

# Bombing Dual-Use Targets: Legal, Ethical, and Doctrinal Perspectives

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With the technological development of precision-guided munitions (PGMs), stealth technology, and satellite-aided navigation, aerial bombardment has become more precise than ever before. A US stealth fighter with a single, laser-guided bomb, for example, can now destroy a target that in WWII required 4500 B-17 sorties dropping 9000 bombs.<sup>1</sup> While this increased precision is a welcome development for air campaign planners wishing to apply the military principle of ‘economy of force,’ it has the added benefit of simplifying compliance with legal and ethical requirements to minimize ‘collateral damage,’ or the unintended bombing of non-combatants and non-military facilities.

One might think that this precision would silence all but the most pacifistic of airpower critics, shifting debate from *jus in bello* arguments of just and legal means of using airpower to the *jus ad bellum* regime of justifying force in the first place. Instead, the success of precision attack has highlighted a gray area within the *jus in bello* paradigm: the legitimacy of destroying targets, such as electrical power facilities, that impact both military operations and civilian lives. A key example of such dual-use targeting was the destruction of Iraqi electrical power facilities in Desert Storm. While crippling Iraq’s military command and control capability, destruction of these facilities shut down water purification and sewage treatment plants. As a result, epidemics of gastroenteritis, cholera, and typhoid broke out,<sup>2</sup> leading to perhaps as many as 100,000 civilian deaths and a doubling of the infant mortality rate.<sup>3</sup> Given such effects on non-combatants, are electrical power facilities legitimate military targets? Does airpower doctrine acknowledge, support, or condemn such indirect effects? Must air campaign planners weigh these indirect effects in their target selection process?

To answer these questions, this article analyzes the legitimacy of attacking dual-use targets from the legal, ethical, and military doctrinal perspectives. Following a short history of how each of these perspectives developed, the article outlines the current ‘position’ of each. After highlighting the differences between the three perspectives, the article then analyzes the prospects for future changes in their approaches to dual-use targets.

## I. International Law and Dual-Use Targets

Legal constraints on the permitted justification and means of waging warfare originated in the Christian Just-War Ethic (JWE) of the early Catholic church. Steeped in this ethical tradition, international lawyers of the 17<sup>th</sup> and 18<sup>th</sup> centuries such as Hugo Grotius and Emerich de Vattel transformed the ethic into a rudimentary body of international law.<sup>4</sup> Their path-breaking efforts culminated in the Hague Conventions of 1899 and 1907, the Geneva Conventions of 1949, and the 1977 Protocol I and II to the Geneva Conventions.

The seminal legal work on the issue of non-combatant immunity was Grotius’ *De Jure Belli ac Pacis*. As a passionate exponent of Christian charity, he believed those engaged in war should show restraint and compassion.<sup>5</sup> Since non-combatants were “innocent” regarding war, he

believed that attacking them showed viciousness, while sparing them commanded gratitude, affection, and admiration.<sup>6</sup> He also believed that since involving non-combatants in war brought no military advantage, room existed within the ethical and military traditions for codification of non-combatant immunity. He called for a solution balancing both humanitarian and military concerns when he wrote, "A remedy must be found for those who believe that in war nothing is lawful, and for those for whom all things in war are lawful."<sup>7</sup>

Continuing the evolution of international humanitarian law begun by Grotius, the 1899 Hague Conference declared a 5-year moratorium on "launching of projectiles and/or explosives from the air," which at that time affected only bombardment from balloons.<sup>8</sup> Presciently, American Army Captain William Crozier argued for the 5-year vice a permanent limit on the grounds that such bombing, while indiscriminate and ineffective in 1899, might one day prove an effective battlefield tool capable of making war shorter and more decisive.<sup>9</sup> Other efforts taken to limit aerial attack included adoption of articles 25 and 26, which prohibited bombardment of undefended towns and required the air commander to "do all he can to warn the authorities" before commencing a bombardment.<sup>10</sup> Both of these provisions proved susceptible to widely varying interpretations. One reason for this difficulty was scant agreement on what exactly defined "undefended towns." The other problem was lack of guidance on how to balance warning of impending attack with the military principle of surprise. As a result, skepticism as to the actual application of the articles, particularly within military departments, was high.

When the second Hague Conference met in 1907, successful development of air forces in Germany, France, and Italy greatly increased opposition to further limits on aerial bombardment.<sup>11</sup> They did however, agree to protect civilians against "indiscriminate" or "wanton bombardment" from the air as from the ground.<sup>12</sup> This restriction, like all in the Hague Conventions, was animated "by the desire to diminish the evils of war, so far as military requirements permit."<sup>13</sup> In other words, "military requirements" still took precedence. To emphasize this point, airpower advocates inserted language into Article 2 stating that commanders couldn't be held responsible for "any unavoidable damage which may be caused by a bombardment."<sup>14</sup> Presumably, the only prohibited bombing was that which caused avoidable damage contrary to military requirements.

Given the increased influence of airpower on war fighting during WWI and the interwar years, attempts were made to further limit bombing with the writing of The Hague Aerial Bombardment Rules in 1922. Although never adopted, these rules foreshadowed future legal efforts to protect civilian lives and property as well as to define military vice civilian targets.<sup>15</sup> Another interwar effort to limit bombing included a Draft Convention on Protection of Civilians in 1934, but its formal consideration was postponed on account of WWII. The firebombing of Tokyo and Dresden, area bombing in both theaters of war, and the dropping of the atomic bomb on Hiroshima and Nagasaki showed the consequences of the absence of a convention for the protection of civilians in wartime.<sup>16</sup>

The experience of WWII led to the 1949 Geneva Conventions, of which Convention IV dealt specifically with the protection of civilians in time of war. Ratified by the US and most countries of the world, Section I, Article 147 of the Convention requires prosecution of those who commit the following "grave breaches" against civilians in time of war: "willful killing," "willfully

causing great suffering or serious injury to body or health," and causing "extensive destruction and appropriation of property." Similar to the Hague Conventions' constraints, however, these restrictions only apply if "not justified by military necessity and carried out unlawfully and wantonly."

Several aspects of the Geneva Conventions require comment. One is the use of the word "willful" in regards to killing or causing suffering. In order to violate this article, one must deliberately intend to kill or cause suffering to civilians. In other words, if one really intends to destroy a military target that resides in an urban area, and civilians happen to die or be hurt as a result of poor aiming, mistaken target coordinates, inaccurate bombs, etc., this isn't technically a violation as it isn't a willful attack upon the civilians. If the destruction is avoidable however, presumably through better weapon selection, tactics, etc., then the commander could still be held liable under Article 2 of the 1907 Hague Conventions (see above).

Another word open to interpretation is "extensive," as in "extensive destruction." What exactly does it mean? Would the firebombing of Tokyo, in which 15.8 square miles were burned to the ground,<sup>17</sup> count as extensive destruction? One would think so, but without some specific reference point, determining where to draw the line between extensive and acceptable destruction is difficult at best. Perhaps that is why the last line of Article 147, similarly to the Hague Conventions, offers a loophole big enough to drop a nuclear weapon through: the aforementioned constraints only apply if "not justified by military necessity and carried out unlawfully and wantonly." What does this mean?

"Military necessity" is the "principle which justifies measures of regulated force not forbidden by international law which are indispensable for securing the prompt submission of the enemy, with the least possible expenditures of economic and human resources."<sup>18</sup> In simpler terms, military necessity means that if one is justified in going to war, one is justified in doing what is necessary to win.<sup>19</sup> The problem with military necessity is that without another legal principle to balance against it, it essentially allows blanket justification for violations provided a case can be made that the action taken was necessary to win. Even if a particular action is not justified by military necessity, it still must be "wanton," or maliciously cruel, to be a violation. Clearing the hurdles of military necessity and wantonness is difficult, making actual prosecution for unlawful bombing unlikely. One could retroactively argue, for example, that the Tokyo firebombing was justified under the Geneva Conventions because of military necessity: it was the only effective way to destroy Japanese industry and win the war. In other words, the very sort of attacks that the Geneva Conventions attempted to prohibit might still be legal under the principle of military necessity.

To close some of these and other loopholes related to protection of victims of international armed conflicts, the International Committee of the Red Cross submitted Protocol I of the Geneva Conventions to the international community in 1977. While 150 states, including the US, have signed Protocol I, the US has not yet ratified it nor has it agreed to apply its provisions to nuclear weapons.<sup>20</sup> Signing the protocol doesn't bind the US, but it does oblige the US to behave in a way that does not render the substance of the treaty meaningless.<sup>21</sup>

Under Part IV, Section I, Chapter II, Article 51 (Protection of the civilian population), it states that the following rules "shall be observed in all circumstances," and nowhere does it refer to blanket military necessity. It states that civilians shall not be the object of attack, nor can attacks be made with the primary purpose of terrorizing civilians. It further requires an attacker to refrain from launching any attack that "may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated." It prohibits "indiscriminate attacks," generally defined as those that strike military objectives and civilians or civilian objects without distinction. It further specifies indiscriminate attacks as those not directed at a specific military objective, those which employ a means which can't be directed at a specific military objective, or those which employ a means the effects of which cannot be limited as required by the Protocol. Finally, Protocol I requires that "all feasible precautions" be taken to avoid and minimize civilian casualties and that advance warning shall be given of attacks which may affect the civilian population, circumstances permitting.

The Protocol specifies two types of attacks that are considered indiscriminate. One is an attack that treats a number of clearly separated and distinct military objectives as one when they lie in an area containing concentrations of civilians or civilian objects. The other is an attack that may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination of the three, that would be excessive relative to the concrete and direct military advantage anticipated.

To summarize, Protocol I articles prohibiting indiscriminate attacks are much more restrictive than both The Hague and Geneva Conventions. Under Protocol I's provisions, such indiscriminate civilian attacks as firebombing, area bombing, and the dropping of atomic bombs are all illegal. While one could argue that such attacks were already illegal based on treaty and customary law, the codification of the principle of military necessity could always trump the prohibitions. Protocol I makes no reference to military necessity, and in fact requires that the prohibitions "shall be observed in all circumstances." This doesn't mean, however, that any incidental killing of civilians is illegal. Protocol I formally codifies the principle of proportionality, which requires that incidental civilian death, injury, and property destruction not be "excessive in relation to the concrete and direct military advantage anticipated." While The Hague and Geneva Conventions referred to "military requirements" and "military necessity," these principles were subject to broad interpretation. Protocol I's requirement for "concrete and direct military advantage" is a much higher standard of proof than blanket military necessity.

Now that we know what the law says, how does it affect attack of dual-use targets? The answer depends on whether or not one applies Protocol I restrictions. If the US were bound by Protocol I, a case can be made that such attacks are illegal, but the issue is very subject to interpretation. Let us consider the case of an attack upon an adversary's electrical system. Presuming that the justification of the attack is to destroy or degrade the adversary's military capability, then civilians are neither the "object of attack" nor is the primary purpose of the attack to "terrorize" them. Nevertheless, such an attack may violate Protocol I's provisions if it is indiscriminate and/or if the incidental civilian effects are disproportionate to the concrete and direct military advantage of the attack. One can argue that such an attack is indiscriminate because it employs a method or means of combat (strategic attack of electrical generation facilities) the effects of

which cannot be limited to the purely military objective. As a result, such an attack does not distinguish between military and civilian effects. Given this secondary, incidental effect upon civilians, one must apply the rule of proportionality, weighing the incidental effects on civilians with the concrete and direct military advantage the attack gives. Here there is divergence of views.<sup>22</sup> The more restrictive view is that only direct civilian injuries, deaths, or destruction, namely those that occur immediately as a direct result of the attack (for example, from the explosion itself), should be considered. The second view is that all indirect civilian effects, namely those that occur over time as an indirect effect of the attack (for example, from loss of electricity) should also be considered. If one accepted the indirect view, then it might be very difficult to find a concrete and direct military advantage that outweighed the tens of thousands of civilian deaths that might be indirectly caused from loss of electricity. On the other hand, if one accepts only the direct view, such attacks would be very easy to justify provided one uses precision methods of attack. In sum, if one is bound by Protocol I, the legality of attacking dual-use targets is very much a matter of interpretation, as the disparity in views between the direct and indirect civilian effects creates a vast gray area in the law.

If a state is bound by The Hague and Geneva Conventions but not Protocol I (like the US, for example), then the case against attack of dual-use targets is even weaker. Precision attack on an electrical facility doesn't rise to the level of "indiscriminate" or "wanton" destruction specified by The Hague and Geneva Conventions. Nor does it count as "willful killing" or "willfully causing great suffering or serious injury" to civilians because the harm to civilians is incidental to the military objective. Even if the incidental harm to civilians is significant, allowance for military necessity essentially neuters the civilian protections of the Conventions.

## II. The Just War Ethic and Dual-Use Targets

The Just War Ethic (JWE) is the culmination of over 1500 years of religious and philosophical thought on the morality of war. Commonly referred to as Just War Theory, the JWE is actually an evolving body of thought, or a tradition, rather than a monolithic theory for ethically waging war. Begun with the writings of Augustine in the early Middle Ages, the ethic laid out basic principles of *jus ad bellum*, or just recourse to war, and *jus in bello*, just conduct in war. As this article deals with the questions of means and methods of aerial attack, it will focus primarily on the development and application of *jus in bello* principles.

The JWE, grounded in Christianity, became the underpinning for the law of armed conflict as codified by Grotius and others in the 17<sup>th</sup> and 18<sup>th</sup> centuries. While the ethic diverged into the legal realm in the post-Westphalian era, the Catholic Church continued development of the JWE within the Christian context. The secularization of the JWE through international law, however, has changed it from a purely Christian doctrine to one embraced by the western world irrespective of religion. While the Catholic Church continues as the unofficial standard bearer of the JWE, other religious denominations as well as secular philosophers continue to mold and develop the JWE in our time.

In his groundbreaking writings, Augustine clearly emphasized *jus ad bellum* over *jus in bello*. "When we do a thing for a good and lawful purpose, if thereby we unintentionally cause harm to anyone, it should by no means be imputed to us."<sup>23</sup> This line of argument, which allows for

unintentional harm in pursuit of a just cause, is referred to as the "internalist view" of the JWE as the requirements for just conduct in war are satisfied within the context of just war itself.<sup>24</sup> The argument has two key aspects. One is the distinction between intentional and unintentional harm. Under this line of thinking, what matters is not the actual harm being done so much as the attacker's intent. When one intends one result and causes an additional unintended result, according to Augustine, this is due to chance. Given that evil, as represented by sin, is only attributable if voluntary, then chance happenings are not sins.<sup>25</sup> If one intends only to hit a military objective, for example, then the unintended incidental effects on civilians can be discounted. One sees this "intent of the attacker" argument reflected in the Geneva Conventions' restrictions on "willful," or intended attack of civilians.

The other aspect of the internalist argument is that whatever justifies resorting to war in the first place justifies using all necessary means to win it. This presumes, of course, a just cause as defined by the JWE. What this principle essentially means is that the end of winning a just war justifies the means necessary to achieve that end. This "ends justifies the means" argument evolved into the principle of military necessity, which excuses all (or at least some) "evil means" if their use is necessary to achieve the good of winning a just war.

The internalist argument is fairly controversial as it can justify every sort of grotesque conduct so long as the end is just. Additionally, the historical record of this mode of thinking is poor, as it has been used to justify such things as the Crusades, Sherman's march to the sea, the Holocaust, and the dropping of the atomic bomb. While one can always debate the legitimacy of the causes for these acts, the fact remains that the internalist argument has been manipulated to condone some of the most indiscriminate and inhumane acts in world history.

Aquinas further developed and refined Augustine's work. In arguing for the right of self-defense (which Augustine rejected), Aquinas developed the idea of the "double effect." According to this idea, the act of self-defense has two effects: one is the intended effect of saving one's life, and the other is the unintended effect of slaying one's attacker.<sup>26</sup> Since a defender enters the situation with the intention of defending oneself rather than of killing the attacker, he is not morally liable for the attacker's consequent death. This supports Augustine's idea of not being accountable for unintended effects of one's actions, but it expands the idea from unintended effects due to chance to clearly foreseeable unintended effects. When this principle is applied to war, the argument is that one may justifiably kill another (such as a non-combatant) provided the killing is beside the intention. This is true even if the killing is foreseen.<sup>27</sup>

Contrary to Augustine, Aquinas began to emphasize *jus in bello* principles. He argued that, "He who does not remove something whence homicide results, whereas he ought to remove it, is in a sense guilty of voluntary homicide," and "If a man pursue a lawful occupation and take due care, the result being that a person loses his life, he is not guilty of that person's death."<sup>28</sup> In other words, unintended killing is still wrong if one doesn't take "due care" to prevent it. As "due care" must be taken even if the overall cause is just, this represents a break from the internalist view of the JWE. The resulting "externalist view" holds that there are independent standards for *jus ad bellum* and *jus in bello*, although the two are not entirely separate. According to this view, to justify the pursuit of victory requires showing that the necessary means to that end are justified. In other words, it isn't the ends that justify the means but rather the means that justify the ends.<sup>29</sup>

Regarding means of conducting war, the most prominent issue within the JWE is the protection of non-combatants. Where does this idea come from? Why should non-combatants be protected? How is non-combatant defined?

The idea of non-combatant immunity from war has roots in Christian doctrine, chivalry, and custom. According to Ramsey in his interpretation of Augustine, the issue of protecting non-combatants arose from Christian charity.<sup>30</sup> This charity is based on the Christian doctrine of love, which requires that Christians defend their neighbors from unprovoked attack. In the case of an attack upon the state, the Christian had a duty to participate in the just defense of his neighbors, all of whom were being unjustly threatened by opposing military forces. While he had a duty to stop the aggression, he could only use force against the source of that aggression, namely the opposing military forces. The same Christian love that caused him to defend the citizens of his own state, however, should also prevent him from terrorizing the citizens of the other state.<sup>31</sup> As a result of this view, the Catholic church developed the idea that the taking of an innocent person's life is always intrinsically wrong according to natural law.<sup>32</sup>

Another source of what has come to be non-combatant immunity is the idea of innocence in respect to war.<sup>33</sup> In the Middle Ages, weapons were so heavy that only strong men could bear them. As a result, women, children, the elderly and infirm were thought of as innocent, not because they didn't support the aggression, but because they were physically unable to commit aggression. Since these people posed no real threat, killing them served little purpose. Indeed, under the code of chivalry, killing non-combatants was a mark of dishonor.

Yet another source of non-combatant immunity was discrimination based on social function. Just as those who couldn't bear arms were excluded from hostilities, those whose function in society had no direct impact upon war fighting were also excluded. As Michael Walzer said, "They have done nothing, and are doing nothing, that entails the loss of their rights."<sup>34</sup> Thus clergyman, bakers, and doctors received immunity so long as they didn't bear arms. So long as such people didn't make war, they had the right not to have war made against them.<sup>35</sup>

These varying strains of non-combatant immunity coalesced by the end of the Middle Ages.<sup>36</sup> As a result, the protection due noncombatants in war is deeply imbedded in western moral thought, law, and military custom. Although some made the argument that the total wars of WWI and WWII essentially made all citizens combatants, this idea is firmly rejected within both the JWE and under international law. Currently, both the law and the JWE recognize non-combatants as those persons not directly involved in the conduct of war. This includes those persons whose function in factories and elsewhere serve the needs of the person qua person rather than his or her role as military personnel.<sup>37</sup> Thus civilian cooks who provide food to the military are protected, whereas arms manufacturers may not be.

This section has thus far defined non-combatants, military necessity, double effect, and the need to take due care when conducting war. How does the modern JWE reconcile these competing requirements? Are non-combatants always immune to attack?

Although hardly unanimous, most modern just war proponents agree on two basic principles within jus in bello: noncombatant immunity (also called discrimination) and proportionality.

Noncombatant immunity means that, "The lives of innocent persons may never be taken directly, regardless of the purpose alleged for doing so...Just response to aggression must be ...directed against unjust aggressors, not against innocent people caught up in a war not of their making."<sup>38</sup> This definition reflects the Augustinian concern with intention by only prohibiting direct attacks upon civilians. In all cases of attack, particularly those upon military targets that lead to unintended but foreseeable violations of non-combatant immunity, however, one must apply the proportionality rule which states: "The damage to be inflicted and the costs incurred...must be proportional to the good expected."<sup>39</sup> When attacking purely military targets that are isolated from civilian areas, this rule merely requires that the attack lead to some military gain. In cases where attacks on military targets lead to unintended civilian casualties or property destruction, however, the proportionality rule requires that military planners ensure that the military gain outweighs the unintended civilian effects or refrain from the attack in the first place.

While the non-combatant immunity rule is fairly straight-forward, the proportionality rule is less clear. Proportionality is a mathematical relation. Yet how can one mathematically express values like the military benefits of destroying an adversary's electrical grid or the costs of that electricity loss on non-combatants?<sup>40</sup> Of particular concern is the fact that these considerations must be weighed before the attack takes place, during time of war, in light of imperfect information. If the attacker knew beforehand that 100,000 civilians might die as a result of the attack, the proportionality rule might prove useful. But the only source of such vulnerabilities before the fact is the adversary, who is trying to conceal rather than reveal weaknesses. While one can analyze past events in order to better predict the unintended effects of such attacks in the future, adversary differences make direct comparisons difficult, at best. Such complexity makes the proportionality rule little more than a general guide for extreme cases.

Further confusing the issue is the split between internalists and externalists over the uniform applicability of jus in bello. While externalists insist that the jus in bello principles of non-combatant immunity and proportionality be met unconditionally, some just war theorists, such as Michael Walzer and William V. O'Brien, believe that jus ad bellum considerations may override jus in bello.<sup>41</sup> Walzer, for example, writes that "supreme emergencies" such as the threat posed by Nazism are so serious that one can do virtually anything to defeat it.<sup>42</sup> These views, however, are in the minority as most theorists believe that, "to be fully just a war must be characterized by both jus ad bellum and jus in bello. It can't be just if it utilizes indefensible means."<sup>43</sup>

So what does the JWE say about attacking dual-use targets? The answer is unclear. If we again take the example of attacking an adversary's electrical grid, this attack must fulfill the requirements of non-combatant immunity and proportionality. For our purposes, assume that the immediate unintended effects on civilians are very small relative to the military gain (i.e. very few civilians die or are hurt as a result of the blast or the initial loss of power, and the blast has little effect on surrounding buildings). The question then becomes whether or not one should consider the long-term effects of the attack as well. While the JWE is very clear that the direct unintended effects of the attack must be considered according to the rule of proportionality, it is not clear that this consideration be extended to long-term, indirect effects. In the wake of such attacks in Baghdad and Belgrade, a small number of commentators opined that such long-term effects should be considered, which would have arguably made these attacks unjustified. Their argument has merit as civilians indisputably died as an indirect result of losing electricity. Yet

the lack of consensus on this issue weakens their case. While expanding the JWE to include such long-term effects is enticing, it opens up a Pandora's box of other problems. When, for example, would one say the indirect effects had run their course? After one month? A year? While ignoring the indirect effects of attacks on dual-use targets seems absurd, requiring open-ended consideration of indirect effects is equally troubling. As a result, the JWE leaves the attack of dual-use targets as a gray area.

### III. US Air Force Doctrine and Dual-Use Targets

Modern US Air Force doctrine had its beginnings at the US Air Corps Tactical School (ACTS) in the 1930s. Like other air theorists of the interwar period, those at ACTS viewed the future role of airpower with increasing optimism given both its effects in the latter months of WWI and the rapid development of airpower technology. Drawing heavily on both Italian Air Marshall Giulio Douhet's *Command of the Air* as well as the writings of US Army Air Forces Colonel William "Billy" Mitchell, ACTS theorists attempted to formulate an American airpower doctrine. They did so within the context of limited legal restrictions on the application of airpower and with a clear tradition, at least since the Civil War, of supporting the principle of military necessity.

ACTS theorists developed what became known as the "industrial web theory" of aerial bombardment, which attacked an enemy's "vital centers" or war-making potential rather than fielded forces.<sup>44</sup> The objective of such attacks was to destroy both the enemy's ability to fight and his morale, or will to resist. A 1934 ACTS text, for example, established national morale and industry as more crucial objectives than enemy armies, and argued that the quickest way to win a war was through air attack upon the enemy's population and production facilities.<sup>45</sup> The idea of direct attacks on civilians paralleled Douhet's theory that such attacks "may yet prove to be more humane than wars in the past...because they may in the long run shed less blood."<sup>46</sup> Colonel Mitchell, the foremost American air theorist of this period, echoed the same sentiments when he argued that directly attacking enemy population centers would be more humane as it would shorten future wars.<sup>47</sup>

A year later, however, ACTS theorists had completed an analysis of direct attacks upon civilians, and they concluded that such attacks were less effective than attacks on national economic structure. They and Colonel Mitchell amended their previous conclusions, arguing that avoiding direct attacks on civilians was "more in keeping with our humanitarian ideals," although such attacks might prove effective as a "last resort" or in the "final stages of enemy resistance."<sup>48</sup> Despite this change of heart, ACTS remained committed to attacking enemy morale, albeit indirectly.

The ACTS' theories became the foundation for the joint US-British Casablanca Directive outlining the objectives for WWII's Combined Bomber Offensive (CBO). The Directive listed the CBO's ultimate objective as the progressive destruction and dislocation of the German military, industrial, and economic system, as well as the undermining of the German people's morale, to the point where their capacity for armed resistance was fatally weakened.<sup>49</sup> The joint Declaration papered over the dissension between the Americans and British regarding targets and tactics, however. While the US believed that daytime, precision attack of military targets would be effective, the Brits felt that precision attack was ineffective and dangerous given the day's

primitive technology and German defenses. They opted for nighttime area bombing, and maintained no pretense of trying to avoid civilian "collateral damage." According to one RAF source, RAF tactics "did not necessarily entail killing large numbers of people. It did entail depriving them of homes, heat, light, water, urban transportation, and perhaps food."<sup>50</sup> This rhetorical sleight-of-hand failed to explain how one attacks every aspect of civilian existence, including their homes, but avoids killing "large numbers of people."

The US maintained its insistence on daytime, precision bombing until the late winter of 1944, when bad weather often obscured target areas. Since "it was unthinkable not to use the bombers simply because visual bombing was not possible," US crews began highly inaccurate radar bombing.<sup>51</sup> While the intention was to hit military targets, the effect was to haphazardly scatter bombs throughout urban areas. Such attacks were justified by arguing that the intent was still to hit the military target. Finally, in September 1944, the US gave up the pretense of precision attack altogether when General Eisenhower ordered the 8<sup>th</sup> Air Force to begin area bombing of Berlin. Justified under the principle of military necessity as a means to end the war quickly and save lives, these initial attacks led to gradual acceptance of such tactics.<sup>52</sup> By the end of the war, US aircraft had firebombed or dropped nuclear weapons on over 65 cities, killing 330,000 civilians in Japan alone.<sup>53</sup> Reflecting on this devastation, General Curtis Lemay, Commander of Pacific Bomber Command during WWII said, "No matter how you slice it, you're going to kill an awful lot of civilians. Thousands and thousands. But, if you don't destroy the Japanese industry we're going to have to invade Japan. And how many Americans will be killed in an invasion of Japan? Five hundred thousand seems to be the lowest estimate. Some say a million."

Following WWII, Air Force doctrine remained committed to the concept of strategic attack against economic and industrial targets, as well as attack against civilian morale. The post-WWII doctrine reaffirmed the ACTS' principle of the late 1930s that direct attack of civilians was contrary to humanitarian concerns. While the limited nature of the wars in Korea and Vietnam handcuffed Air Force efforts to employ strategic bombing, the 1972 Linebacker campaign reaffirmed Air Force theories of strategic attack. Through the mid-1980s, airpower doctrine had changed little since the late 1930s.

The ACTS' theory received a facelift in the late 1980's from Colonel John A. Warden. In his very influential book, *The Air Campaign*, Colonel Warden developed what he called his Strategic Ring Theory of aerial attack. Updating the "industrial web" idea by stating that an enemy is a system of systems,<sup>54</sup> he emphasized that the key to winning future wars was identifying those critical nodes, or what Clausewitz called "centers of gravity," whose destruction would lead to the state's collapse.

Warden envisioned the enemy state as a series of five concentric rings. In the innermost ring is the leadership, followed in turn by organic essentials such as electric and petroleum facilities, critical infrastructure, the population, and fielded military forces.<sup>55</sup> Whereas in wars past one had to fight through the fielded military forces in order to capture the enemy's leadership or capitol, the development of modern airpower allowed the US to bypass fielded forces and attack directly what the enemy valued most. Not only could airpower conduct this "inside-out war," but it had the capability to strike all the important nodes of the five rings simultaneously, or in parallel,

leading the enemy to a "death of a thousand cuts," something Warden called "strategic paralysis."

Of critical importance for our purposes, Warden outlined that only indirect attacks on civilian morale are recommended, as "direct attacks on civilians" are "morally reprehensible" and militarily difficult to do.<sup>56</sup> This view reflected a reaffirmation of the laws of armed conflict made necessary from the negative experiences in Vietnam. Due to the massacre at My Lai and other cases of indiscriminate killing in Vietnam, all US military personnel involved in combat operations have since received regular training in the laws of armed conflict. Despite this training, Air Force official doctrine still supports indirect attacks on civilian morale. As written in the Air Force Basic Doctrine Document, "Strategic attack objectives often include producing effects to demoralize the enemy's leadership, military forces, and population, thus affecting an adversary's capability to continue the conflict."<sup>57</sup>

The US applied Colonel Warden's ideas in the air war in Iraq, with amazing results. The combination of stealth technology, PGMs, and satellite-aided navigation allowed precision attack as never before. Despite dropping 88,000 tons of bombs in the 43-day air campaign, only 3000 civilians died directly as a result of the attacks, the lowest number of deaths from a major bombing campaign in the history of warfare.<sup>58</sup> A key factor in explaining this low number was that US pilots abided by strict rules of engagement that required them to return with their bombs if unable to positively identify their military targets. As the commander of the operation, General Norman Schwarzkopf said, "We have been very, very careful in the direction of our attack to avoid damage of any kind to civilian installations. It's going to happen; it's absolutely going to happen; there's no question about it, but we're doing everything we can to avoid it."<sup>59</sup> The campaigns in Bosnia and Kosovo continued this trend of precision attack in order to minimize collateral damage.

So where does that leave the US Air Force in regards to dual-use targets? The Air Force perspective is that when attacking power sources, transportation networks, and telecommunications systems, distinguishing between the military and civilian aspects of these facilities is virtually impossible.<sup>60</sup> Since these targets remain critical military nodes within the second and third ring of Warden's model, they are viewed as legitimate military targets. Air Force doctrine has always supported attacking such targets, and nothing in international law or the JWE specifically forbids such attacks.

The Air Force perspective on non-combatant immunity for such dual-use targets is that since the targets are military, the US is responsible for minimizing the direct collateral damage of nearby civilian persons and property. This doesn't preclude the Air Force from taking a liberal interpretation of weapon-selection duties that permit high levels of force protection,<sup>61</sup> nor does the Air Force consider the long-term, indirect effects of such attacks when it applies proportionality to the expected military gain.<sup>62</sup> In sum, the Air Force takes a position that is well within the letter of the law and that supports its doctrine of strategic attack.

One other point is worth noting. Air Force doctrine since the 1930s has included civilian morale as a legitimate target, although direct attacks on civilians have always been forbidden (except for during WWII). This raises the question, how does the Air Force intend to undermine civilian

morale without having an intent to injure, kill, or destroy civilian lives? Perhaps the real answer is that by declaring dual-use targets legitimate military objectives, the Air Force can indirectly target civilian morale. In sum, so long as the Air Force includes civilian morale as a legitimate military target, it will aggressively maintain its right to attack dual-use targets.

#### IV. Summary

This paper has reviewed the development of three perspectives to dual-use targets. In the final analysis, none of the perspectives shows any near-term tendency to outlaw attack on dual-use targets nor to demand consideration of the long-term, unintended effects of attacking them. From the legal perspective, Protocol I is a step in the right direction as it outlaws indiscriminate attacks the effects of which cannot be contained to purely military objectives. While this could arguably apply to dual-use targets, it is far from certain. Even if it did apply, the further requirement to apply the rule of proportionality opens up the question of defining the unintended effects. Should the effects be limited to the direct, immediate effects of the blast, or should they include indirect, long-term effects? If the answer is the latter, then what is the "statute of limitations" on indirect effects? As the law doesn't address these issues, and as the US hasn't even ratified Protocol I, attack of dual-use targets remains a legal gray area.

The JWE's treatment of dual-use targets is more encouraging as several commentators have begun to question the wisdom of ignoring the long-term unintended effects obviously caused in part by such dual-use attacks. Yet proponents of the JWE have no leverage over international opinion so long as their voices are a cacophony of competing views. Nor have they offered a reasonable principle to solve the "statute of limitations" issue. Until they develop both relative consensus as well as workable solutions to applicability questions, they will merely be voices crying out in the wilderness.

Finally, the US Air Force has a vested interest in attacking dual-use targets so long as dual-use target destruction serves the double role of destroying legitimate military capabilities and indirectly targeting civilian morale. So long as this remains within the letter if not the spirit of the law and the JWE, the Air Force will cling to the status quo.

#### Notes

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