciences, supra note 50 at 24.
170 Chemical Weapons Convention, art. II(7).
quantities were consistent with such use. Even though the use of white phosphorus as a method of warfare would violate the CWC, it is important to address the arguments that could be raised in favor of US use of the chemical.

US law provides the minimum standard of legally acceptable use of a RCA because it has the most lenient standards for determining the legality of a method of warfare. If the United States viewed an action as illegal, then it would also be illegal under the more restrictive international position. The United States considers RCA use in wartime situations to be legal if used for peaceful purposes. EO 11850 outlines five such purposes, and Condition 26 of the Senate CWC Ratification Conditions provides a number of further permitted peaceful RCA applications. When examining EO 11850, it is evident that the white phosphorus use in Fallujah was not a situation of controlling rioting prisoners of war, nor a rescue mission for downed aircrews, passengers, escaping prisoners of war, nor one of use in rear echelons outside the zone of immediate combat to protect convoys. A possible argument is that the Fallujah assault was one of EO 11850 condition (b) allowing the use of RCAs in situations where civilians are used to mask or screen attacks and civilian casualties can be reduced or avoided. However, this does not seem to fit the witness accounts of how white phosphorus was employed in Fallujah. All accounts, including official US government statements, portrayed US forces firing the substance at positions where they believed were barricaded insurgents. These insurgents were flushed out by the agent and hit with high explosives upon exiting their barricades. This description does not fit with EO 11850 condition (b) because there was no evidence that white phosphorus was used to separate civilians from combatants. Furthermore, US forces employed lethal force upon those exiting their barricades, without attempting to distinguish between combatants and civilians. White phosphorus was thus a force multiplier, used in conjunction with lethal force. It was not used defensively or peacefully as required by EO 11850, nor did it fit within the peacekeeping exceptions under Condition 26. Its use can only be considered a method of warfare.

In addition, neither of the two mitigating factors described above applies. As stated, white phosphorus was not used as a means of avoiding civilian casualties because otherwise those fleeing their barricades would not have faced lethal force. Furthermore, its use was not incidental to attain a military objective. The primary objective was to flush the enemies out of their barricades in order to kill them. White phosphorus smoke was employed as a RCA as a method of warfare, violating CWC provisions. When RCAs are used unlawfully, they are considered to be chemical weapons. Therefore, the United States used a chemical weapon in the Fallujah assault, violating international treaty, humanitarian and human rights law.

It is noteworthy to consider the existing grey areas between the law of armed conflict and law enforcement by occupying powers, and between law enforcement and fighting a civil war. Determining in which category a particular conflict or battle fits depends largely on interpretation of the facts and circumstances. As argued above, white phosphorus was used in Fallujah as a method of warfare. However, could the United States, in its defense, argue that it was using the RCA for law enforcement purposes, as permitted by the purposes not prohibited section in Article II(9)(d)?

Firstly, the issue of authorization to enforce the law must be established. It is arguable that the United States was authorized to undertake operations under both national and international law. As outlined above, two US led assaults were conducted in Fallujah, one in April 2004, and the other in November 2004. During the April assault, no sovereign Iraqi government existed and power rested in the US led Coalition Provisional Authority, headed by US Administrator L. Paul Bremer. Since no Iraqi government existed, the United States, as the occupying power, provided the national authorization. The United States was not imposing its law on another sovereign state (as prohibited under international law) because no sovereign Iraqi government existed at that time. Instead, the United States was authorized to take actions to maintain peace and security in its area of control, which included the authority to provide law enforcement. In contrast, the situation differed in the November assault because the Coalition Provisional Authority officially handed over power to the Iraqi Interim Government, headed by Prime Minister Lyad Allawi, on June 28, 2004. However, Prime Minister Allawi provided national authorization for the November assault.

Consequently, it is arguable that both the April and November assaults received authorization, once from the United States, as the occupying power, and once from the Iraqi Interim Government.

Under international law, the United States and United Kingdom were also authorized by the UN Security Council to occupy Iraq and restore security and stability to the country.\textsuperscript{172} This recognition was accorded in response to a letter sent by the United States and United Kingdom to the Security Council in which they acknowledged and accepted their legal status as occupying powers in Iraq and accepted all the attendant rights and obligations under existing international law.\textsuperscript{173} The Security Council resolution called upon all concerned "to comply fully with their obligations under international law including in particular the Geneva Conventions of 1949 and the Hague Regulations of 1907.”\textsuperscript{174} It further required the United States and United Kingdom, consistent with the UN Charter and other relevant international law, "to promote the welfare of the Iraqi people through the effective administration of the territory, including in particular working towards the restoration of conditions of security and stability . . . "\textsuperscript{175}

This resolution, decided under UN Chapter VII, determined that the situation in Iraq was a threat to international peace and security. It was the first official recognition by the Council of the United States and United Kingdom’s status as occupying powers. As a result, the United States and United Kingdom were authorized by Resolution 1483 to restore the security and stability in Iraq, as long as they did so while adhering to the 1949 Geneva Conventions. The Fourth Geneva Convention provides the rights and duties of an occupying power.\textsuperscript{176} Of particular relevance is Article 27, which states:

\textsuperscript{172} UN Security Council Resolution (UNSCR), May 22, 2003, 1483, S/Res/1483.
\textsuperscript{174} UNSCR 1483, \textit{supra} note 172 at ¶ 5.
\textsuperscript{175} Id. at 4.
\textsuperscript{176} The Fourth Geneva Convention (Aug. 12, 1949).
Protected persons . . . shall at all times be humanely treated, and shall be protected especially against all acts of violence or threats thereof . . . . However, the Parties to the conflict may take such measures of control and security in regard to protected persons as may be necessary as a result of the war.\textsuperscript{177}

Article 29 further expands on the occupying powers’ responsibilities by stating that “[t]he Party to the conflict in whose hands protected persons may be, is responsible for the treatment accorded to them by its agents, irrespective of any individual responsibility which may be incurred.”\textsuperscript{178} Furthermore, Article 43 of the 1907 Hague Regulations IV requires the occupying power to “take all the measures in his power to restore, and ensure, as far as possible, public order and safety . . . .”

These provisions balance two competing interests, the obligation to treat protected persons humanely, and the occupying power’s need to provide control and security, which are lacking as a result of war. Combined with the authorization in Resolution 1483, it is arguable that the United States and United Kingdom, as occupying powers, were authorized to carry out law enforcement activities in order to restore security and stability in Iraq, as long as protected persons were treated humanely. Thereby, the first criterion, regarding authorization to enforce the law, is satisfied.

The second issue is whether the use of white phosphorus in Fallujah complies with the US interpretation of law enforcement. The United States considers law enforcement to be separate from domestic riot control and its attendant RCA definition. Domestic riot control is a subset of law enforcement, along with a number of other possible scenarios. Of those listed by Ambassador Ledogar to the US Senate Foreign Relations Committee, only one could potentially apply to the Fallujah incident, that being counter-terrorist operations. However, from the facts it does not appear that Fallujah was a situation of law enforcement involving counter-terrorist operations. Firstly, the means and methods of the operation were inconsistent with the nature of law enforcement. Although the objective of the assault involved freeing Fallujah of insurgents, it was not a situation of counter-terrorism law enforcement. Rather, it was a military operation that was more akin to a method of warfare. The official end of major combatant operations does not mean that all subsequent military operations were law enforcement. It is the nature of the assault that must be considered. In the case of Fallujah, the use of white phosphorus smoke was inconsistent with the nature of law enforcement. How could the situation be considered one of law enforcement when white phosphorus was fired at suspected insurgent positions, only to be followed by rounds of conventional explosives? From the accounts of the manner in which the “shake ‘n’ bake” missions were conducted, the Marines appeared completely oblivious to the targets they were firing upon. The United States cannot assert that only combatants were present in Fallujah just because they had urged civilians to leave. The principles of humanitarian law in the Geneva Conventions and customary law still required the United States to exercise the utmost regard for civilian life. The United States should have expected that many civilians were still in Fallujah during the assault. The mixture of civilians and combatants, and the way in which white phosphorus was fired upon them, is completely inconsistent with the law

\textsuperscript{177} Id. at art. 27.
\textsuperscript{178} Id. at art. 29.
enforcement exception. The use of white phosphorous in Fallujah violates the purposes and principles of the CWC, and the obligations the United States had as occupying power under Resolution 1483 and the Geneva Conventions. Although the United States was authorized to restore public order and safety, such measures could not involve the indiscriminate killing of civilians. Furthermore, the killings were a violation of Articles 27 and 29 of the Fourth Geneva Convention, which require that civilians receive humane treatment and protection from violence. The authorization from the Iraqi Interim Government is irrelevant as such actions could never be authorized under the guise of law enforcement.

Furthermore, the types and quantities of the white phosphorus were not consistent with use for law enforcement purposes. Allegedly, white phosphorous was fired from mortar positions some distance from the target. It was used, not as a smokescreen for US Marines to evade enemy fire, but to force the enemy from their protected positions. The fact that the military had such large quantities of white phosphorus munitions available at its disposal may point to a pre-meditation on the part of the military as to the manner that white phosphorus would be used. Law enforcement cannot use mortars and explosives to restore public order.\(^{179}\) As such, the types and quantities of white phosphorus were inconsistent with law enforcement purposes.

In summary, the use of white phosphorus smoke is use of a chemical weapon. It was used as a method of warfare during military operations in Fallujah. The lawful use of chemicals for law enforcement purposes does not apply in the Fallujah assault because of the methods and means of the engagement. The United States has violated the CWC by using a chemical weapon in Iraq.

V. INCENDIARY WEAPONS

A further arms control regime which was potentially violated in Fallujah is that governing incendiary weapons. Although there is no outright prohibition against the use of incendiary weapons, certain restrictions exist under treaty and customary law regarding use against non-combatants. The following involves a discussion of the relevant law, and the application to Fallujah.

A. Treaty Law

The 1980 Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons which may be Deemed to be Excessively Injurious or to have Indiscriminate Effects was negotiated in Geneva between 51 states.\(^{180}\) It opened for signature on October 10, 1980 and entered into force in December 1983.\(^{181}\) It aims to protect military troops from inhumane injuries and prevent non-combatants from accidental death or injury caused by certain types of arms.\(^{182}\) The CCW is an umbrella convention because it only contains general provisions. The substantive law on which

---

\(^{179}\) Chemical Weapons Convention at art II.


\(^{181}\) Id. at 1.

\(^{182}\) Id. at 1.
specific weapons are restricted and prohibited is found annexed to the Convention in a number of protocols. Three protocols existed upon entry into force, each dealing with a specific weapon, the relevant one being Protocol III which deals with incendiary weapons. The CCW required states to consent to a minimum of two of the three protocols. The Convention was initially designed to deal only with international armed conflicts. However, with the rise of non-international armed conflicts throughout much of the early 1990s, an amendment was made to a single protocol in 1996 making it applicable to internal armed conflict. This was extended in 2001 to apply to the entire Convention. Unlike the Chemical Weapons Convention, the CCW has no verification mechanism and consequently relies upon states to individually verify and enforce its provisions, which weakens its authority. The United States signed the CCW on April 8, 1982. However it was not until March 24, 1995 that it ratified Protocols I and II. To date, the United States has not ratified Protocol III.

1. Protocol III

Protocol III of the CCW is of particular importance to the present discussion. The Protocol contains two articles. Article I provides important definitions. Of particular relevance is the definition of an incendiary weapon, as “any weapon or munition which is primarily designed to set fire to objects or to cause burn injury to persons through the action of flame, heat, or a combination thereof, produced by a chemical reaction of a substance delivered on the target.”183 Examples in the Convention of the form that such weapons can take include flamethrowers, fougasses, shells, rockets, grenades, mines, bombs and other containers of incendiary substances.184 The Convention expressly excludes a number of substances from falling under the incendiary weapons definition:

(i) Munitions which may have incidental incendiary effects, such as illuminants, tracers, smoke or signaling systems;

(ii) Munitions designed to combine penetration, blast or fragmentation effects with an additional incendiary effect, such as armour-piercing projectiles, fragmentation shells, explosive bombs and similar combined-effects munitions in which the incendiary effect is not specifically designed to cause burn injury to persons, but to be used against military objectives, such as armoured vehicles, aircraft and installations or facilities.185

Therefore, for a weapon to be considered an incendiary weapon, it must intentionally set fire or burn. If it only ignites fire or burns as a side effect, it is not an incendiary weapon under the Protocol.186

---

184 Id. at art. I(1)(a).
185 Id. at art. I(1)(b).
186 Arms Control Association, supra note 180 at 1.
Article II spells out the substantive prohibitions. The main aim of this Article is to protect the civilian population in the vicinity of the conflict zone from being targeted, and suffering from the effects of the attack. It includes three main prohibitions. First, under Article 2(1), it is prohibited in all circumstances "to make the civilian population as such, individual civilians or civilian objects the object of attack by incendiary weapons." 187 This prohibition mirrors more general bans on targeting civilians under Additional Protocol I to the Geneva Conventions and under customary international law.

Second, Article 2(2) prohibits in all circumstances "to make any military objective located within a concentration of civilians the object of attack by air-delivered incendiary weapons." 188 This broad prohibition against attacking a military object within a civilian concentration with air-delivered incendiary weapons has been criticized for being too restrictive. It could potentially immunize a military objective from attack by air-delivered incendiary weapons, in a situation where such weapons may be the only appropriate means of attack. 189

Third, Article 2(3) prohibits making:

any military objective located within a concentration of civilians the object of attack by means of incendiary weapons other than air-delivered incendiary weapons, except when such military objective is clearly separated from the concentration of civilians and all feasible precautions are taken with a view to limiting the incendiary effects to the military objective and to avoiding, and in any event to minimizing, incidental loss of civilian life, injury to civilians and damage to civilian objects. 190

Whereas Article 2(2) prohibits the use of air-delivered incendiary weapons against a military target within a concentration of civilians, Article 2(3) applies to non-air delivered incendiary weapons and provides restrictions on their use. There are two requirements for the use of incendiary weapons to be permitted: first, the military object must be clearly separated from the concentration of civilians and second, all feasible precautions 191 must be taken to limit the incendiary effects to the military objects in order to minimize loss of or injury to civilian life and objects. This is a pragmatic provision which acknowledges that incendiary weapons do provide utility to the military and may in fact cause less civilian death and injury than other conventional bombs and munitions.

---

187 Convention on Conventional Weapons, Protocol III, art. 2(1).
188 Convention on Conventional Weapons, Protocol III, art. 2(2).
189 Article 1(3) of the Protocol defines "military object" as "any object which by its nature, location, purpose or use makes an effective contribution to military action and whose total or partial destruction, capture or neutralization, in the circumstances ruling at the time, offers a decisive military advantage."
190 Article 1(2) of the Protocol defines "concentration of civilians" as "any concentration of civilians, be it permanent or temporary, such as in inhabited parts of cities, or inhabited towns or villages, or as in camps or columns of refugees or evacuees, or groups of nomads."
192 Convention on Conventional Weapons, Protocol III, art. 2(3).
193 Article 1(5) defines "feasible precautions" as "those precautions which are practicable or practically possible taking into account all circumstances ruling at the time, including humanitarian and military considerations."
From these provisions, it is clear that the Protocol permits the use of incendiary weapons against combatants. The Protocol only offers some limited protections to civilians, restricting incendiary weapon use in such a manner that civilians are not harmed. It still permits the use of non-air-delivered incendiaries if all feasible measures were taken not to harm civilians or civilian objects. Civilians may not be the object of an attack, and if military targets are located in their vicinity, no air delivered incendiaries may be used.

2. US Position Towards Protocol III

As mentioned above, the United States has not signed or ratified Protocol III. President Clinton, upon submitting the Convention to the US Senate for approval in 1994, recommended that the United States exercise its right to ratify the Convention, accepting only the first two protocols and not Protocol III. He stated that Protocol III was not sent to the Senate “because of concerns about the acceptability of the Protocol from a military point of view. Incendiary weapons have significant military value, particularly with respect to flammable military targets that cannot so readily be destroyed with conventional explosives.” However, even though incendiary weapons have such utility, President Clinton reaffirmed that, “the United States must retain its ability to employ incendiaries to hold high priority military targets such as those at risk in a manner consistent with the principle of proportionality which governs the use of all weapons under existing law.”

President Clinton proposed the inclusion of a reservation to the Protocol, which would balance the US national security interests with those of international humanitarian law. The proposed reservation would reserve the right to use incendiaries against military objectives located in concentrations of civilians where it is judged that such use would cause fewer casualties and less collateral damage than alternative weapons. Such a reservation would remove the requirement that civilian and military objects be clearly separated and that all feasible precautions were taken to minimize loss or injury to civilians. If implemented, this amounts to a revision of the legal obligations of Article 2 of the Protocol on the United States so that the test of whether the use of an incendiary weapon is permitted in such circumstances would depend on whether it is judged that such use would cause fewer civilian casualties and less collateral damage than alternative weapons. As Protocol III was never submitted for Senate ratification, this reservation was never implemented.

An analysis conducted by the US Department of Defense’s Office for Acquisition, Technology and Logistics regarding the acceptability of incendiary weapons from a military standpoint made the following conclusion:

195 Id.
196 Id.
Incendiary weapons have significant potential military value, particularly with respect to certain high-priority military targets. Incendiaries are the only weapons which can effectively destroy certain counter-proliferation targets such as biological weapons facilities which require high heat to eliminate bio-toxins. To use only high explosives would risk the widespread release of dangerous contaminants with potentially disastrous consequences for the civilian population. Certain flammable military targets are also more readily destroyed by incendiaries. For example, a fuel depot could require up to eight times the bombs and sorties to destroy using only high explosives rather than incendiaries. Such an increase means a significantly greater humanitarian risk of collateral damage. The United States must retain its ability to employ incendiaries to hold high priority military targets such as these at risk in a manner consistent with the principle of proportionality which governs the use of all weapons under existing law.  

As the United States is not a party to Protocol III, it is not bound by the various provisions it provides. The United States maintains the utility of incendiary weapons for military purposes and reserves its right to use them.

B. Customary International Law

The United States may, however, still be bound by a number of restrictions that exist in customary international law. The ICRC, in its study of customary international humanitarian law, identifies two primary rules in particular. The first regulates the use of incendiary weapons in situations where civilians may be affected. The second governs the use of incendiary weapons against combatants.  Both are discussed below.

1. Incendiary Use and Civilians

One customary norm identified by the ICRC is Rule 84: “If incendiary weapons are used, particular care must be taken to avoid, and in any event to minimize, incidental loss to civilian life, injury to civilians and damage to civilian objects.”

There are a number of similarities between this rule and Article 2(1) of Protocol III of the CCW, each of which prohibit the targeting of civilians and civilian objects for attack by incendiary weapons. Both appear to give protection to civilians, however Protocol III Article 2(1) creates a more encompassing prohibition (prohibiting in all circumstances compared to the prohibition contained in Rule 84 (particular care must be taken to avoid, and minimize). Although making civilians the object of attack would constitute a violation of both Rule 84 and Article 2(1), Rule 84 seems to allow incendiary weapon use against a military target in a concentration of civilians as long as care was

---

198 Id.
200 Id. at Rule 84.
taken to avoid or minimize incidental loss to civilian life, injury and so forth. The ICRC states that even though Article 2(1) is more forceful than the customary Rule 84, the former is also part of customary law as it is a direct application of the principle of distinction. According to the ICRC, the other three paragraphs in Article II do not have customary force. However, they could be considered guidelines for the implementation of the customary rule that particular care must be taken to avoid civilian casualties.

The evidence the ICRC study provides to support the foundation of Rule 84 is found in a number of state documents, military manuals and statements. First, many military manuals when providing the rules for incendiary weapons use refer either directly to the rules in Protocol III, or state the requirement to avoid, or at least minimize, civilian casualties. An overwhelming proportion of the military manuals make specific reference to the need to safeguard civilian lives during incendiary weapon use. A large proportion also forbids the use of incendiary weapons against a military objective situated within a civilian population center, or where it cannot be clearly separated from the civilian population.

In addition, under the national legislation of a number of countries, the use of incendiary weapons is forbidden where the military objective cannot be clearly separated from the civilian population, civilian objects or the surrounding environment. Estonia and Hungary even consider widespread use of incendiary weapons in such a situation to amount to a war crime.

The United States has contributed to the development of customary international law on this issue. However, its legislation and military manuals provide less restrictive rules on incendiary weapon use. The US Air Force Pamphlet states that:

The potential of fire to spread beyond the immediate target area has also raised concerns about uncontrollable or indiscriminate effects affecting the civilian population or civilian objects. Accordingly, any applicable rules of engagement relating to incendiary weapons must be followed closely to avoid controversy. The manner in which incendiary weapons are employed is also regulated by the other principles and rules regulating armed force . . . . In particular, the potential capacity of fire to spread must be considered in relation to the rules protecting civilians and civilian

\[\text{References:}\]

201 Henckaerts & Doswald-Beck, supra note 116 at 288.
202 Id. at 288.
203 Id. at 288.
204 See New Zealand, MILITARY MANUAL ¶ 513, 620 (1992); Canada, LAW OF ARMED CONFLICT MANUAL ¶ 33.34.36 (1999); Germany, MILITARY MANUAL ¶ 420-425 (1992); Russia, MILITARY MANUAL ¶ 6(b) (1990); Sweden, INTERNATIONAL HUMANITARIAN LAW MANUAL § 3.3.2 (1991).
205 Henckaerts & Doswald-Beck, supra note 116 at 288. For military manuals with such a reference, see Cameroon, INSTRUCTOR’S MANUAL 123-124 ¶ 441 (1992); Ecuador, NAVAL MANUAL ¶ 9.6 (1989); France, LAW OF ARMED CONFLICT MANUAL 54 (2001); Israel, MANUAL ON THE LAWS OF WAR 16 (1998); Switzerland, BASIC MILITARY MANUAL art. 23(d) (1987).
207 See Argentina, LAW OF WAR MANUAL ¶ 4.25, 4.26 (1989); Netherlands, MILITARY MANUAL V-13 at ¶ 11 (1993).
209 Id.; Penal Code as Amended (1978), Section 160/A(3)(b)(3) (Hung.).
objects . . . For example, incendiary weapons should be avoided in urban areas, to the extent that other weapons are available and as effective.  

The US Naval Handbook states the following:

Incendiary devices such as tracer ammunition, thermite bombs, flame throwers, napalm, and other incendiary weapons and agents, are lawful weapons. Where incendiary devices are the weapons of choice, they should be employed in a manner that does not cause incidental injury or collateral damage that is excessive in light of the military advantage anticipated by the attack.  

Neither of these statements provides a prohibition on the use of incendiary weapons in areas of civilian concentration. Although the statement from the US Air Force Pamphlet does recommend avoiding incendiary weapons use in urban areas, the usage of the phrase “should be avoided” would allow their use in certain circumstances where the commander deems it necessary. The same could be said regarding the US Naval Handbook statement which, although stating that incendiary weapons should not be used in a manner which causes excessive incidental injury or collateral damage, permits their use if the military advantage anticipated outweights the costs to civilians. Such guidance provides extensive room for interpretation.

During negotiations for Protocol III of the CCW, a number of proposals were made to establish the limits of the situations in which incendiary weapons could be used. At the CCW Preparatory Conference in 1979, the United States stated that although it could not accept a restriction on the use of incendiary weapons against combatants, “an agreement on limiting the use of incendiaries in areas containing civilian concentrations was appropriate and possible . . . . The [Australia/Netherlands] proposal was the maximum that some of the principal interested parties at the Conference would be prepared to accept.”

Considering the US position, it is important to ascertain the Australian and Netherlands proposals in order to establish what the United States considered to be the maximum restrictions on the use of incendiary weapons in areas containing civilian concentrations.

After a number of draft proposals and revisions, Australia and the Netherlands submitted a draft proposal in 1979 stating that “as a consequence of the rules of international law applicable with respect to the protection of civilians against the effects of hostilities, it is prohibited to make the civilian population as such as well as individual civilians the object of attack by means of incendiary munitions.” Furthermore, incendiary weapons used against military objectives in civilian concentrations were not prohibited, “provided the attack is otherwise lawful and that all feasible precautions are

210 US AIR FORCE PAMPHLET ¶ 6-6(c) (1976).
taken to limit the incendiary effects to the military objective and to avoid incidental loss of civilian life and injury to civilians."\textsuperscript{214}

These statements show what the United States considers to be the maximum limit of the law on incendiary weapon use in civilian concentrations. A summary of the above law would be as follows:

1. It is prohibited to make civilians the object of attack by means of incendiary weapons.
2. Military objectives in civilian concentrations may be the object of attack only if:
   a. all feasible precautions are taken to limit the incendiary effects to the military objective; and,
   b. to avoid incidental loss of civilian life and injury to civilians.

   a. Principle of distinction

What may further bind the United States are the rules in the Additional Protocol I to the Geneva Conventions (many of which have attained customary status). Despite the United States not being a state party to the Protocol, many of these rules are codifications of customary international law. The Protocol obliges respect for the principle of distinction. The basic rule upholding this is Article 48, which requires parties to a conflict at all times to distinguish between the civilian population and combatants and to direct their operations only against military objectives.\textsuperscript{215} Therefore, civilians may never be made the object of an attack. The International Court of Justice (ICJ) upheld the principle of distinction as being one of the "cardinal principles" of the law of armed conflict and one of the "intransgressible principles of international customary law."\textsuperscript{216} Article 51 of Protocol I states that civilians\textsuperscript{217} shall not be the object of attack\textsuperscript{218} and shall enjoy general protection against dangers arising from military operations.\textsuperscript{219} Article 51 codifies a principle of customary international law prohibiting indiscriminate attacks against civilians.\textsuperscript{220} Indiscriminate attacks are defined as:

(a) those which are not directed at a specific military objective;
(b) those which employ a method or means of combat which cannot be directed at a specific military objective; or

\textsuperscript{214} Id.
\textsuperscript{216} Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, ICJ Reports 1996.
\textsuperscript{217} Additional Protocol to the Geneva Conventions of 12 Aug. 1949 (Protocol I), Article 50 states that civilians are all those who are not part of the armed forces as defined in Article 43 of Additional Protocol I, as well as those not directly linked to the armed forces, released prisoners of war, those employed in the production, distribution and storage of munitions of war, and those taking or have taken part in hostilities without combatant status. See Michael Bothe, Karl Joseph Partsch & Waldemar A. Solf, New Rules for Victims of Armed Conflict 293-294 (1982).
\textsuperscript{218} Id. at art. 51(1).
\textsuperscript{219} Henckaerts & Doswald-Beck, supra note 116; Rule 11 at 37-40.
Furthermore, states not party to the Protocol, including the United States, have relied on this definition. Article 54(4)(c) relates to weapons whose effect cannot be limited in accordance with international humanitarian law. By definition, such an attack is an indiscriminate attack. The ICRC points to practices which illustrate that such limits refer to weapons whose effects are uncontrollable in time and space and are likely to strike military objectives and civilians without distinction. Incendiary weapons and biological weapons would fit this description.

In addition, Article 51(5) provides two examples of what would constitute an indiscriminate attack. The most relevant example is found in subsection (5)(b) and states there is an indiscriminate attack where, “an attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, [and] which would be excessive in relation to the concrete and direct military advantage anticipated.” This rule encapsulates the principle of proportionality where a balance is struck between the military necessity for eliminating a military object and avoiding incidental or collateral civilian casualties. Notably, it has also been considered part of customary international law. The information available to the commander at the time of the attack must be taken into account, not that available in hindsight.

Precautions must be made when launching military attacks, including the requirement of constant care to spare the civilian population. This principle links back to the basic rule in Article 48 requiring that military objects and civilians be distinguished. Article 57 lists a number of precautionary rules including: the verification of the identity of the object of attack as a military objective, the application of the principle of proportionality in situations when attacks against military objectives may be expected to cause collateral civilian casualties or damage to civilian objects, and the choice of methods or means of inflicting injury on the enemy with the view of selecting that which poses the least danger to the civilian population. The ICRC considers these precautionary rules to be part of customary international law.

2. Incendiary Use and Combatants

(c) those which employ a method or means of combat the effects of which cannot be limited as required by this Protocol.

This definition has been considered part of customary international law and is included in a large number of national military manuals. Furthermore, states not party to the Protocol, including the United States, have relied on this definition. Article 54(4)(c) relates to weapons whose effect cannot be limited in accordance with international humanitarian law. By definition, such an attack is an indiscriminate attack. The ICRC points to practices which illustrate that such limits refer to weapons whose effects are uncontrollable in time and space and are likely to strike military objectives and civilians without distinction. Incendiary weapons and biological weapons would fit this description.

In addition, Article 51(5) provides two examples of what would constitute an indiscriminate attack. The most relevant example is found in subsection (5)(b) and states there is an indiscriminate attack where, “an attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, [and] which would be excessive in relation to the concrete and direct military advantage anticipated.” This rule encapsulates the principle of proportionality where a balance is struck between the military necessity for eliminating a military object and avoiding incidental or collateral civilian casualties. Notably, it has also been considered part of customary international law. The information available to the commander at the time of the attack must be taken into account, not that available in hindsight.

Precautions must be made when launching military attacks, including the requirement of constant care to spare the civilian population. This principle links back to the basic rule in Article 48 requiring that military objects and civilians be distinguished. Article 57 lists a number of precautionary rules including: the verification of the identity of the object of attack as a military objective, the application of the principle of proportionality in situations when attacks against military objectives may be expected to cause collateral civilian casualties or damage to civilian objects, and the choice of methods or means of inflicting injury on the enemy with the view of selecting that which poses the least danger to the civilian population. The ICRC considers these precautionary rules to be part of customary international law.

2. Incendiary Use and Combatants

---

222 Henckaerts & Doswald-Beck, supra note 116 at 41.
223 Id.
224 Bothe, Partsch & Solf, supra note 217 at 306.
225 Henckaerts & Doswald-Beck, supra note 116 at 43.
226 Bothe, Partsch & Solf, supra note 217 at 305.
227 Additional Protocol I, art. 51(5)(b).
228 Id. at 310.
229 Additional Protocol I, art. 57(1).
230 Id. at 57(2); see also Bothe, Partsch & Solf, supra note 217 at 359.
The second norm identified by the ICRC regulating the use of incendiary weapons is as follows: "[t]he anti-personnel use of incendiary weapons is prohibited, unless it is not feasible to use a less harmful weapon to render a person hors de combat." 233

The ICRC stated that in the initial discussions and negotiations, a number of states were pushing for a complete ban on incendiary use against combatants. However, it soon became clear that the Protocol would not receive widespread support if such a broad prohibition were included. As such, a fallback position was posited which would have prohibited incendiary use against combatants except when they were under armored protection or in field fortifications. This pragmatic proposal attempted to balance the military necessity of incendiary weapons against the ideal of humanizing the battlefield. However, even this position received opposition, most notably from the United States and the United Kingdom. As a result, no prohibition against incendiary weapon use on combatants was included in the Protocol.

According to the ICRC, despite such prohibitions not being included, it did not mean that the use of incendiary weapons against combatants was lawful in all circumstances. 234 There is a broad spectrum within the various national positions on incendiary weapon use on combatants. They range from the restriction that incendiaries may only be used when combatants are under armored protections or in field fortifications, 235 to the prohibition of incendiary weapons when causing unnecessary suffering, 236 to the complete prohibition because it always causes unnecessary suffering. 237

The US position on this issue is articulated in the US Field Manual, which states that, "[t]he use of weapons which employ fire, such as tracer flame-throwers, napalm and other incendiary agents, against targets requiring their use is not a violation of international law. They should not, however, be employed in such a way as to cause unnecessary suffering to individuals." 238 In addition, the US Air Force Pamphlet similarly states that "[i]ncendiary weapons . . . have widespread uses in armed conflict. Although evoking intense international concern, combined with attempts to ban their use, state practice indicates clearly they are regarded as lawful in situations requiring their use. . . . [T]he incendiary weapons must not be used so as to cause unnecessary suffering." 239

With the various statements from the United States and other states, the ICRC concludes that a customary rule has developed prohibiting incendiary weapons use against combatants if such use would cause unnecessary suffering, e.g., if it is feasible to use a less harmful weapon to render a combatant hors de combat. 240

233 ICRC Study at Rule 85
234 Henckaerts & Doswald-Beck, supra note 116 at 290.
235 Proposals Submitted to the Preparatory Conference for the CCW by Austria, Denmark, Egypt, Ghana, Indonesia, Jamaica, Mexico, Norway, Romania, Sweden, Venezuela, Yugoslavia and Zaire; See also Henckaerts & Doswald-Beck, supra note 116 at 290.
236 Military Manuals of Australia, Canada, New Zealand, United Kingdom, and the United States. See also ICRC Study at Rule 290.
237 Military Manuals of Belgium, Colombia, and Sweden; Statements of Norway and the USSR to the Preparatory Conference for the CCW; Henckaerts & Doswald-Beck, supra note 116 at 290.
238 US FIELD MANUAL ¶ 36 (1956).
239 US AIR FORCE PAMPHLET, supra note 210 at ¶ 6-6(c).
240 Henckaerts & Doswald-Beck, supra note 116 at 291.
a. Unnecessary Suffering

The determining factor for the above rule is whether the use of incendiary weapons caused unnecessary suffering. The prohibition against this exists in both treaty and customary law. Article 35 of the 1977 Additional Protocol I to the 1949 Geneva Conventions states: “1. In any armed conflict, the right of the Parties to the conflict to choose methods or means of warfare is not unlimited. 2. It is prohibited to employ weapons, projectiles and material and methods of warfare of a nature to cause superfluous injury or unnecessary suffering.”

The ICRC has included this prohibition in its study of customary international humanitarian law. Rule 70 states, “[t]he use of means and methods of warfare which are of a nature to cause superfluous injury or unnecessary suffering is prohibited.”241 Importantly, the International Court of Justice in the Nuclear Weapons Advisory Opinion242 held that the rule prohibiting unnecessary suffering to combatants was a cardinal principle and that this outlawed certain weapons irrespective of whether they were specifically prohibited by treaty or not.243

The two quoted paragraphs of Article 35 must be read together. Paragraph 1 provides a general prohibition, whereas paragraph 2 specifies an implementing rule derived from the principles in paragraph 1. According to Bothe, Partsch and Solf, the prohibition in paragraph 1 contains two limitations on the choice of methods and means or warfare. These include such rules as prohibiting poisoned weapons, the use of weapons and methods of warfare of a nature to cause superfluous injury or unnecessary suffering, perfidious killing, wounding, or capturing of enemy combatants and attacks on civilians.244 The second layer of limitations provides the two complementary principles that are the foundations for the international humanitarian law: necessity and humanity. Necessity justifies those measures of military violence not forbidden by international law which are relevant and proportionate to securing the prompt submission of the enemy with the least possible expenditure of economic or human resources.245 Balancing this, humanity forbids those measures of violence that are not necessary (that is, relevant and proportionate) to the achievement of a definite military advantage.246 Applying this limitation to the rule in Paragraph 2, the balance is between necessity, on the one hand, and the expected injury or suffering inflicted on the person on the other.247 The test becomes whether the suffering is needless, superfluous, or manifestly disproportionate to the military advantage reasonably expected from the use of the weapon.248 The International Court of Justice defined unnecessary suffering as harm greater than that

241 Henckaerts & Doswald-Beck, supra note 116 at 237.
244 Bothe, Partsch & Solf, supra note 217 at 194.
245 Id. at 194-95.
246 Id. at 195.
247 Henckaerts & Doswald-Beck, supra note 116 at 240.
248 Bothe, Partsch, & Solf, supra note 217 at 196.
unavoidable to achieve legitimate military objectives. An additional consideration is whether alternative means can be used to achieve the same military objective.

The term “suffering” has proven difficult to define. Generally speaking, suffering is considered to include both the physical and psychological effects of weapons, the long-term nature of the injuries, the painfulness or severity of the wounds, mortality rates and the treatment available in conflict situations. The ICRC study created a list of methods and means of warfare that could be considered to create unnecessary suffering, which included among others incendiary weapons. There was not, however, sufficient agreement to establish that they were prohibited.

C. Application to Fallujah

A number of questions must be answered in order to ascertain whether the United States violated international law regarding use of an incendiary weapon in Fallujah. First, is white phosphorus used in this manner considered an incendiary weapon? Second, irrespective of not being a state party to Protocol III, did the US actions comply with the treaty’s requirements? Third, did the United States adhere to the rules of customary international law regarding incendiary weapon use? These three questions will be discussed in turn.

First, according to Protocol III, for a substance to be an incendiary weapon, it must be “[p]rimarily designed to cause burn injury to persons through the action of flame, heat or combination thereof . . . .” Burning white phosphorus particles is an incendiary weapon. Upon contact with exposed skin or mucus membranes, it causes burn injuries through the action of heat and flame. Its employment was not as its other purpose of a smokescreen, but rather its use involved an intention to exploit its incendiary qualities. Furthermore, the substance must not be expressly excluded as a weapon with incidental incendiary effects under Article I(1)(b) of the Protocol. The “shake “n’ bake” missions were not using the incendiary qualities of white phosphorus as an incidental effect. Rather, those qualities were the primary purpose of their use. Therefore, white phosphorus is not excluded from the definition, and is considered an incendiary weapon under the Protocol.

Second, although not being bound by the provision of Protocol III, did the United States comply with its requirements? There are three prohibitions relevant to the present discussion. The first is whether civilians were made the object of the attack, as prohibited by Article 2(1) and customary law. The evidence does not support such a conclusion. By all accounts the objects of attack for the US forces were the suspected insurgents, not the civilians. The second prohibition in Article 2 bans the use of air-delivered incendiary weapons against military objectives located in a concentration of civilians. Again, there is no evidence suggesting that the United States fired white phosphorus from air-delivered systems. The accounts relied upon refer to US forces firing white phosphorus from mortars. The third prohibition bans attacking military objectives located in a concentration of civilians with non-air-delivered mechanisms unless the civilians are clearly separated from the military object and all feasible

249 Henckaerts & Doswald-Beck, supra note 116 at 238.
250 Gardam, supra note 243 at 72; Bothe, Partsch & Solf, supra note 217 at 196.
251 Henckaerts & Doswald-Beck, supra note 116 at 244.
precautions are taken to limit incendiary effects to the military objective, thereby minimizing incidental loss or injury of civilians. From the accounts, it appears that this provision has been violated. The US forces fired white phosphorus from ground delivered systems without knowing what target they were hitting. During the assault, US Marines reported a significant civilian presence in Fallujah. Judging from the nature of urban warfare, it is unlikely that they were clearly separated from the military objectives. It is likely that there was no intention of killing or injuring civilians through such actions. However, the use of an incendiary weapon in an urban combat situation where civilians were still clearly present is a violation of Article 2(3). In addition, as the US government has not released information regarding its operational handling of the Fallujah assault, it is unclear what precautions were taken by US commanders to limit the effects of white phosphorus on combatants. Nonetheless, the method of deployment, the indiscriminate nature of the agent, and the urban setting, do not support the view that all feasible precautions were undertaken. According to the Protocol, feasible precautions include all those practicable or practically possible taking into account all circumstances ruling at the time.\textsuperscript{252} Further precautions should have been undertaken to confirm the military nature of the target. Since the United States is not party to Protocol III and Article 2(3) is not part of customary law, this provision only has the status of a non-binding guideline, and its violation will have no real consequences for the United States.

Customary law, however, binds the United States and evidence suggests that violations of this law occurred. First, the United States breached the customary norm that particular care must be taken to avoid and minimize incidental loss or injury to civilians. Although mirroring Article 2(3) above, this law is more lenient and allows some collateral damage provided all feasible precautions are taken to avoid or minimize it. As mentioned above, there is no evidence that feasible precautions were taken during the "shake 'n' bake" missions. The method of white phosphorus use shows an utter lack of precautionary measures as those being fired upon could have been (and many cases were) civilians. The reports also suggest that white phosphorus did injure and kill civilians. Furthermore, the principle of distinction outlaws any indiscriminate attacks against civilians. The use of white phosphorus involved a method and means of combat the effects of which cannot be limited as required by Protocol I.\textsuperscript{253} Furthermore, due to the urban setting, the attacks could be expected to cause incidental loss and injury to civilians. Such assaults were excessive to the concrete and direct military advantage as it involved firing an incendiary weapon in a setting where civilians and combatants were mixed in the hope that those fleeing were insurgents. This amounts to a violation of the principles of proportionality and distinction. The United States also violated its own military manuals which required that if other more effective weapons causing less suffering were available, such should be used in place of incendiaries. A statement in the Field Artillery article suggests that other weapons were available, but that they were used only to save the white phosphorus for lethal missions.\textsuperscript{254} This shows the intent for which white phosphorus was exploited. Any commander would have been aware of the inherent risks of such actions to the civilian population.

\textsuperscript{252} Protocol III, art. 1(5).
\textsuperscript{253} Additional Protocol I, art. 54(4)(c).
The same consideration regarding choice of a less harmful weapon is central to the customary rule that the anti-personnel use of an incendiary weapon is prohibited, unless it is not feasible to use a less harmful weapon to render a person hors de combat. Injury and death by white phosphorus would involve unnecessary and superfluous suffering. The law allows the killing of combatants with incendiaries only if other, less harmful weapons are not available. As mentioned earlier, other weapons were allegedly available; however, such a determination remains for the commander on the field to make. With little battle information in the public domain, it is out of the scope of this paper to analyze this issue. If it were found that other weapons and tactics could have been used, it would only further indict the US forces for their actions in Fallujah.

In summary, the evidence suggests that the United States violated its customary obligations to protect the civilian population. It used an indiscriminate weapon in an environment where civilians and combatants were mixed, thereby violating its obligations under the law of armed conflict. More facts are required to ascertain whether the use against combatants was unlawful.

VI. CONCLUSION

The use of white phosphorus in Fallujah was in violation of a number of international treaties and customary obligations binding upon the US armed forces. The white phosphorus smoke was used in a manner inconsistent with the US obligations under the CWC, being used as a precursor chemical and as a riot control agent as a method of warfare. It thus amounted to the use of a chemical weapon. There is some irony in this conclusion considering that Iraq never used chemical weapons against the United States despite the overly touted allegations that Saddam Hussein had chemical and biological weapon stockpiles. The United States also violated its obligations under the customary rules regarding the use of an indiscriminate incendiary weapon in a mixed civilians and combatant setting. Different weapons and tactics should have been used to avoid civilian casualties and the violation of international law of armed conflict. However, the expected consequences for the US forces are minimal. The US government must prosecute the perpetrators under its code of military justice. It is unlikely that any action will be taken internationally by other states or relevant international organizations on this issue due to the highly politically charged nature of the Iraq war and the secret nature of the US military’s methods and means of warfare. Changes to the US rules of engagement and military manuals, as well as better training for its soldiers, would be the most effective way to avert future violations.