

Precision attack and international humanitarian law

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Abstract

This article explores the relationship between precision attack and international humanitarian law. It begins by addressing the nature of precision attack, including precision technologies, the combat environment in which it occurs, attacker tactics, and the targeting process. Modern precision attack's greatest impact on international humanitarian law lies in four areas: indiscriminate attack; proportionality; precautions in attack; perfidy and protected status. The author concludes that precision warfare has both positive and negative implications for the interpretation and application of international humanitarian law on the twenty-first-century battlefield.

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Precision is often heralded as a panacea of modern warfare. Given the military technology available to today's high-tech forces, it sometimes seems that collateral damage to civilian objects and incidental injury to civilians could only possibly result from an attacker's failure to take the "precautions in attack" required by international humanitarian law (IHL).¹ At the very least, should there not be a rebuttable presumption that insufficient precautions are the cause of such injury and damage, a presumption the attacker would bear the burden of rebutting?

Although the law has not yet arrived at this point, some of those who assess the conduct of hostilities, both formally and informally, seem to be moving in that direction. Somewhat ironically, this tendency has been fuelled by efforts of the armed forces to convince domestic and international audiences that they fight very "discriminate" wars.² When a missile can be seen to navigate

a city street on CNN, it is hard to accept footage of civilian casualties as merely the unavoidable consequence of a lawful attack.

This article explores the realities and myths of twenty-first-century precision operations and their normative significance.³ What is precision? Which aspects of international humanitarian law bear on precision attack? How might improvements in precision technologies affect the nature of armed conflict, and how might such changes influence the application and interpretation of international humanitarian law by belligerents? Hopefully, the article will clarify some of the prevailing misperceptions about precision, while identifying both positive and negative aspects of precision warfare that merit further inquiry.

Precision warfare

Precision is often wrongly characterized as a weapon's capacity to strike the precise point at which it is aimed (known as the "aimpoint").⁴ In fact, this ability is correctly labelled "accuracy." It is measured in terms of circular error probable (CEP), the radius of a circle within which one-half of the weapons will fall.⁵

Accuracy is a key element of precision, but the terms are not synonymous. Rather, precision refers to "the ability of joint forces to locate, surveil, discern, and track objectives or targets; select, organize, and use the correct systems; generate desired effects; assess results; and reengage with decisive speed and overwhelming operational tempo as required, throughout the full range of military operations."⁶ It encompasses the ability to locate and identify a target, strike it accurately in a timely fashion, and determine whether desired effects have been achieved or restrike is needed.

Precision strikes therefore require more than accurate weapon systems.⁷ Robust command, control, communications, computers, intelligence, surveillance,

- 1 Specifically, those set forth in Article 57 of Additional Protocol I (hereinafter AP I) to the Geneva Conventions of 12 August 1949, relating to the Protection of Victims of International Armed Conflicts, 12 December 1977, reprinted in *The Laws of Armed Conflict*, Dietrich Schindler & Jiri Toman (eds.), Martinus Nijhoff, Dordrecht, The Netherlands, 2004, p. 711. On precautions in attack, see discussion below.
- 2 See discussion in Michael N. Schmitt, "The conduct of hostilities during Operation Iraqi Freedom: An international humanitarian law assessment," *Yearbook of International Humanitarian Law* (forthcoming), and the Human Rights Watch response thereto.
- 3 With particular emphasis on precision's optimal environment, air warfare.
- 4 "A precise point associated with a target and assigned for a specific weapon impact to achieve the intended objective and level of destruction. May be defined descriptively (e.g. vent in center of roof), by grid reference, or geolocation." Joint Chiefs of Staff, "Joint doctrine for targeting," Joint Publication 3-60, 17 January 2002, at GL-4.
- 5 Or one-half of the projectiles carried within a single weapon, such as a cluster bomb unit.
- 6 Joint Chiefs of Staff, Joint Vision 2020, June 2000, available at <www.dtic.mil/futurejointwarfare/> (visited 22 August 2005).
- 7 A weapon system is a "combination of one or more weapons with all related equipment, materials, services, personnel, and means of delivery and deployment (if applicable) required for self-sufficiency." When considering precision, it is more useful to think in terms of weapon systems, for the accuracy of a weapon in a particular attack may depend as much on the capabilities of the platform from which it is launched as the technical parameters of the weapon itself.

and reconnaissance (C4ISR), for instance, can be as determinative of success as the weapon employed.⁸ The failed Operation Iraqi Freedom decapitation campaign and the two mistaken attacks against an ICRC warehouse in Afghanistan during Operation Enduring Freedom exemplify this reality.⁹ The weapons were delivered very accurately. But “perishable” (transitory) intelligence frustrated repeated attempts to kill members of the Iraqi leadership, while target misidentification and subsequent poor communication among Coalition forces contributed to the accidental bombings of ICRC facilities.

The technologies available to conduct a precision attack vary widely from military to military. They can be grouped broadly into two categories. Some technologies allow greater battlespace transparency, thereby enhancing the attacker’s ability to detect, identify and fix a potential target, as well as assess the mission’s results. Others facilitate the attack itself by enabling the attacker to penetrate (or neutralize) enemy defences, enhancing command and control, and improving accuracy and other weapon characteristics such as penetrability. Although it is beyond the scope of this short survey to describe the many systems that foster precision in modern warfare, it may prove enlightening to describe a few.

In the first category, the E-8C Joint Surveillance Target Attack Radar System (JSTARS) has proved particularly useful against ground targets. A battle management, command and control, intelligence, surveillance and reconnaissance aircraft, the JSTARS provides ground and air commanders with information supporting attacks against enemy ground forces. Its radar can survey an area of 50,000 square kilometres and detect potential targets out to 250 kilometres.

A counterpart of the JSTARS is the RC135 V/W Rivet Joint, which monitors the electronic spectrum. It offers communications and electronics intelligence capabilities in near real time by detecting, identifying and geolocating electromagnetic signals (e.g. leadership communications). The information it gathers is quickly transmitted to users who can then immediately target the source of the emissions.

Unmanned aerial vehicles (UAVs) have garnered great attention in recent conflicts. The RQ-1 Predator provides surveillance, reconnaissance and target

8 Intelligence is “the *product* resulting from the collection, processing, integration, analysis, evaluation, and interpretation of available information concerning foreign countries or areas.” Surveillance is the “*systematic observation* of aerospace, surface, or subsurface areas, places, persons, or things, by visual, aural, electronic, photographic, or other means.” Reconnaissance is “a *mission* undertaken to obtain, by visual observation or other detection methods, information about the activities and resources of an enemy or potential enemy, or to secure data concerning the meteorological, hydrographic, or geographic characteristics of a particular area.” Department of Defense Dictionary of Military and Associated Terms, Joint Publication 1-02, as amended through 9 May 2005, available at <www.dtic.mil/doctrine/jel/doddict/> (hereinafter DoD Dictionary, visited 22 August 2005).

9 The decapitation campaign is described at length in Human Rights Watch, *Off Target: The Conduct of the War and Civilian Casualties in Iraq*, December 2003, at pp. 78–79, available at <www.hrw.org/reports/2003/usa1203/> (visited 22 August 2005). For the strikes on ICRC facilities, see Sean D. Murphy, “Contemporary practice of the United States relating to international law,” *American Journal of International Law*, Vol. 96, 2002, p. 247.

acquisition services using a TV camera, an infrared camera, and a synthetic aperture radar (for looking through smoke, clouds or haze). Some Predators (the MQ-1) have been armed with Hellfire missiles to allow them to attack the targets they identify. In 2002, for example, the CIA used a Predator to strike a car carrying Qaed Senyan al-Harhi, al Qaeda's senior operative in Yemen.¹⁰ A second type of UAV, the Global Hawk, operates at high level to boost survivability and enlarge coverage. It contains synthetic aperture radar, a ground moving target indicator and high-resolution electro-optical and infrared sensors. The Global Hawk can travel to an interest area over 1,000 miles away and remain on station for 24 hours.

It is in the area of transparency that the most significant future advances are likely. Indeed, the Defense Advanced Research Project Agency (DARPA), the US governmental organization with responsibility for the development of future military technologies, has adopted "detection, precision ID, tracking, and destruction of elusive surface targets" as one of eight "strategic thrusts" (areas of emphasis).¹¹ A project typifying such research involves improving connectivity of individual sensors to maximize the unique benefits of each. The DARPA offers the example of a Predator using video to track a vehicle when it disappears under jungle canopy. The network would automatically switch to foliage-penetrating radar that can monitor the vehicle; 3D LADAR (laser detection and ranging) sensors would then generate a detailed three-dimensional image that can be compared to computerized geometric models of weapon systems to ensure the target is what it appears. DARPA is working on a number of other projects in this field, ranging from ground and airborne seismic, acoustic, electromagnetic, optical and chemical sensors that can locate and map underground facilities to a "space surveillance telescope" to search space for small objects (allowing them to be neutralized).

The DARPA has placed less emphasis on developing technologies involved in the attack proper. In great part, this is because current systems fielded by high-tech forces are, as demonstrated in recent operations like Operation Iraqi Freedom, survivable and accurate.¹² That said, DARPA's efforts in the field of networking will certainly enhance the responsiveness of current systems by improving command and control, facilitating coordination between attackers and increasingly linking sensors and "shooters."

Two technologies already in the field have made (and will continue to make) a dramatic impact on attack effectiveness. The first is stealth technology, particularly the US F-117 Nighthawk and the B-2 Spirit.¹³ Non-stealth bombers

10 Anthony Dworkin, "The Yemen strike," 14 November 2002, available at <www.crimesofwar.org/onnews/news-yemen.html> (visited 22 August 2005).

11 Defense Advanced Research Project Agency, *Bridging the Gap*, February 2005, ch. 3.

12 Indeed, of the eight DARPA strategic thrusts, none bears directly on this capability.

13 Weapons systems and weapons are described on a number of websites. In particular, see those of the US Air Force, available at <<http://www.af.mil/factsheets/>> (visited 22 August 2005); Global Security, available at <<http://www.globalsecurity.org/military/systems/index.html>> (visited 22 August 2005); and Federation of American Scientists, available at <<http://www.fas.org/main/home.jsp>> (visited 22 August 2005).

usually require escorts when penetrating enemy airspace: air-to-air fighters to defend them against interceptors; defence suppression escorts that attack surface-to-air missile sites and anti-aircraft artillery; and jamming aircraft to block electromagnetic assets. By contrast, stealth aircraft reach their targets alone and undetected, thereby allowing them to locate their aimpoint and release their guided weapons under relatively benign circumstances. This dramatically enhances precision.

More significant is the Joint Direct Attack Munition (JDAM). The weapon's concept is quite simple. Guidance tail kits are attached to existing unguided free-fall bombs, rendering them guided. With the tail kit's global positioning system (satellite) and inertial navigation system guidance, these bombs can achieve an unclassified circular error probable of approximately 20 feet from as far away as 15 miles (an upgrade will improve accuracy).

While other systems, particularly laser-guided ones, might be more accurate, the JDAM is noteworthy in two regards. First, at roughly US\$20,000 a copy, it is cheap. Second, most aircraft can be readily modified to carry the JDAM. It is unsurprising, then, that JDAMs are assuming an increasing share of the fight.¹⁴ The lighter version will allow aircraft to carry more weapons per sortie. Given its affordability and versatility, JDAMs bring precision warfare within the reach of many air forces.

Beyond technology, numerous factors influence the level of achievable precision. One is the environment in which the attack is carried out. Many weapon systems are undeliverable (or degraded) during night time or in poor weather. Features of the target area may also detract from precision. For instance, smoke can obscure visual target identification and fires may foil the use of infrared equipment. Heavy defences along the ingress and egress routes and in the target area can distract the attacker or cause the platform launching the weapon to be unstable as it takes defensive manoeuvres. Finally, the nature of the conflict may be such that it is difficult to reliably identify the enemy. Operation Iraqi Freedom, where Iraqi forces donned civilian attire and used civilians and civilian objects as shields (or bases of operations), is the paradigmatic example in contemporary warfare.

Like enemy tactics, those adopted by the attacker bear on precision. The issue of launching weapons from altitude became a *cause célèbre* for critics of NATO's bombing campaign against the former Federal Republic of Yugoslavia. Although much of the criticism evidenced misunderstanding of modern weaponry, launch altitude and range do affect accuracy. For instance, unguided weapons are less accurate the higher the altitude or the greater the distance from the target, whereas guided weapons often become more accurate

14 During Operation Iraqi Freedom, US forces dropped 5,086 JDAM GBU 31s (2,000 pound), 768 JDAM GBU 32s (1,000 pound), and 675 JDAM GBU 35s (1,000 pound penetrator). A 500 pound variant has been developed and is being employed by the F-16 Falcon and the F-15 Eagle. Figures contained in US Central Command Air Forces, Assessment and Analysis Division, *Operation Iraqi Freedom: By the Numbers*, 30 April 2003, p. 11, available at <www.globalsecurity.org/military/library/report/2003/uscentaf_oif_report_30apr2003.pdf> (visited 22 August 2005).

because they have longer to home in on their aimpoint. There has similarly been criticism of firing weapons from “beyond visual range” (BVR). Doing so forfeits any advantages derived from actually seeing the target (VID or “visual ID”), but improves precision through launch in a lower threat environment. Even the rules of engagement (ROE) may affect precision.¹⁵ As an example, rules of engagement may require “positive identification” (PID) before engaging a target or mandate the use of certain weapons systems against particular targets, such as those in an urban area.¹⁶

A major influence on precision operations is the type of targeting involved.¹⁷ Targets are either “planned” or “immediate.” Planned targets are those known to exist in the operational area and are attacked in accordance with an air tasking order (ATO), mission-type order, or fire support plan.¹⁸ They may either be “scheduled” or “on-call.” The former are targets to be attacked at a specific time according to a set schedule. By contrast, the latter are known to exist, but are included in the air tasking order only in response to evolving situations.

Immediate targets are not identified (or selected for attack) soon enough to be included in the normal targeting process. Such targets are either “unplanned” or “unanticipated.” Unplanned immediate targets are known, but are not detected, located or selected for attack in time for inclusion in the targeting cycle. Unanticipated immediate targets are those of which the attacker was unaware but, once detected, are targeted because their destruction, damage or neutralization contributes to campaign objectives.

Targets in any of the four categories may be “time-sensitive.” They require immediate attack “because they pose (or will soon pose) a danger to friendly forces or are highly lucrative, fleeting targets of opportunity.” Some are “fleeting” because they are mobile (as in the case of the Iraqi leadership) or because the enemy may employ CC&D (camouflage, concealment, and deception) techniques to conceal them.

15 The United States defines rules of engagement as “directives issued by competent military authority that delineate the circumstances and limitations under which United States forces will initiate and/or continue combat engagement with other forces encountered.” DoD Dictionary, *op. cit.* (note 8). ROE are derived from policy, legal and operational concerns.

16 For example, the 2003 Combined Forces Land Component Commander (Iraq) ROE Card provided: “Positive identification (PID) is required prior to engagement. PID is a reasonable certainty that the proposed target is a legitimate military target. If no PID, contact your next higher commander for decision.” *Operational Law Handbook*, US Army Judge Advocate General’s Legal Center and School, Vol. 101, 2004.

17 See “Joint doctrine for targeting,” *op. cit.*, ch. 1.

18 An ATO is defined as “a method used to task and disseminate to components, subordinate units, and command and control agencies projected sorties, capabilities and/or forces to targets and specific missions. Normally provides specific instructions to include call signs, targets, controlling agencies, etc., as well as general instructions.” A mission-type order is a directive “to a unit to perform a mission without specifying how it is to be accomplished.” Fire support consists of “fires that directly support land, maritime, amphibious, and special operations forces to engage enemy forces, combat formations, and facilities in pursuit of tactical and operational objectives.” DoD Dictionary, *op. cit.* (note 8).

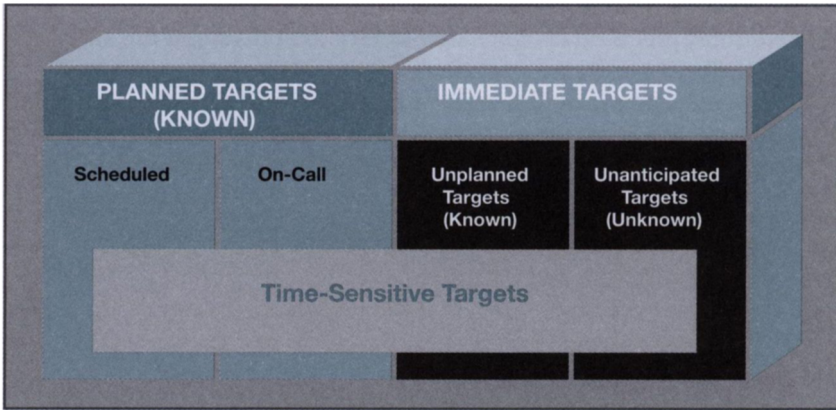


Figure 1: Target Categories¹⁹

The ability to engage in precision attack against a particular target is always situational. However, as a general matter, planned targets are more conducive to precision attack than unplanned. Within these categories, scheduled targets and unplanned targets are preferable to on-call and unanticipated targets respectively. Obviously, the more time-sensitive a target, the less the opportunity to assess the target or plan the attack, and the fewer the attack options (systems, tactics, etc.) that will be available.

To disable the enemy by striking at these targets, an increasing number of militaries have adopted effects-based targeting processes and doctrines.²⁰ Effects-based targeting — which was made possible by precision technologies such as advanced intelligence, surveillance and reconnaissance (ISR), accurate weaponry, and stealth — involves deconstructing enemy systems to identify those components thereof the attack on which will best yield a defined effect that supports the campaign objectives.²¹ Consider, for example, misuse of a media facility to direct military operations. The desired effect is neutralization of the offending transmissions, not destruction of the facility. This being so, it may be more effective to temporarily shut down the station by dropping carbon filaments on the power lines that feed it electricity, rather than bombing the facility itself, particularly if the attacking commander envisages using it for his or her own

19 “Joint doctrine for targeting,” *op. cit.* (note 4), Figure I-2.

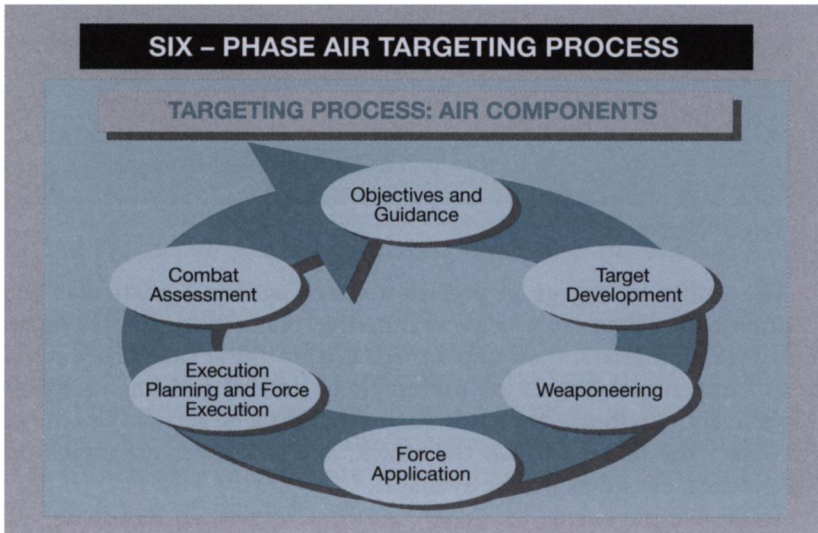
20 On effects-based operations, see Brigadier General David A. Deptula, *Effects-based Operations: Change in the Nature of War*, Aerospace Education Foundation 2001; Department of Defense, “Effects-based operations briefing,” 19 March 2003 (hereinafter EBO Brief), available at <www.defenselink.mil/news/Mar2003/g030318-D-9085.html> (visited 22 August 2005). On EBO and law, see Michael N. Schmitt, “Aerial effects-based operations and the law of armed conflict,” paper presented at a conference to mark the launch of the UK *Manual of the Law of Armed Conflict*, Oxford University, Oxford, July 2004. The articles presented will appear in a compilation to be edited by Steven Haines and published by Oxford University Press in 2005.

21 Effects-based operations are defined as “actions taken against enemy systems designed to achieve specific effects that contribute directly to desired military and political outcomes.” US Air Force, “Air Force basic doctrine,” Air Force Doctrine Document 1, 17 November, 2003, p. 98.

purposes during post-conflict reconstruction. Therefore, in the context of effects-based operations, precision is the relative ability to understand the enemy system and conduct effective and accurate attacks against its key components.²²

Ultimately, precision depends most on the effectiveness with which the targeting process is executed.

Figure 2: Targeting Process²³



This six-phase process commences with the commander setting campaign objectives and issuing corresponding guidance to his or her forces. Once received, target development can begin. During this phase, the enemy's military, political and economic systems, their subcomponents and their interrelationships are studied. The value of potential targets is analysed to determine the relative need to strike them, and international humanitarian law and rules of engagement factors are considered.

In the weaponneering phase, the weapon to be used is tentatively selected, bearing in mind factors such as availability, desired probability of damage (Pd),²⁴ likely weapons usage as the conflict continues, and potential incidental

22 Effects may be direct (the first-order result of the attack, e.g. destruction from weapon blast) or indirect (second or greater order results, e.g. negative impact on enemy morale). Whether direct or indirect, effects may cumulate or cascade. Cumulative effects are those that compound over time. For instance, enemy morale degrades the longer adversaries are subjected to attack. By contrast, cascading effects are indirect effects that ripple through the enemy's target system, usually from a higher to a lower level of command. For instance, neutralization of a command and control facility can sow confusion among subordinate units.

23 "Joint doctrine for targeting," *op. cit.* (note 4), Figure C-3.

24 "Probability of damage (Pd) is used to express the statistical probability (percentage or decimal) that specified damage criteria can be met assuming the probability of arrival." United States Air Force, "Intelligence targeting guide," AF Pamphlet 14-210, 1 February 1998, pp. 59-60.

injury and collateral damage. Force application, during which a weapons system (launch platform and weapon) is matched to a particular aimpoint, follows.

These four phases provide the basis for execution planning, i.e. designing the mission that will carry out the strike. Mission planners assess how the target will be identified during the attack, determine the precise location of the target, and decide upon attack tactics. Following execution of the attack, a combat assessment of the strike is conducted to determine whether reattack or attack on other targets is required.

Improvements in technologies, doctrine and tactics continue to heighten the quality of the targeting process. Unsurprisingly, the result is a growing resort to precision attack. During Operation Desert Storm in 1991, only 8.8% of attacks employed precision munitions.²⁵ By Operation Allied Force in 1999, this figure had grown to approximately one-third of all munitions dropped.²⁶ Two years later, in Operation Enduring Freedom in Afghanistan, the percentage was 65%, with slight growth to 68% by Operation Iraqi Freedom in 2003.²⁷

The increasing prevalence of precision operations in modern conflict has a number of implications vis-à-vis the conduct of hostilities, some of which have particular relevance to the interpretation and application of international humanitarian law principles. First and foremost, the more precise the strike, the more likely the right target will be hit. Furthermore, increased accuracy allows the use of a smaller charge to achieve the desired probability of damage, thereby risking less collateral damage and incidental injury. Precision also limits the need for restrikes (with their chance of civilian harm) against a target. At the same time, though, greater precision enables targets to be attacked that previously were off-limits due to likely excessive collateral damage or incidental injury. This is particularly true with regard to urban and dual-use targets.²⁸ To the extent that such attacks are seldom free of collateral damage and incidental injury, opening additional targets to attack results in a net increase in potential harm to the civilian population.

On the other hand, the emphasis on achieving effects rather than simply attrition of the enemy reduces the number of targets to be struck, which means fewer occasions when collateral damage or incidental injury may be caused. Because the number of missions to achieve a desired result drops, more platforms are available to strike other targets. The air campaign can thus be prosecuted more quickly and enemy defeat will theoretically ensue sooner, a positive result from the perspective of the civilian population's well-being.

25 William M. Arkin *et al.*, *On Impact: Modern Warfare and the Environment, a Case Study of the Gulf War*, Greenpeace, June 1991, p. 78. For an excellent summary of the precision aspects of the campaign, see Department of Defense, Report to Congress, "Kosovo/Operation Allied Force after-action report," 31 January 2000.

26 NATO, "Kosovo one year on," 30 October 2000, available at <www.nato.int/kosovo/repo2000/conduct.htm> (visited 22 August 2005); Herman L. Gilster, *Desert Storm: War, Time, and Substitution Revisited*, Airpower, spring 1996, p. 8; Michael Kelley, "The American way of war," *Atlantic Monthly*, June 2002, p. 16.

27 *By the Numbers*, *op. cit.* (note 14).

28 A dual-use target is a target with both civilian and military functions, such as a factory that makes both civilian and military products or an airfield from which both civilian and military aircraft fly.

Finally, greater precision means the enemy is more vulnerable. It is inevitable that enemy forces will seek out methods and means of warfare to counter such vulnerabilities. As will be discussed, some “curative” measures have run counter to the underlying principles of international humanitarian law.

Humanitarian law and precision

Precision warfare intersects (or has the potential to interact) with international humanitarian law in four key areas: the prohibition of indiscriminate attacks; the principle of proportionality; the requirement to take precautions in attack; and perfidy and other misuses of protected status. At times precision enhances the prospect of compliance with international humanitarian law; however, it can also be an incentive to reinterpret or to violate the law.

Indiscriminate attack

The express prohibition on indiscriminate attacks is found in Article 51.4 of Additional Protocol I:

“Indiscriminate attacks are prohibited. Indiscriminate attacks are:
(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
(c) those which employ a method or means of combat the effects of which cannot be limited as required by this Protocol;
and consequently, in each such case, are of a nature to strike military objectives and civilians or civilian objects without distinction.”

Thus, by subparagraph (a), international humanitarian law forbids the indiscriminate use of a weapon, whereas subparagraphs (b) and (c) prohibit indiscriminate weapons. Customary international humanitarian law unquestionably includes similar prohibitions.²⁹

Under subparagraph (a), an attacker must aim at a military objective. In other words he or she may not fire, regardless of where the weapon will strike, into an area containing both military objectives and civilians (or civilian objects). A classic case is the Iraqi SCUD missile attacks directed at densely populated areas in Israel during the 1991 Gulf War. Although the areas contained military objectives, the Iraqis made no effort to target the latter as such.³⁰

This violation is theoretically distinct from directly attacking civilians or civilian objects, in violation of Articles 48, 51.2, and 52.1 of Additional Protocol I and customary international humanitarian law.³¹ Here, the requisite

29 See e.g. Jean-Marie Henckaerts and Louise Doswald-Beck, *Customary International Humanitarian Law* (hereinafter *CIHL*), Cambridge University Press, Cambridge, 2005, chapters 3 & 20.

30 Their intent was not to hit Israeli military objectives, but rather to draw Israel into the conflict and thereby disrupt a coalition that included a number of Arab States.

31 See discussion below.

mens rea is not intent to harm civilians, but instead “reckless disregard” of such consequences.³² In practice, though, the two prohibitions often merge. For instance, the International Criminal Tribunal for the former Yugoslavia (Trial Chamber) found in *Galic* that “attacks which strike civilians or civilian objects without distinction, may qualify as direct attacks against civilians.”³³ The International Criminal Court Statute’s approach to criminal responsibility is consistent. Article 30 provides that with regard to the consequence of an action, intent and knowledge are construed as awareness “that [a consequence] will occur in the ordinary course of events.”³⁴

Precision has only an evidential relationship to the prohibition on using discriminate weapons indiscriminately. Specifically, the greater the precision capabilities of an attacker, the more compelling the characterization of an attack striking civilians or civilian objects as reckless. For instance, assume there is a military objective in a populated area. It will be difficult to suggest that a weapon falling within its circular error probable was fired indiscriminately if there is no additional evidence of reckless disregard. Instead, the issue would more likely be styled as one of proportionality (see discussion below). On the other hand, if the weapon falls well outside its circular error probable, then it is reasonable to initially conclude that the attack was not directed at the military objective in question. Thus, as a factual matter, those employing precision weapons will have greater difficulty shielding themselves from allegations of indiscriminate attack than those who do not. Similarly, those with advanced ISR will have a much more difficult time convincing others that an attack striking civilians and civilian objects was a case of mistaken identity rather than an indiscriminate act of recklessness (or intent).

Criticism levelled about recent air campaigns evidences this phenomenon. For instance, the use of cluster bomb units near populated areas is regularly condemned as reckless (as well as indiscriminate *per se*). Similarly, during Operation Allied Force, recklessness, either in execution (e.g. by relying on unreliable information) or in tactics (e.g. by attacking from high altitude), was alleged on multiple occasions.³⁵ Charges of recklessness surfaced again during

32 Yoram Dinstein, *The Conduct of Hostilities under the Law of International Armed Conflict*, Cambridge University Press, Cambridge, 2004, p. 117.

33 ICTY, *Prosecutor v. Stanislav Galic*, Case No. IT-98-29-T, (Trial Chamber), 5 December, 2003, para. 57. Similarly, in reviewing the NATO bombing campaign against Yugoslavia, the group that authored the ICTY Final Report to the Prosecutor cited recklessness as the applicable standard when it urged against issuance of indictments. Office of the Prosecutor, International Criminal Tribunal for the Former Yugoslavia, “Final Report to the Prosecutor by the Committee established to review the NATO bombing campaign against the Federal Republic of Yugoslavia,” 13 June 2000, reprinted in *International Legal Materials*, Vol. 39, 2000, p. 1258.

34 Statute of the International Criminal Court (Rome Statute), 17 July 1998, Art. 30, reprinted in Schindler, *op. cit.* (note 1), p. 1309.

35 In the attacks against the Grdelic Gorge bridge, the Djakovic convoy, Dubrava Prison, and Korisa. See for example, Human Rights Watch, “Civilian deaths in the NATO air campaign,” February 2000, available at <www.hrw.org/reports/2000/nato/index.htm#TopOfPag> (visited 22 August 2005); Amnesty International, “Collateral damage’ or unlawful killings? Violations of the laws of war by NATO during Operation Allied Force,” June 2000, available at <www.amnesty.org/ailib/intcam/kosovo/docs/natorep_all.doc> (visited 22 August 2005).

Operation Iraqi Freedom, particularly with regard to the decapitation campaign and the use of artillery in populated areas.³⁶ Such incidents are a far cry from the paradigmatic indiscriminate SCUD attacks of the 1990-91 Gulf War.

The second form of indiscriminate attack cited in Article 51.4 is use of an indiscriminate weapon. In 1996, the International Court of Justice labelled the prohibition on such weapons as “cardinal.”³⁷ Indiscriminate weapons either cannot be aimed reliably at a military objective (e.g. the German V2 rockets — V for *Vergeltung*, i.e. retaliation — of World War II)³⁸ or have effects that cannot be controlled (e.g. a biological weapon containing a contagion that spreads uncontrollably from combatants to civilians). Precision is directly relevant to the former, for whether a system can be “aimed” sufficiently depends on the state of military technology.

Consider aerial bombing during World War II. Bombs dropped by a B-17 had a circular error probability of approximately 3,300 feet; to achieve a high probability of damage against a point target required roughly 1,500 sorties dropping 9,000 bombs.³⁹ Since even modern unguided bombs have CEPs that are a fraction of this figure, today a weapon system with a circular error probability of over 3,000 feet would surely be deemed indiscriminate. As precision increases, the interpretation of the Article 51.4 phrase “not directed at a specific military objective” will become ever more demanding.

Proportionality

The second major area of international humanitarian law likely to be affected by the growing prevalence of precision warfare is proportionality. That principle, codified in Articles 51.5(b) and 57.2(a)(iii) of Additional Protocol I and undeniably an aspect of customary international humanitarian law, prohibits as indiscriminate “an attack which 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.”⁴⁰ A breach constitutes a war crime under the Statute of the International Criminal Court.⁴¹ It is important to understand that the proportionality principle

36 *Off Target*, *op. cit.* (note 9).

37 *Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons*, ICJ Reports 1996, para 78.

38 This is the example cited in the ICRC’s official commentary on Additional Protocol I: *Commentary on the Additional Protocols of 8 June 1997 to the Geneva Conventions of 12 August 1949*, Yves Sandoz, Christophe Swinarski & Bruno Zimmermann (eds.), ICRC, Geneva, 1987, para. 1958, (hereinafter *Commentary*).

39 EBO Brief, *op. cit.* (note 20). To take another example, during Operation Cobra, the breakout from Normandy, US air forces dropped 14,600 500-pound bombs on one German division, destroying 66 tanks and 11 heavy guns. During Desert Storm, the US dropped 9,800 precision-guided munitions, destroying 2,500 tanks, heavy artillery pieces, and armoured personnel carriers – a ratio of bombs to equipment destroyed that was 50 times that of Operation Cobra. Robert A. Pape, “Hit or miss: What precision air weapons do precisely,” *Foreign Affairs*, September/October 2004, p. 163.

40 *CIHL*, *op. cit.* (note 29), Rule 14; *Nuclear Weapons case*, *op. cit.* (note 37), at 587 (Dissenting opinion of Judge Higgins). Article 57(2)(a)(iii) & (b) restates the prohibition in the context of precautions in attack.

41 ICC Statute, *op. cit.* (note 34), at Art. 8(2)(b)(iv). The Statute modifies “excessive” with the adjective “clearly” and “military advantage” with “overall,” thereby emphasizing both the need for clarity and the importance of avoiding assessments of individual attacks in total isolation.

is a restriction on attacks that is additional to the principle limiting them to combatants and military objectives.

The principle of proportionality is often misapplied. For instance, in some cases the mere quantum of collateral damage and incidental injury causes critics to condemn a strike as disproportionate. However, the extent of harm and damage is relevant only in relation to the military advantage reasonably expected as the attack was launched. The standard is “excessive” (a comparative concept), not “extensive” (an absolute concept).

Quite aside from instances of misapplication, challenges of interpretation exist in both theory and practice. How certain must one be of the resulting collateral damage and incidental injury before it is “expected”? What does the phrase “concrete and direct” mean in practice? How “military” must the advantage be to count? Most importantly, how does one compare dissimilar values (civilian harm and military gain) at all, let alone over time in different combat situations and across cultures?

Precision influences these persistent issues only to the extent that it makes damage more or less likely, thereby affecting the proportionality calculation (however interpreted). Various factors contribute to collateral damage and incidental injury — incomplete or incorrect knowledge about the target, failure to anticipate how civilians will be affected, inaccuracy, an inability to precisely measure the force applied to ensure no more than necessary is used, and restriking a target because it cannot be reliably determined whether it has been sufficiently neutralized. Precision improves the “quality” of attack in each of these regards. The ISR upon which precision depends offers greater understanding of the target, the likely effect of the strike on the civilian population, and the need for restrike. Precision’s accuracy component obviously addresses inaccuracy and, as noted, the more accurate a strike the less the explosive force needed to achieve the desired probability of damage. Finally, the greater a strike’s precision, the more sure the military advantage anticipated, thereby eliminating some of the uncertainty inherent in proportionality calculations. So, strictly speaking, while there is no direct relationship between precision and the proportionality principle as a matter of law, there is a very real *de facto* nexus.

Furthermore, comparing dissimilar values necessitates subjective evaluations. In practice (not law), the subjective understanding of excessiveness is influenced by the precision capabilities at hand. In other words, the more capable one is of avoiding collateral damage and incidental injury, the more critically the attack will be assessed, both by one’s own forces and others. As an example, during Operation Iraqi Freedom, US forces engaged in computer modelling to “determine the weapon, fuze, attack angle, and time of day that will ensure maximum effect on the target with minimum civilian casualties.”⁴² When the model estimate exceeded 30 civilian casualties, Secretary

42 *Off Target*, *op. cit.* (note 9), p. 19.

of Defense approval was required for the mission.⁴³ While there is no legal requirement for higher-level approval as collateral damage or incidental injury grows, the United States recognized that American precision capabilities meant it would be judged harshly for causing harm to civilians and their property.

An issue peripherally related to proportionality and precision involves the use of civilians or civilian objects as shields, a practice known as “counter-targeting.”⁴⁴ During Operation Iraqi Freedom, Iraqi forces compelled civilians, including women and children, to act as human shields. In addition they took advantage of the presence of civilians, for example by driving their vehicles next to civilian cars when Coalition attack helicopters appeared.⁴⁵ Does the fact that the enemy is violating international humanitarian law relieve the attacker from including the shields in the proportionality calculation?⁴⁶ If so, the target may be attackable with a weapon of less precision than would be the case if harm to the shields counts as incidental injury.

43 Bradley Graham, “US moved early for air supremacy,” *Washington Post*, 20 July, 2003, p. 26. Twenty such targets were struck; *Off Target, op. cit.* (note 9), at 20. According to Human Rights Watch, this procedure “worked well” in most cases and the “aerial bombardment resulted in minimal adverse effects to the civilian population”; *ibid.*

44 Counter-targeting is “preventing or degrading detection, characterization, destruction, and post-strike assessment.” Defense Intelligence Agency, “Saddam’s use of human shields and deceptive sanctuaries: Special briefing for the Pentagon Press Corps,” 26 February 2003, available at <www.defenselink.mil/news/Feb2003/g030226-D-9085M.html> (visited 22 August 2005).

45 Todd S. Purdum, “Night time ambush in Iraqi city,” *New York Times*, 5 April 2003, p. 1; Dexter Filkins, “In the field choosing targets: Iraqi fighters or civilians? Hard decision for copters,” *New York Times*, 31 March 2003, p. 5. Civilian objects were also used in counter-targeting. Iraqi forces located military equipment and troops in or near civilian buildings. These included specially protected locations such as al-Nasiriyya Surgical Hospital, the Baghdad Red Crescent Maternity Hospital, the Imam Ali Mosque in al-Najaf, and the Abu Hanifa Mosque as bases for operations. *Off Target, op. cit.* (note 9), pp. 72–73. During the battle for Fallujah, insurgents used 60 of the 100 mosques and 3 medical facilities in the city in this manner. Marine Expeditionary Force & Multi-National Corps-Iraq, “Telling the Fallujah story to the world,” Briefing Slides, 20 November 2004 (on file with author). Although no express provision banning the use of civilian objects as shields exists in IHL, such actions violate Additional Protocol I’s Article 58 obligations for Parties to conflict to “endeavour to remove the civilian population, individual civilians and civilian objects under their control from the vicinity of military objects; avoid locating military objectives within or near densely populated areas; [and] take the other necessary precautions to protect the civilian population, individual civilians and civilian objects under their control against the dangers resulting from military operations,” albeit only “to the maximum extent feasible.” See also *CIHL, op. cit.* (note 29), ch. 6. Iraqi use of specially protected objects also clearly violated other provisions of IHL. The First Geneva Convention stipulates in Article 19 that “responsible authorities shall ensure that ... medical establishments and units are, as far as possible, situated in such a manner that attacks against military objectives cannot imperil their safety.” Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field, 12 August 1949, reprinted in Schindler, *op. cit.* (note 1), p. 459, (hereinafter GC I). Additional Protocol I is completely unambiguous: it states in Art. 12.4 that “[u]nder no circumstances shall medical units be used in an attempt to shield military objectives from attack,” while Art. 53(b) confers similar protection on “historic monuments, works of art or places of worship which constitute the cultural or spiritual heritage of peoples,” *ibid.* See also Hague Regulations respecting the Laws and Customs of War on Land, Annex to Convention (IV) respecting the Laws and Customs of War on Land, 18 October 1907, Art. 27, reprinted in Schindler, *ibid.*, p. 55, (hereinafter HVR).

46 Article 51.7 of AP I forbids the use of “[t]he presence or movements of the civilian population or individual civilians ... to render certain points or areas immune from military operations, in particular in attempts to shield military objectives from attacks or to shield, favour or impede military operations,” a prohibition that is unquestionably customary. On the customary nature of the prohibition, see *CIHL, op. cit.* (note 29), Rule 97. See also ICC Statute, *op. cit.* (note 34), Art. 8.2(b)(xxiii).

The answer depends on whether the shields are voluntarily or involuntarily being used.⁴⁷ Voluntary human shields are directly participating in hostilities by attempting to defend a valid military objective. Indeed, in practical terms, they may be a more effective defence than actual weaponry, for high-tech forces can easily counter many ground-based defences, but few democracies can accept the negative political fallout from civilian deaths broadcast globally in near real-time. As codified in Article 51.3 of Additional Protocol I, civilians enjoy protection under international humanitarian law from attack “unless and for such time as they take a direct part in hostilities.”⁴⁸ It would be absurdly incongruent to suggest that they can be directly targeted, but also count in proportionality calculations. In such cases, therefore, the use of less precise weapon systems causing more incidental injury would be justified, except if voluntary shields qualified as protected civilians.

On the other hand, if civilians have been forced to act as shields or if the enemy is intentionally taking advantage of the proximity of civilian objects to avoid attack, the civilians and civilian objects retain their protected status and continue to factor into the proportionality analysis. Article 51.8 of Additional Protocol I directly addresses the issue: “Any violation of these prohibitions [including the prohibition on shielding] shall not release the Parties to the conflict from their legal obligations with respect to the civilian population and civilians...” This is a position adopted by a number of States, including the United States, in their guidance to military forces.⁴⁹

Precautions in attack

The one area where precision does have direct legal valence is with regard to precautions in attack. Article 57 of Additional Protocol I sets forth the requirements:

- “2. With respect to attacks, the following precautions shall be taken:
 - (a) those who plan or decide upon an attack shall:
 - (i) do everything feasible to verify that the objectives to be attacked are neither civilians nor civilian objects and are not subject to special protection

47 For a discussion of this point, see Michael N. Schmitt, “Targeting and humanitarian law: Current issues,” *Israel Yearbook on Human Rights*, Vol. 59, 2003, p. 59.

48 See generally, Michael N. Schmitt, “Humanitarian law and direct participation in hostilities by private contractors or civilian employees,” *Chicago Journal of International Law*, Vol. 5, 2005, p. 511; Michael N. Schmitt, “Direct participation in hostilities’ and 21st century armed conflict,” in Horst Fischer *et al.* (eds.), *Crisis Management and Humanitarian Protection: Festschrift für Dieter Fleck*, Berlin, 2004, pp. 505–529.

49 According to the United States Air Force manual *Air Force Operations and the Law*, “standards of conduct should apply equally to the attacker and defender. In other words, that the responsibility to minimize collateral injury to the civilian population not directly involved in the war effort remains one shared by the attacker and the defender; and that the nation that uses its civilian population to shield its own military forces violates the law of war at the peril of the civilians behind whom it hides. ...At the same time, however, targeters and judge advocates should consider the necessity of hitting the particular target, the expected results versus expected collateral damage, and ways to minimize civilian casualties, if possible.” *Air Force Operations and the Law*, Department of the Air Force, Judge Advocate General’s Department, 2002, p. 293. See also the discussion in “Joint doctrine for targeting,” *op. cit.* (note 4), at A-2 – A-3, and USAF “Intelligence targeting guide,” *op. cit.* (note 24), at A4.2.1.2.

but are military objectives within the meaning of paragraph 2 of Article 52 and that it is not prohibited by the provisions of this Protocol to attack them; (ii) take all feasible precautions in the choice of means and methods of attack with a view to avoiding, and in any event to minimizing, incidental loss of civilian life, injury to civilians and damage to civilian objects; (iii) refrain from deciding to launch any attack which 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;

(...)

3. When a choice is possible between several military objectives for obtaining a similar military advantage, the objective to be selected shall be that the attack on which may be expected to cause the least danger to civilian lives and to civilian objects.”

Note that the wording is contextual: “everything feasible,” “all feasible precautions,” “may be expected,” “becomes apparent,” and “unless circumstances do not permit.” The technology available to an attacker determines whether an action is feasible, reasonably expected, or apparent, as well as when choice is possible. In other words, belligerents bear different legal burdens of care determined by the precision assets they possess, a fact the ICRC highlighted in its official commentary on the Article.⁵⁰

This begs the question of whether States must acquire precision systems — both ISR assets and weapons systems — that permit them to engage in precision attacks. They do not. Although there may be a moral obligation to purchase precision technology within a State’s financial means, whether it does so is a matter of national policy, even where affordable technology would save many civilians and avoid extensive damage to civilian objects. The sole limitation on a State’s acquisition discretion is that it may not field weaponry that is inherently indiscriminate.⁵¹

With regard to the specific precautionary obligations in attack, the feasibility of target verification depends on ISR assets, which are, as discussed above, central to precision capabilities. Some States (and organizations such as NATO) possess extensive ISR assets. Must they employ them all before attacking? For instance, if a satellite could image a potential target, must an attacker acquire satellite imagery?

Not necessarily. The ICRC commentary on the provision states that interpretation of the standard must “be a matter of common sense and good faith. The person launching an offensive must take the necessary identification measures in good time in order to spare the population as far as possible.”⁵² The equally

50 “Some belligerents might have information owing to a modern reconnaissance device, while other belligerents might not have this type of equipment.” *Commentary, op. cit.* (note 38), para. 2199.

51 A standard that is, as noted, evolving along with technological advances in precision.

52 *Commentary, op. cit.* (note 38), para. 2198.

authentic French text, “tout ce qui est pratiquement possible” supports this explanation. This is also the position taken by the United Kingdom in its declaration upon ratification of Protocol I: “military commanders and others responsible for planning, deciding upon or executing attacks necessarily have to reach decisions on the basis of their assessment of the information from all sources which is reasonably available to them at the relevant time.”⁵³

As with much of humanitarian law, the Article 57.2(a)(i) standard is contextual. In other words, what would a reasonable attacker do in the same or similar circumstances? Decisional factors might include such matters as the time necessary to gather and process the additional information, the extent to which it would clarify any uncertainty, competing demands on the ISR system in question, and risk to it and its operators.

The commentary specifically cites precision warfare when discussing the requirement to exercise all feasible precautions in the choice of methods (tactics) or means (weapon system) of warfare.⁵⁴ As with doing everything feasible to verify a target, the requirement to resort to precision attack is not absolute, not even when precision is immediately available to the commander and would lessen collateral damage and incidental injury. There is no foundation to claims, for example, of the “emergence of a customary norm on the use of precision weaponry in urban settings”⁵⁵ or that States which possess precision-weapons must always use them.⁵⁶

Instead, “common sense and good faith” must prevail. A wise commander considers his or her weapons inventory in light of the possible length and intensity of the conflict before deciding on the weapon to be employed in particular strikes. The commander will at the same time estimate the relative gain in precision offered by the options available. For instance, Joint Direct Attack Munitions are somewhat less accurate than laser-guided munitions, all other things being equal. However, they are also more plentiful. Thus, the commander will limit laser-guided munitions to attacks in which they would significantly decrease collateral damage or incidental injury, especially if uncertain as to the length of the conflict. Doing so may even be more humane. As an example, if fighting in population centres is expected, it makes sense to retain the most precise weapons for urban settings in which targets are intermingled with civilians and civilian objects.

53 United Kingdom, Reservations and Declaration Made on Ratification, Corrected Letter of 18 June 1998, para. I (c), reprinted in Schindler, *op. cit.* (note 1), pp. 815-816.

54 *Commentary, op. cit.* (note 38), para. 2200.

55 Stuart W. Belt, “Missiles over Kosovo: Emergence, *lex lata*, of a customary norm requiring the use of precision munitions in urban areas,” *Naval Law Review*, Vol. 47, 2000, p. 174. Interestingly, he applies, in the present author’s view, the wrong provision of the law of international armed conflict to arrive at an incorrect legal principle. He asserts that the duty applies in the context of the principle of proportionality, whereas the better position is that if such a duty exists (it does not), it would derive from obligations regarding the selection of means of warfare (precautions in attack).

56 See Danielle L. Infeld, “Precision guided munitions demonstrated their pinpoint accuracy in Desert Storm: But is a country obligated to use precision technology to minimize collateral civilian injury and damage,” *George Washington Journal of International Law and Economics*, Vol. 26, 1992, p. 109, arguing against such a notion.

Finally, may cost be considered when deciding what weapon to employ? In other words, at a certain point does the additional cost outweigh the relative reduction in collateral damage and incidental injury so that it is no longer “feasible” to employ the costlier precision option? There is no basis in international humanitarian law for factoring expense into feasibility assessments. Once a belligerent purchases equipment and supplies it to its forces in the field, it must be used if it is available, makes good military sense and will minimize civilian impact.

Common sense also applies to selection of attack tactics (methods). One point of contention in this regard involves steps taken to protect the attacking force. For instance, some have claimed that an accidental attack on an Albanian refugee column during Operation Allied Force and the bombing of marked ICRC warehouses in Afghanistan could have been averted had the pilots flown low enough to see the targets.⁵⁷

Survival of the military personnel and equipment is an appropriate consideration when assessing the military advantage of an attack in the proportionality context. After all, an attack in which the personnel or equipment are lost is self-evidently not as advantageous as one in which they survive to fight again. But here the question is different. May an attacker adopt tactics, such as BVR (beyond visual range) attack or launching weapons from high altitude, that enhance the survivability of its forces if doing so also heightens the likelihood of collateral damage and incidental injury?

Some States have, as a general matter, accepted this possibility. For example, the United Kingdom stated in its declaration on ratification of Additional Protocol I that feasibility is “that which is practicable or practically possible, taking into account all circumstances ruling at the time, including humanitarian and military considerations.”⁵⁸ This is a reasoned approach. While there is no express legal requirement for members of the armed forces to place themselves or their subordinates at risk in order to avoid harm to civilians and civilian property, neither is it permissible to adopt tactics without regard to their impact on the civilian population. Rather, feasibility must be interpreted by balancing humanitarian and military considerations. It is reasonable to require military forces to assume some degree of risk to avoid collateral damage and incidental injury. They do so regularly. By this analysis, the greater the anticipated collateral damage or incidental injury, the greater the risk they can reasonably be asked to shoulder.

A.P.V. Rogers has addressed this very point with the wisdom of an experienced military officer:

“The law does not demand that there be no casualties in armed conflict. However, the law, political expediency and public sentiment combine to

57 For example, Human Rights Watch addressed the Djakovica Road incident, concluding that because “higher altitude seems to have impeded a pilot from adequately identifying a target,” “inadequate precautions were taken to avoid civilian casualties.” “Civilian deaths,” *op. cit.* (note 35).

58 Declaration, *op. cit.* (note 53), para. 1 (b). But, in contrast, the ICRC *Commentary* rejected contribution to “military success” as a component of feasibility, suggesting that it was “too broad” and expressing concern that in “invoking success...one might end up by neglecting the humanitarian obligations prescribed here.” *Commentary, op. cit.* (note 38), para. 2198 (in the context of verifying targets).

demand that casualties, whether among members of the armed forces or among the civilian population, should be reduced to the maximum extent that the exigencies of armed conflict will allow.⁵⁹

As with so much of international humanitarian law, an imprecise rule of reason must prevail.

Lastly, precision is having a dramatic effect on the Article 57 provision requiring selection of that target causing the least collateral damage and incidental injury from among those offering a like military advantage.⁶⁰ Precision warfare is opening up many more targets to attack, both because of an ability to better identify the target and because the resultant collateral damage and incidental injury is reduced. Of particular importance is the fact that this is occurring at the same time that target modelling is allowing planners to more accurately estimate collateral damage and incidental injury. Technology has expanded the universe of strikeable targets, while precluding a commensurate increase in civilian impact.

Perfidy and protected status

Finally, precision warfare has created an asymmetry on the battlefield that is unprecedented. Today, a low-tech force facing an adversary armed with state of the art C4ISR and weaponry has difficulty simply surviving, let alone confronting its opponent. Its troops and equipment can be readily located, reliably identified, and accurately targeted on a conventional battlefield far more easily than the other side. Asymmetry in precision compels the disadvantaged side to respond asymmetrically.

Increasingly, weaker forces are adopting tactics that exploit the protection civilians and civilian objects enjoy. Some tactics merely endanger civilians; others constitute outright international humanitarian law violations. Iraq has proved to be an unfortunate laboratory for such tactics.

One of the most common is wearing civilian clothes to avoid being identified as an enemy combatant (and attacked). It is not a violation of international humanitarian law to discard one's uniform. However, those who do so lose their combatant status.⁶¹ They consequently do not qualify as prisoners

59 A.P.V. Rogers, *Law on the Battlefield*, Manchester University Press, Manchester and New York, 2nd ed., 2004, p. 108.

60 It was described in the commentary as accepted by the Conference "without much discussion." *Commentary, op. cit.* (note 38), para. 2226.

61 The relevant provisions of Article 4 A of the Third Geneva Convention extend combatant status to:
 "(1) Members of the armed forces of a Party to the conflict, as well as members of militias or volunteer corps forming part of such armed forces.
 (2) Members of other militias and members of other volunteer corps, including those of organized resistance movements, belonging to a Party to the conflict and operating in or outside their own territory, even if this territory is occupied, provided that such militias or volunteer corps, including such organized resistance movements, fulfil the following conditions:
 (a) that of being commanded by a person responsible for his subordinates;
 (b) that of having a fixed distinctive sign recognizable at a distance;
 (c) that of carrying arms openly;

of war if captured⁶² and, because only combatants have the right to “directly participate” in hostilities, they lack immunity from prosecution under domestic law for acts committed while engaged in fighting.⁶³ But albeit lawful under international humanitarian law, their wearing of civilian clothes complicates, as intended, an opponent’s ability to distinguish them from the civilian population, thereby placing the latter at increased risk of mistaken attack.

Iraqi forces also routinely feigned specially protected status to avoid being identified, for instance by misusing protective emblems. They seized ambulances for use as scout vehicles and marked the Ba’ath Party building in Basra with the ICRC emblem.⁶⁴ Use, for other than their intended purposes, of the distinctive emblems of medical and religious personnel, transports and units or of the personnel, property and activities of the International Red Cross and Red Crescent Movement is a long-standing international humanitarian law violation.⁶⁵ Iraqi forces furthermore regularly used human shields and civilian objects, a practice discussed above, in order to deter precision attacks.

In war, attacks must be conducted even at high risk against an enemy with advanced precision capabilities. One tactic adopted in Iraq for this purpose is perfidy. Article 37 of Additional Protocol I defines perfidy as follows:

“1. It is prohibited to kill, injure or capture an adversary by resort to perfidy. Acts inviting the confidence of an adversary to lead him to believe that he

(d) that of conducting their operations in accordance with the laws and customs of war.”

Geneva Convention relative to the Treatment of Prisoners of War, 12 August 1949, Art. 142, reprinted in Schindler, *op. cit.* (note 1), p. 507.

These four conditions are inherent in the meaning of “armed forces”; they also apply to the persons referred to in Article 4A(1). As noted by Michael Bothe *et al.*, “[i]t is generally assumed that these conditions were deemed, by the 1874 Brussels Conference and the 1899 and 1907 Hague Peace Conferences, to be inherent in the regular armed forces of States. Accordingly, it was considered unnecessary and redundant to spell them out in the Conventions.” Michael Bothe *et al.*, *New Rules for Victims of Armed Conflict*, Martinus Nijhoff Publishers, The Hague/Boston/London, 1982, p. 234. See also discussion in *CIHL, op. cit.* (note 29), at 15.

62 While it is not a war crime to attack the enemy, it may amount to a criminal offence (e.g. murder) under the national law of capturing forces. Lacking immunity, such persons may be prosecuted in the courts of any State with subject matter over the offence and personal jurisdiction over the offender. This point is reflected in *CIHL, op. cit.* (note 29), Rule 106.

63 “Members of the armed forces of a Party to a conflict (other than medical personnel and chaplains covered by Article 33 of the Third Convention) are combatants, that is to say, they have the right to participate directly in hostilities.” AP I, *op. cit.* (note 1), Art. 43.2. The classic article on the subject is the one by Richard R. Baxter, “So-called ‘unprivileged belligerency’: Spies, guerrillas and saboteurs,” *British Yearbook of International Law*, 1952, p. 323, reprinted in *Military Law Review*, 1975, Bicentennial Issue, p. 487.

64 Party buildings were regularly used as military supply depots and mustering points. *Off Target, op. cit.* (note 9), p. 70.

65 The prohibition dates back to the 1863 Lieber Code and also appears in the 1899 and 1907 Hague Regulations, the 1906, 1929, and 1949 Geneva Conventions, and Additional Protocol I. See: Instructions for the Government of Armies of the United States in the Field (Lieber Code), promulgated as General Orders No. 100, US Department of the Army, Art. 117, reprinted in Schindler, *op. cit.* (note 1), p. 3; Convention (II) with Respect to the Laws and Customs of War on Land, with annexed Regulations, of 29 July 1899, Art. 23(f), *ibid.*, p. 55; HIVR, *op. cit.* (note 45), Art. 23(f); Convention for the Amelioration of the Condition of the Wounded in Armies in the Field, 6 July 1906, Arts. 27–28, reprinted in Schindler, *op. cit.* (note 1), p. 385; Convention for the Amelioration of the Condition of the Wounded in Armies in the Field, 27 July 1929, Arts. 24 & 28, *ibid.*, p. 409; GC I, *op. cit.* (note 45), Arts. 39, 44, 53, 54; Convention for the Amelioration of the Condition of the Wounded, Sick, and Shipwrecked Members of Armed Forces at Sea, 12 August 1949, Arts. 41, 44, 45, reprinted in Schindler, *op. cit.* (note 1), p. 485; AP I, *ibid.*, (note 1), Art. 38.1.

is entitled to, or is obliged to accord, protection under the rules of international law applicable in armed conflict, with intent to betray that confidence, shall constitute perfidy. The following acts are examples of perfidy: (a) the feigning of an intent to negotiate under a flag of truce or of a surrender; (b) the feigning of an incapacitation by wounds or sickness; (c) the feigning of civilian, non-combatant status; and (d) the feigning of protected status by the use of signs, emblems or uniforms of the United Nations or of neutral or other States not Parties to the conflict.”⁶⁶

As noted above, Iraqi forces operated in civilian clothes to avoid being identified and killed. Although lawful *per se*, when the feigned civilian status was part of a tactic for approaching and attacking Coalition forces, it was perfidious. Suicide bombers also fall into this category because their civilian appearance is what makes it possible for them to get close enough to be deadly.⁶⁷ Other perfidious actions during Operation Iraqi Freedom included feigning surrender and using stolen ambulances in the hope that Coalition forces would become less vigilant and more vulnerable to attack.⁶⁸

Ultimately, precision advantages may become so asymmetrically deadly for a disadvantaged side that they begin to attack a centre of gravity other than the enemy’s military.⁶⁹ As has been tragically demonstrated in Iraq and elsewhere, the civilian population and civilian objects are the most likely to be targeted, for it is nearly impossible to protect them against a determined opponent.⁷⁰ Although attacking such “soft targets” is a perversely logical response to battlefield inferiority, it is nevertheless a clear and inexcusable violation of international humanitarian law’s most basic tenet, distinction. The core prohibitions are found in Articles 48, 51 and 52 of Additional Protocol I:

“Art 48: In order to ensure respect for and protection of the civilian population and civilian objects, the Parties to the conflict shall at all times distinguish

66 See also the 1907 Hague Regulations ban on “improper use of a flag of truce, of the national flag or of the military insignia and uniform of the enemy, as well as the distinctive badges of the Geneva Convention,” a prohibition that is now unquestionably customary law, HVR, *op. cit.* (note 45), Art. 23(f); *CIHL, op. cit.* (note 29), ch. 18; International Military Tribunal (Nuremberg), Judgment and Sentences, 1946, *American Journal of International Law*, Vol. 41, 1947, p. 218. The reference is to the Geneva Convention of 1864. Convention for the Amelioration of the Condition of the Wounded in Armies in the Field, 22 August, 1864, reprinted in Schindler, *op. cit.* (note 1), p. 365.

67 This would include civilian bombers who wore civilian clothes in order to get close enough to detonate their explosives.

68 See, e.g. Glenn Collins, “Allied advances, tougher Iraqi resistance, and a hunt in the Tigris,” *New York Times*, 24 March 2003, p. 1; Brian Knowlton, “Bush tells of ‘good progress’ but says war has just begun,” *International Herald Tribune*, 24 March 2003, p. 6. The said actions are specifically banned in AP I, Art. 37.1 (a).

69 Centres of gravity consist of “[t]hose characteristics, capabilities, or sources of power from which a military force derives its freedom of action, physical strength, or will to fight.” DoD Dictionary, *op. cit.* (note 8).

70 There may be many purposes for attacking civilians: disrupting a coalition, as in Iraqi targeting of Israeli cities in 1991; intimidating non-governmental and intergovernmental organizations, as in the attacks on the UN and ICRC headquarters in Iraq; making the conflict appear too costly to belligerent States and citizens, as in the Iraqi kidnapping and murder of foreign hostages; or targeting one’s own population to deter cooperation with the enemy, as in attacks against Iraqi security forces and law officials.

between the civilian population and combatants and between civilian objects and military objectives and accordingly shall direct their operations only against military objectives.

Art 51, paragraph 2: The civilian population as such, as well as individual civilians, shall not be the object of attack. Acts or threats of violence the primary purpose of which is to spread terror among the civilian population are prohibited.

Art 52, paragraph 1: Civilian objects shall not be the object of attack or of reprisals.”

They are undoubtedly customary in nature, and distinction has been cited as a “cardinal” principle of international humanitarian law by the International Court of Justice.⁷¹

Conclusion

There is no doubt that precision operations have opened up new possibilities for avoiding the harm to civilians and their property that is the inevitable result of armed conflict. In that sense, advances in precision represent a positive trend. Further, as weaponry becomes more precise, interpretation of international humanitarian law is becoming increasingly demanding for an attacker. So long as such interpretations do not depart from the law or ignore the realities of military necessity, this too is to be welcomed.

However, when the allure of precision creates exaggerated expectations of its possibilities such that those beyond the battlefield impose unreasonable demands on the military or postulate norms that go beyond treaty or custom, international humanitarian law is weakened. *Lex ferenda* must be clearly distinguished from *lex lata*. Moreover, to be respected, international humanitarian law must continue to rationally balance humanitarian concerns with military necessity. The balancing may shift along with developments in the nature of warfare, but must remain at the heart of international humanitarian law.

Finally, the international humanitarian law community must be sensitive to the fact that when precision capabilities are possessed unequally on the battlefield, the resulting asymmetry may lead the disadvantaged side to resort to tactics that violate the most basic principles of international humanitarian law. This is not to suggest that high-tech forces should abandon their precision technologies to make war more humane. Obviously, any such suggestion is absurd. Rather, it is a call for the community to redouble its efforts to safeguard the principles of international humanitarian law in the face of the likelihood that others will seek to justify their abandonment.

⁷¹ See for example, *CIHL*, *op. cit.* (note 29), ch. 2; *Nuclear Weapons case*, *op. cit.* (note 37), para. 78.