

Napalm in US Bombing Doctrine and Practice, 1942-1975

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[French translation available](#)

Abstract

If the doctrine of strategic bombing has been the object of much attention in the military history and international relations literature (Biddle 2002, Pape 2011), few studies have focused on the means deployed to achieve the bombings. Yet, these means are crucial to understand three decisive aspects of the doctrine and practice of strategic bombing: (1) how they have been defined; (2) how they have changed; and (3) how they have been perceived and used by different actors (militaries, international institutions and public opinion) over time (3). This article highlights these issues through the analysis of napalm utilization by the US military. It demonstrates that the massive use of this weapon, from its creation in 1942 to the Vietnam War, is at the core of a shift in the doctrine and practice of American strategic bombing. The article demonstrates that analysis of the weapons deployed for ‘strategic bombing’ enriches the historiography – and the understanding – of the doctrine and practice of strategic bombing itself.



Trang Bang, Vietnam, 8 June 1972

When Harvard scientist Louis Fieser created a new type of incendiary weapon which he called napalm on 4 July 1942, he probably did not expect that he would become the ‘father’ of a weapon at the very core of American bombing within a decade. He probably did not expect either that, after having been widely lauded and awarded for this invention for more than 25 years, he would have to rewrite his official biography so that the word “napalm” ceased to appear in it.¹

Interestingly, the personal trajectory of Fieser – from “praise” to “shame” – echoes the trajectory of the perceptions attached to napalm throughout the second half of the twentieth century. Napalm experienced during the first twenty years following its creation strong support in the eyes of prominent American military leaders (Curtis LeMay being the most famous figure among them), and relative indifference by the US domestic population. During this period, the US military increasingly deployed napalm, and, to use the

words of Harry Truman's Secretary of War Robert Patterson in referring to incendiary weapons, "this 'dud' of World War II became one of the most potent weapons in the Pacific Operations."² Yet, this 'popularity' rapidly faded during and after the Vietnam War. The increasing deployment of napalm by the US military from 1945 to 1975 preceded a significant decrease in napalm utilization: never after the Vietnam War has the weapon been used in such quantity. While it is true that some incendiary weapons - with composition very close to napalm - were deployed during the Iraqi and Afghanistan wars, their quantity was small compared to those deployed in Vietnam and in the Korean War (1950-53). In 2001, the US Army organized a 'last canister ceremony' at the Fallbrook Naval Weapons Station to publicly destroy its last remaining stockpiles of napalm. Like Fieser who erased the word napalm from his official biography, the US Army proclaimed to the world that it had eliminated napalm from its weaponry.

Understanding the variations in US bombing and doctrine with a normative approach focused on napalm

Why was the napalm used less and less after the Vietnam War? How did the use of napalm during the war influence US strategy and practice of aerial attack?

The article argues that the framing of napalm by the US military as well as by activists from civil society and members of the United Nations, which occurred at the end and after the Vietnam War, directly impacted US bombing doctrine and practice.

The US military came to associate napalm and its destructive power with the failure of the attrition strategy deployed during the Vietnam War. The attrition strategy -- which consists in the sustained process of wearing down an opponent so as to force its physical collapse through continuous losses in personnel equipment and, eventually, breaking their will

to fight -- did not erode the opponent's resistance.³ It rather led the US military to engage in a long escalation of violence which not only exhausted its own resources, but ultimately undermined the support of both the Vietnamese and the US population necessary to win the war. The consensus within the US military that the Vietnam War was a strategic failure led it to initiate a deep shift in military culture⁴ which promoted a new strategy of restraint, that is a population-centered approach that acknowledges the necessity to regulate practices of war, protect civilians and spare harm during military operations to secure civilian support. This led, the US military to deploy weapons whose firepower could be controlled and directed against precise targets.⁵ As a consequence, napalm ceased to be at the core of the US military strategy because its destructive power was not easy to control and could not really be limited to a target. The result was that napalm was de facto excluded from the new dominant doctrine of strategic bombing.

This US military reframing of napalm - from a strategic asset to a liability as a weapon - coincided with the criticisms of napalm by activists from civil society and by members of the United Nations. The escalation of violence that took place in Vietnam inspired terror and indignation not only in the eyes of the local population but also of a large part of American civil society and members of the United Nations. Some of the latter denounced the US-Vietnam War as one that killed innocent people (Vietnamese civilians but also young Americans). Napalm, largely because of the powerful impact of some images enshrined in the collective memory and the collective apprehension attached to the use of fire in war, became reframed and portrayed as the symbol of an illegitimate means of warfare. This frame led the United Nations to define more constraining legal rules to limit the use of napalm based on Protocol III of the Convention on Certain Conventional Weapons (CCCW)

adopted in 1980. The negative symbolic charge attached to napalm coupled with the new legal constraints framing its use outweighed any tactical advantage potentially gained with the weapon.⁶

This article focuses (1) on the changing approaches to the uses of napalm by the US military from World War II to the present; it then (2) shows how the perception of napalm and attrition strategy within US military changed after the Vietnam War before (3) analyzing how activists and certain members of the United Nations framed, after the Vietnam War, napalm as an illegitimate and illegal means of warfare.

Napalm and the doctrine of attrition: from creation to the Vietnam climax

The creation of napalm (1942): the invention of an “efficient” incendiary weapon

The creation of napalm on 4 July 1942 by Louis Fieser crowned a succession of experiments on the Harvard campus beginning in 1940 under the direction of the National Defense Research Committee. The purpose of the experiments was to improve the efficiency of incendiary agents that on the eve of World War II, had been ‘banished’ to the ‘periphery’ of US military doctrine. This relegation can be explained by two facts. First, for a long time, incendiary weapons represented a major technical challenge, mostly because of the ineluctable trade-off between destruction and precision its users had to face. Second, the development and research on incendiary weapons were neglected, to the advantage of chemical weapons, which were perceived as far more efficient than incendiary weapons, such as flamethrowers. Things changed with the development of napalm.

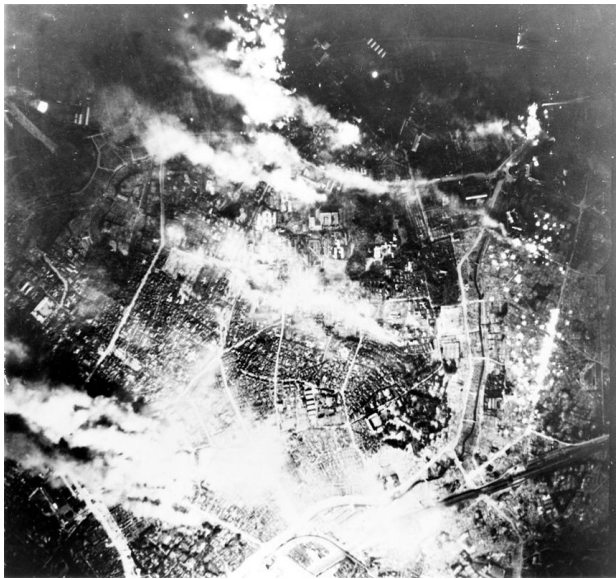
Napalm is a specific type of incendiary, a “thickened oil incendiary agent” whose composition and name changed over time (i.e. napalm, napalm B and MK77) and was rapidly

recognized as a highly efficient incendiary weapon for three reasons. First, it greatly increased the probability of igniting other inflammable materials in the target area. Second, napalm has great visco-elasticity, which extends the range of the jet of flaming fuel projected by flamethrowers.⁷ Third, napalm is not self-igniting and therefore can be more easily handled than other incendiary agents. These factors explain why the US military deployed napalm shortly after its creation.

Napalm in World War II (1943-1945): the first deployments

Napalm was deployed for the first time in the battlefield of Papua New Guinea, on 15 December 1943 with flamethrowers. The US military then delivered more and more napalm through aerial attacks, first in the Pacific (15 February 1944 near the Pacific Island of Pohnpei) and six months later in Europe (in the immediate aftermath of D-Day). Rapidly napalm reappeared in the Pacific: more than 2/3 of the napalm deployed by the US during WWII (14,000 tons) was dropped there, much of it during the Tokyo attack considered by Curtis LeMay as “the most devastating raid in the history of aerial warfare”, on 9 March 1945, which killed an estimated 84,000 civilians, wounded 90,000 of them and destroyed more than a quarter of the entire city.⁸ The bombing of Tokyo, and eventually the destruction of 64 Japanese cities (with incendiary raids starting on 10 March 1945), exceeded the “greatest conflagration of the western world” during WWII, and, is viewed by certain historians, as more costly than the nuclear bombing of Hiroshima and Nagasaki.⁹ Because studies of WWII generally focus on the European theater, napalm is rarely depicted as a decisive weapon of WWII. Moreover, because the weapon was only deployed at the end of the conflict, the total quantity of napalm delivered during WWII (14,000 tons) only represents 17% of incendiary weapons (IW) deployed by the US during WWII. Because the US was the only

state to have napalm during the war and because it was not the heaviest user of incendiary bombers (the British Royal Air Force dropped twice as much as the US Air Force), napalm represented only 5% of the entire quantity of incendiary weapons deployed by the Allies during the conflict.



Firebombing of Tokyo, 1945

The Korean War (1950-1953): the number 1 weapon

Although napalm was used in several conflicts in the aftermath of WWII -- for instance in the Greek Civil War (1944-49) and Indochina (1946-54)¹⁰ --, these utilizations did not equal the quantity of incendiary weapons deployed by US planes during the short but devastating Korean War (1950-1953). Napalm was

delivered in such large quantities from the very first day, 26 June 1950, to the extent that the New York Herald Tribune provided this provocative headline in October 1950: "Napalm the No. 1 Weapon in Korea".¹¹ As the Stockholm International Peace Research Institute reported, "a total of 32,357 tons of napalm fell on Korea, about double that dropped on Japan in 1945. Not only did the allies drop more bombs on Korea than in the Pacific theater during WWII - 635,000 tons versus 503,000 tons - more of what fell was napalm, in both absolute and relative terms."¹² At this time, napalm was regarded as a very efficient weapon to achieve area or strategic bombing, that is bombing which not only targeted a tactical infrastructure or position but covered the whole area surrounding the target.



Bombing of village near Hanchon, North Korea, 10 May 1951.

Between the Korean and Vietnam Wars (1953-1961): the weapon of attrition

In the period following the Korean War (1953) and preceding the Vietnam War (1961), napalm reappeared twice on the battlefield, in Algeria and in Cuba. There is no official record of this, but several testimonies of journalists, and even militaries on the ground, acknowledge that

napalm was used and produced in the French bases during the Algeria War (1954-1962). The French were trained by US pilots to deploy napalm from the air.¹³ Some argue that napalm may have destroyed two thirds of the entire Algerian forest.¹⁴ The second major napalm display on the battlefield occurred in Cuba, from 1956 to 1959 and again in 1961: the Batista regime reportedly used significant quantities of napalm against Castro's rebel troops. Incendiary weapons -- especially napalm -- became a weapon of choice for destroying infrastructure and resources to break the morale and undermine support for rebels.

The Vietnam War (1961-1973): napalm at the core of the bombing strategy

The first known deployment of napalm during the Vietnam War occurred on 27 February 1962. Two South Vietnamese pilots trained by the US, dropped napalm on North Vietnamese positions. By 1966, napalm was a core element of the bombing strategy.¹⁵

After 1962, the quantity of incendiary weapons and napalm rapidly reached new levels: "about 388,000 tons of US napalm fell on Indochina in the decade from 1963 to 1973, compared to 32,357 tons used on Korea in just over three years and 16,500 tons dropped on Japan in 1945." Indeed, "all the munitions, including incendiary, were used in quantities two or three times the total used by US forces in WWII."¹⁶ From 1964, napalm-B, conceived to ignite more easily and continue to blaze over a longer period of time, was massively deployed in both North and South Vietnam. The peak of displayed napalm was reached in April 1972. The last US troop withdrawal occurred in 1973, after almost ten years of continuous bombings with napalm: "South Vietnam, despite the assistance of perhaps 400,000 tons of napalm dropped on its behalf, surrendered on April 30, 1975. Napalm, and with it America, had lost its first war."¹⁷



After the Vietnam War (1973-2011): the disgrace

After Vietnam, napalm was used in several wars, especially in the 2000s in Afghanistan and Iraq. The US military acknowledged recently that many MK77 bombs had been used during these wars. Even though these bombs were not called napalm, their incendiary properties are very similar. If MK-77 and napalm have a different name, only a slightly different distribution of constituents makes napalm different from the liquid contained in MK77. Effects and military advantage are considered identical.¹⁸ When a prominent American general was questioned on the presence of MK77 on the battlefields of Afghanistan, he replied that the US Army was not using the "old napalm" but "a new form of napalm".¹⁹ This illustrates two interesting points. First, the US military still uses napalm, but in much lower quantity: this supports the fact that the weapon - and the strategy of attrition which aims at massively destroying military but also civilian infrastructures and resources - is perceived as being tactically effective. This seems particularly true for counterinsurgency, where those who fight are hard to identify and hide among civilians.²⁰ Second, the military deployed a new label (MK77) to designate napalm, underlining the high level of opprobrium attached to the weapon. The military prefers not to explicitly mention the name napalm out of concern for

public opinion.²¹

The framing of napalm by the US military: from the ideal weapon of attrition to a liability

In order to understand why napalm fell into disgrace in the eyes of the military after the Vietnam War, and why the military questioned its strategic utility, it is first crucial to understand variations in the aerial attack doctrine. A weapon can never be studied ex nihilo, apart from the doctrine that promotes – or impedes – its deployment. In this case, napalm cannot be dissociated from the aerial bombing doctrine.

Strategy of attrition versus precision bombing

If the practice of aerial bombing was marginal before the massive German incendiary attacks of the Spanish Civil War (notably, Guernica), they had preoccupied militaries since the 1910s, and many of them tried to formulate the best aerial strategic doctrine. The debate over the best aerial strategic doctrine, that is the most efficient way to bomb the opponent, can be roughly divided into two positions: those who favor the attrition strategy (i.e. the sustained process of wearing down an opponent so as to force collapse through continuous losses in personnel equipment and, eventually, breaking their will to fight) and those who favor the restraint strategy (i.e. a population-centered approach that acknowledges the necessity to regulate practices of war to protect civilians). Of course, for the actors, these two positions are less two opposing stances than the two poles of a continuum: depending on the context and the opponent, the level of destruction or restraint can vary substantially.²²

The attrition strategy

Following the precepts of Giulio Douhet, proponents of the strategy of attrition contend that the air bombings have to strike two

targets. They first have to strike civilians, preferably with maximum destructive power in order to break their morale and eventually lead them to stop supporting their government and their military. They also believe that destroying ‘strategic resources’ will eventually constrain states, rendering them unable to sustain the war efforts, to capitulate.²³ They also have to target plants which provide crucial resources for waging war, roads and railroads, and everything which allows the opponent to sustain the fight, in order to force him to capitulate. The bombing must be massive, in order to both demonstrate the superiority of the bombing capacity and to precipitate the opponent’s collapse.

Weapons used to achieve attrition strikes generally have huge firepower with the capacity to destroy resistant infrastructure: after WWII and before the Vietnam War if the majority of European states used thermite and explosive bombs to realize attrition strikes, the United States designated napalm, soon after its invention, as the core weapon of its massive incendiary bombings.

The restraint strategy

Proponents of precision bombing and restraint strategy criticize the two core assumptions of the attrition strategy. While both strategies advocate tactical strikes (i.e. strikes on targets such as weapons plants, railroads, bridges with immediate military utility), proponents of the precision strategy favor the use of weapons with moderate firepower, that will not destroy the entire area and will be less likely to kill civilians or destroy infrastructure surrounding the target. Two reasons explain this position: first, strikes with moderate firepower help the state conserve resources and men. Second, massive bombings, rather than breaking the morale of civilians and combatants, often reinforce their determination to fight. The strategy of attrition is more likely to create collateral damage, in which infrastructures and

civilians who were not primarily targeted by the strike are destroyed, wounded or killed because of their proximity to the target. Collateral damage generally reinforces the determination to fight.

Vietnam: the ethical turn and the end of the strategy of attrition

Several factors could explain the shift, from the development of new precision bombing strategies to pressure from civil society to reduce civilian deaths. Clearly, many in the US military became more skeptical of the efficiency of attrition strategies after the Vietnam War. Consequently, the reputation of the napalm as a tactical asset was undermined.

From 1945 to the Vietnam War, many in the military regarded napalm as an effective weapon of war. Curtis LeMay, the Air Force general who devised an effective strategy for firebombing including the use of napalm against Japan repeatedly advocated incendiary bombings on the ground that “the whole purpose of strategic warfare is to destroy the enemy’s potential to wage war”.²⁴

Yet, the apparent consensus over the ‘normality’ of napalm seemed to have changed during the Vietnam War following repeated aerial attacks on civilians with napalm. Some soldiers felt a strong repulsion against napalm, specifically the odor of skin burnt by it. This odor haunted many of them after the Vietnam War.²⁵ Because they sometimes flew close to the ground, pilots saw the terrible effects of the weapon, leading some to condemn it as inhumane. Curtis LeMay described the response of some of his men: “We killed civilians, friendly civilians, and bombed their homes, fired whole villages with the occupants, women and children, and ten times as many hidden communist soldiers, under showers of napalm, and the pilots come back to their ships, stinking of the vomit twisted from their vitals by the shock of what they had to do.”²⁶

Of course, napalm did not suddenly become an inhumane means of warfare in the eyes of US military officers after the Vietnam war: they rather started to believe that the terrible effects the weapons inflicted on the targeted populations ultimately outweighed the limited strategic advantage of the weapon. Also, a broader change in attitudes regarding civilian harm in warfare occurred following the American defeat in Vietnam.²⁷ Matthew Evangelista perfectly summarizes the long-term changes in the way the United States and its allies came to approach strategic bombing:

“The norms governing bombing -- and particularly the harm it imposes on civilians -- have evolved considerably over a century: from deliberate attacks against rebellious villagers by Italian and British colonial forces in the Middle East to institutionalized practices seeking to avoid civilian casualties in the U.S. counterinsurgency and antiterrorist wars of today. In between, the strategic bombing campaigns of World War II caused great civilian destruction through fire-bombing of cities and, ultimately, the atomic attacks against Hiroshima and Nagasaki.”²⁸

Changing legal norms and collective perceptions: the framing of napalm as an illegitimate and illegal weapon after the Vietnam War

Napalm bombings not only “epitomized” the strong skepticism and criticism attached to the attrition strategy and the escalation of violence it created in the Vietnam War. It also became for many activists a symbol, not only of an inhumane war, but also of the inhumanity of certain means of warfare that violate the laws of war.

Napalm and the domestic population: from indifference to indignation

If several members of the United Nations started to seriously address the issue of napalm in 1970, at the very end of the Vietnam conflict,

US domestic critics had already begun to protest against the weapon's use as early as 1966. This domestic pressure against napalm took a variety of forms, from large demonstrations and teach-ins to demonstrations against the Dow Corporation which produced the napalm used in Vietnam.

Many opponents of the Vietnam War started to specifically denounce the use of napalm by the US military. One reason for this is that napalm was associated in the popular imagery with terrible injuries and suffering to civilians, especially children. The first images of babies and children hit by napalm started to circulate in 1964 through mass circulation magazines. If they did not trigger a particular reaction in 1964, this started to change after 1967, as protesters were often seen brandishing these pictures. These images contributed to the perception that napalm was an inhumane weapon. One image, particularly captured the attention of Americans and citizens of many other countries: the Pulitzer Prize winner 'Accidental napalm' (Available [here](#))

'Accidental napalm'

Napalm, like the atomic bomb, is one of a few weapons tightly attached to one specific representation in the public imagination. This is the picture taken by Nick Ut on June 8, 1972, in a South Vietnamese village hit by an aerial attack of napalm. The photo was published in the New York Times and won the Pulitzer Prize the same year. It circulated worldwide and was frequently brandished during anti-war demonstrations next to the placard "napalm sticks to kids". This picture achieved a status as a "public icon", representing not only the cruelty of the Vietnam War, during which many civilians were deliberately targeted, but the inhumanity of war in general.²⁹

Retracing the history of the picture is particularly interesting as it reveals how the collective imagery creates and shapes symbolic pictures. Ut's photograph is commonly thought

of as representing a US napalm strike against a Vietnamese village. This is only partially true: it was in fact a South Vietnamese, not a US, pilot who dropped napalm on the village. Of course, US pilots trained the South Vietnamese pilots and provided napalm. They therefore have a full responsibility for the terrible suffering created by napalm, but they did not launch the attack on the village. Moreover, the village was not the initial target of the South Vietnamese pilots: they were supposed to hit another village suspected of hosting opponents. This mistake was underlined with the words chosen for the title of the picture ('accidental'). The fact that the destruction of the village with napalm was neither originally planned nor led by US pilots does not mitigate the gravity of the attack.

Regardless, the image captures something essential at the core of the denunciation against napalm: the fact that the weapon, because of its firepower and capacity to ignite rapidly and for a long time, was also used as a tool to terrorize and hurt civilians. The US military first denounced the picture, but later engaged in a 'war of images': the US Army organized a photo display of the very same child burnt by napalm (by then an adult called by her name Kim Phuc), together with a US pilot allegedly responsible for the napalm attack on her village: John Plummer.³⁰ In this photograph, called "Meeting at the Wall" we see both Plummer and the child, now adult, sitting at the same table, smiling, reunited for the Veterans day celebrated at the Wall, that is the Vietnam Veterans Memorial located in Washington D.C..³¹ In any event, the picture remained relatively unknown, its impact never equaled that of the Pulitzer Prize picture.³²

The opprobrium

Soon after 1966 a certain repugnance emerged not only against napalm, but also against those who were associated with it. While Louis Fieser was awarded several medals for having

contributed to the creation of napalm in the 1950s, the situation radically changed for him after 1966. He was then repeatedly criticized for his role in the development of napalm. Everything changed for the Dow Corporation (i.e; the producer of the napalm used in Vietnam) in 1968. Students refused to apply for jobs there; religious groups protested against it, important universities refused it access to student job fairs. This ultimately led the company to cease napalm production in 1969. Yet, even now, the company is still tainted producing napalm.

By the late 1960s, the status of napalm had changed fundamentally in the popular imagination. Napalm was no longer just a weapon. Rather it had become a weapon targeting children or a weapon exemplifying the violence exerted by the US in Vietnam both in the US and internationally. In sum, the Vietnam War transformed napalm into an object “vested with a strong social power which goes beyond its material capacity”³³. Napalm became a symbol.

Anthropological fear

The opprobrium attached to napalm also derives from the intense fear that the weapon provokes not only to those who are exposed to it, but to those who observe its effects. Napalm burns to the bone but does not cause bleeding: persons hit by napalm die most often because of internal hemorrhage, suffocation or intense burns. The same type of effects can be observed in people exposed to chemical or biological agents. Yet, several authors who studied chemical weapons believe that these weapons which kill without causing bleeding would create an intense fear for they would blur the founding anthropological barriers of our societies between women (who bleed from the inside) and men (who bleeds outside)³⁴. According to them, this would represent an ‘anthropological transgression’ that would ultimately provoke an ‘anthropological fear’

because it would destroy the symbolic division between the sexes, yet at the core of every community.³⁵

The intense fear might also be created by the fact that napalm kills without offering the possibility for the soldier to demonstrate his heroic qualities. For the same reasons as with chemical weapons, napalm is an anti-chivalric weapon: bravery, engagement and heroism cannot save the combatant.³⁷ Combatants become anonymous soldiers who can potentially be killed in terrible suffering at any time, without having the time to prove their skills or their bravery. Several testimonies of soldiers, but also of military historians tend to support this argument. Robert Neer mentions the Soldier James Ransone who wrote, after having seen his own men accidentally hit by napalm: “Where the napalm had burned the skin to a crisp, it would be peeled back from the face, arms, legs... like fried potato chips. Men begged to be shot. I couldn’t (shoot them)”.³⁸

Making napalm illegal: the decisive role of Secretary General U Thant in framing napalm as illegal



U Thant

The repeated use of napalm to terrorize civilian populations in Vietnam, shed light on the dual necessity to reinforce the legal rules which frame this destructive weapon and to condemn the United States for the terrible violence in Vietnam. The emergence of incendiary weapons on international consciousness was the result of their use in Vietnam War. Secretary General U Thant was alerted to the problematic aspect of napalm during the Teheran Conference (1969) which investigated the need for additional humanitarian international conventions to prohibit certain means of warfare that threatened civilians and the environment. He was also deeply concerned with the situation in Vietnam and wanted to limit the terrible exactions committed by the United States (inter alia, the use of agent orange³⁹, the massacre of civilians and the deployment of napalm). According to a press release of 19 May 1972 by Secretary General Kurt Waldheim, who concluded the movement

initiated by U Thant, U Thant said: “ You are aware that during the last two weeks I have publicly expressed my deep concern about the Vietnam conflict. For reasons which are no doubt clear to all of you, the UN has still not been able to play the role that I feel it should in contributing towards a solution of this problem. In the past the UN repeatedly was criticized for not dealing actively with the war in Vietnam. As you are aware, I have recently taken the step of presenting a memorandum to the President of the Security Council.”⁴⁰

Framing napalm at the international level

On 22 September 1972, the UN General Assembly met for the Conference of the Committee of Disarmament, whose goal was to discuss how the existing rules framing the use of conventional weapons (i.e. weapons which are not chemical, biological or nuclear) could be reinforced or modified. These discussions eventually led to the creation in 1980 of a new convention called the Convention on Certain Conventional Weapons (CCCW), Napalm was one of the main topics on the agenda.

When this conference opened, there was little statistical data available on incendiary weapon, especially compared with extensive data on chemical, biological and nuclear weapons: only one report, commanded by U Thant called “Napalm and Other Incendiary Warfare and All Aspects of Their Possible Use: Report of the Secretary General,” existed. Yet it provided a good overview of the trajectory of napalm utilization and the technical characteristics of the weapon.⁴¹ The report pictured napalm as a weapon which was used indiscriminately against civilians, and which has tremendous incendiary power. If the report does mention “other incendiary weapons”, such as white phosphorus, it refers to them only very briefly, showing that napalm, since its use in Vietnam, remained the most ‘urgent’ incendiary weapon to frame. The report concluded “that the use of napalm - for it was to this weapon that

attention was principally given- ought to be forbidden but was not yet prohibited by general international law."⁴²

Rapidly, experts who worked on the issue started to disagree on two points. First, they questioned the nature of the legal constraints imposed on napalm: should napalm be banned from the battlefield or should the conditions of its use be redefined more precisely? Second, they disagreed on the target of the legal constraint: should napalm or the broader category of incendiary weapons be the object of legal constraints? If napalm is explicitly mentioned, the legal treaty might be regarded as too restrictive, and therefore not very constraining (the state can find a weapon with a different name but with very similar effects). On the other hand, the lack of consensus on the definition of incendiary weapon (i.e. should the weapon be defined as incendiary in light of its effects, of its composition, or of its delivery conditions?) could create a grey area that states could exploit to keep using weapons which share many characteristics with napalm.

Protocol III of the Convention on Certain Conventional Weapons (CCCW)

Discussions continued with the help of the International Committee of the Red Cross, which organized the preliminary conferences of Lucerne (September 1974) and Lugarno (January 1976). These two conferences helped to produce additional documentary basis on the effects and the legal issues raised by napalm. In 1979, an agreement was reached and Protocol III also called 'Protocol on Prohibitions or Restrictions on the Use of Incendiary Weapons' was formalized⁴³.

The consensus reflected in Protocol III was to keep the generic term "incendiary weapon" rather than explicitly mention napalm,⁴⁴ and to limit its utilization rather than ban it from the battlefield. It reiterates the principle of distinction, that is the prohibition, in all circumstances, of attacking the civilian

population as such, individual civilians or civilian objects with incendiary weapons. It forbids the use of incendiary weapons on the ground when directed against military objectives not clearly separated from civilians. It also reiterates the necessity to take all feasible precautions when incendiary weapons are deployed (from the ground or through air delivery) to limit the incendiary effects to the military objective and to avoid incidental loss of civilian life, injury to civilians and damage to civilian objects. Finally the Protocol prohibits the use of incendiary weapons against forests or other kinds of plants – except if such natural elements are used to cover, conceal or camouflage combatants or other military objectives, or are themselves military objective. In sum, Protocol III does not deem the use of napalm as always illegal: yet, it warns of its use against civilians or close to civilians areas.

In Geneva, the CCCW (and with it Protocol III) was adopted by consensus on 10 October 1980. On 10 April 1980, the CCCW was opened for signature: 50 states signed the Convention that entered in force on 2 December 1983. Today, 121 states are parties to the Convention. The US finally ratified it in 2009, but with a reservation : it retains the right to use incendiary weapons against military objectives located in concentrations of civilians where it is judged that such use would cause fewer casualties and/or less collateral damage than alternative weapons. While this reservation reiterates the principle of all feasible precaution, it also extends the right of the US to use incendiary weapons as the latter remain less destructive than many other weapons in the arsenal, such as thermite bombings or small nuclear weapons.

Conclusion

This article offers new perspective on the shift in US military doctrine and practice of bombing and the subsequent decrease in napalm utilization: napalm was framed after the

Vietnam War as an inhumane means of warfare by activists, as a problematic weapon with regard to the laws of war by the United Nations and, finally, as a non-strategic weapon by the US military.

The proposed approach of this article, which emphasizes normative aspects commonly overlooked when it comes to understanding practices of war (i.e. legitimacy, symbols and laws of war) helps to gain a full understanding of variations in weapons utilization. More generally, it shows that the historiography of bombing can be enriched by the historiography of the weapons deployed.

In this respect, it pursues the line of some major works that demonstrated the necessity to study the social history of a weapon in order to understand why and when weapons were

deployed.⁴⁵ Because weapons and their technical characteristics are always considered and evaluated through a prism of perceptions built upon collective representations, it is crucial to study how these collective perceptions are created and change over time. A closer examination of the social science literature reveals that these perceptions often shift because some actors (activists but also international institutions) mobilize and frame the weapon differently: several prominent works have depicted how chemical, nuclear weapons or even landmines have been at a particular time of history denounced as terrible means of warfare.⁴⁶ The framing - and stigmatization - of napalm in this regard is not a unique case but long remained a blind spot in the existing literature.

SPECIAL FEATURE

Perspectives on the Bombing of Civilians From World War II to the Present

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Marine Guillaume, Columbia University and Sciences Po, PhD. Analyst on Security issues, in the Policy Planning Department of French Foreign Affairs Ministry.

Notes

¹ This is explained in NEER, Robert M. *Napalm An American Biography*. Cambridge; MA and London; England: Harvard University Press, 2013. p195, Robert Neer quotes the interesting reference to Louis Fieser made in the Harvard official Gazette of 1977 “Louis Fieser was a distinguished researcher whose career included work on antimalarial agents, cortisone and vitamin K-1”.

² See NEER, Robert M. *Napalm An American Biography*. p195.

³ This definition of attrition strategy is drawn from the International Encyclopedia of the First World War. It echoes the definition of the Jominian culture of annihilation as defined by Kahl, which holds ‘the application of direct and overwhelming force to destroy the enemy and achieve victory’: it implies that politics reasserts itself only after the complete destruction of the adversary on the battlefield; it is a capital-intensive approach that relies on the use of overwhelming firepower; a disdain for unconventional skills and tactics in KAHL, Colin H. “In the Crossfire or the Crosshairs?” *International Security* 32, no.1, Summer 2007:7-46.

⁴ Martin Cook explains how the US military tried to draw lessons from the Vietnam War even leading some to resign. See for example the testimony of General Harold K. Johnson who declared to the President “You have refused to tell the country they cannot fight a war without mobilization; you have required me to send men into battle with little hope of their ultimate victory; and you have forced us in the military to violate almost every one of the principles of war in Vietnam.” See COOK, Martin. “Revolt of the Generals: A Case Study in Professional Ethics” *Parameters*, Spring, 2008

⁵ The development of Unarmed Aerial Vehicles or the promotion of new rules of engagement asking for rigorous actions to avoid hurting civilians. Yugoslavia War in the 1990s is an example of conflict during which the US (and NATO) applied this strategy.

⁶ rev. ed. New York: Meridian, 1991.

⁷ STOCKHOLM INTERNATIONAL PEACE RESEARCH INSTITUTE, *Incendiary Weapons*, A SIPRI Monograph. Cambridge, Mass: MIT Press, 1975.

⁸ See NEER, Robert M. *Napalm An American Biography*. Cambridge; MA and London; England: Harvard University Press, 2013. p195. See [here](#).

⁹ STOCKHOLM INTERNATIONAL PEACE RESEARCH INSTITUTE. *Incendiary Weapons*. A SIPRI Monograph. Cambridge, Mass: MIT Press, 1975.

¹⁰ See CHASSIN, Lionel Max. *Aviation Indochine*. Amiot-Dumont, 1954.

¹¹ See NEER, Robert M. *Napalm An American Biography*..

¹² See STOCKHOLM INTERNATIONAL PEACE RESEARCH INSTITUTE. *Incendiary Weapons*.

¹³ Interview with General Robineau, 19/05/2014.

¹⁴ See NEER, Robert M. *Napalm An American Biography*.

¹⁵ See STOCKHOLM INTERNATIONAL PEACE RESEARCH INSTITUTE. *Incendiary Weapons*.

¹⁶ See NEER, Robert M. *Napalm An American Biography*.

¹⁷ See NEER, Robert M. *Napalm An American Biography*. This is equivalent to the overall quantity of napalm procured by the US from 1964 to 1973

¹⁸ Many chemists agree that the new distribution of elements constituting napalm is essentially identical to the distribution of the previous generation of napalm. They consider the effects, such as the capacity to ignite, identical and even superior to the previous type of

napalm. As a weapon is categorized depending on its effects, I consider MK77 comparable to napalm. I will elaborate on this point below.

¹⁹ In response to a report by Al-Jazeera on December, 14, 2001 that blamed the US for using napalm during the battle of Tora Bora, General Tommy Franks replied “We’re not using the old napalm in Tora Bora”.

²⁰ In this context, the very status of combatant is also extremely hard to define.

²¹ The practice of renaming a weapon in order to avoid the opprobrium attached to it has been studied by several authors interested in taboos attached to weapon. See Price, Richard M. *The Chemical Weapons Taboo*. Ithaca, N.Y.: Cornell Paperbacks, 2007 and Tannenwald, Nina. *The Nuclear Taboo: The United States and the Non-Use of Nuclear Weapons*. Cambridge University Press, 2007.

²² The two strategies are not necessarily exclusive: both can be used depending on the timing of the war, whether war is at its beginning or at its final days. For example, during WWII, certain US Commanders favored a ‘precision bombing strategy’ at the beginning of the conflict, and the Joint Chief of Staff repeatedly ordered commanders to avoid massively bombing civilian areas. This changed in the final years of the conflict wherein the attrition strategy was widely used in aerial attack. See BIDDLE, Tami Davis. *Rhetoric and Reality in Air Warfare: The Evolution of British and American Ideas about Strategic Bombing, 1914-45*. Princeton Studies in International History and Politics. Princeton N.J: Princeton University Press, 2002

²³ Certain military strategists even advocated targeting incendiary weapons against poor neighborhoods of big cities: because the buildings were close to each other and because they housed a high density of population (especially a population which directly contributed to the war effort by working in factories), they were ‘ideal targets’ for the annihilation strategy.

²⁴ See LEMAY, Curtis. *Mission with LeMay: My Story*. Doubleday, 1965.

²⁵ The specific odor of napalm was memorably recalled in *Apocalypse Now*, a movie directed by Francis Ford Coppola (1979), through the very famous monologue “I love the smell of napalm in the morning(...) it sounds like victory, like the war is going to end.”

²⁶ See LEMAY, Curtis. *Mission with LeMay: My Story*. .

²⁷ See also CRAWFORD, Neta C., *Accountability for killing: Moral responsibility for Collateral Damage in America’s Post 9/11 Wars*, Oxford: Oxford University Press, 2002.

²⁸ See EVANGELISTA, Matthew. “Introduction, The American Way of Bombing.” In *The American Way of Bombing: Changing Ethical and Legal Norms, from Flying Fortresses to Drones*, edited by SHUE, Henry, and EVANGELISTA, Matthew. Ithaca ; London: Cornell University Press, 2014.

²⁹ See HARIMAN, Robert, LUCAITES. John Louis, 2007. *No caption needed : iconic photographs, public culture, and liberal democracy*. Chicago: University of Chicago Press.

³⁰ In fact, Plummer was not responsible for the attack, and the US Army knew it. See HAGOPIAN, Patrick. *The Vietnam War in American Memory: Veterans, Memorials, and the Politics of Healing*. 1. paperback printing. Amherst, Mass: Univ. of Massachusetts Press, 2011.

³¹ See CHONG, Denise. *The Girl in the Picture: The Kim Phuc Story*. New York: Penguin, 2001.

³² The picture ‘Meeting at the Wall’ can be seen in NEER, Robert M. *Napalm An American*

Biography.

³³ This definition inspired by Pierre Bourdieu is given in O'NEILL, Barry, *Honors, Symbols and War*, Ann Arbor: University of Michigan Press, 1999.

³⁴ See also PRICE, Richard M., *The Chemical Weapons Taboo*, Ithaca, NY: Cornell Paperbacks, 2007

³⁵ The historian Audoin-Rouzeau notably quotes anthropologist Françoise Héritier who agrees with the fact that the fundamental distinction between men and women, which justifies the exclusion of women from the battlefield, is the fact that they already bleed from the inside in AUDOUIN-ROUZEAU, Stéphane, 'Mourir par les Gaz: Une Transgression Anthropologique?' in *Gaz!gaz!gaz!: la guerre chimique, 1914-1918*, ed. by HISTORIAL DE LA GRANDE GUERRE (MUSEUM), LEPICK, Olivier, AUDOUIN-ROUZEAU, 1914-1918. Péronne; Milan:Historial de la grande guerre; 5 continents, 2010.

³⁷ See the development of chemical weapons as an anti-heroic weapon in my dissertation, GUILLAUME, Marine, *Fighting justly in the XXth Century*, 2015

³⁸ See NEER, Robert M. *Napalm An American Biography*.

³⁹ The agent orange is an herbicide and a defoliant used as a means of warfare, notably by the United States during the Vietnam War

⁴⁰ See UN archive SG/SM/1964/ORG/714.

⁴¹ See UNITED NATIONS GROUP OF CONSULTANT EXPERTS ON NAPALM AND OTHER INCENDIARY WEAPONS, ROLF BJÖRNERSTEDT, United Nations Secretary General. 1973. *Napalm and other incendiary weapons and all aspects of their possible use: report of the Secretary General, Number 16*. United Nations.

⁴² See NEER, Robert M. *Napalm An American Biography*.

⁴³ The CCCW was originally built open 3 Protocols: Protocol I on Non-Detectable Fragments; Protocol II on Prohibitions or Restrictions on the Use of Mines, Booby Traps and Other Devices; and finally Protocol III on Prohibitions or Restrictions on the Use of Incendiary Weapon. Today, the CCCW contains 5 Protocols (the Protocol IV on Blinding laser weapons entered in force on 1998 and the Protocol V on Explosive remnants of war entered in force on 2006).

⁴⁴ The definition of incendiary weapon seems to be framed so as napalm fits entirely with the category: it excludes many weapons (such as munitions in which the incendiary effects is not specifically designed to cause burn injury to persons) yet used in the battlefield

⁴⁵ See for example ELLIS, John, *The Social History of the Machine Gun*, John Hopkins paperbacks ed. Baltimore: John Hopkins University Press, 1986; ,See PERRIN, Noel, *Giving up the Gun: Japan's Reversion to the Sword, 1543-1879*, Boston: D.R. Godine, 1988. See also the extensive work of Graham Spinardi on nuclear weapon and social perceptions.

⁴⁶ A whole literature studying the concept of 'norm entrepreneurs' or 'moral entrepreneurs' studies this question. See for example PRICE, Richard, "Revering the Gun Sights: Transnational Civil Society Targets Land Mines", *International Organization*, 52, no3, Summer 1998: 613-44; EVANGELISTA, Matthew, *Unarmed Forces; The transnational Movement to End the Cold War*, Ithaca, NY: Cornell University Press, 2002; BUSBY, Joshua W., *Moral Movements and Foreign Policy*, *Cambridge Studies in International Relations* 116, NY: Cambridge University Press, 2010