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For Whom the Little Bells Toll: Recent Judgments by International Tribunals on the Legality of Cluster Munitions

Virgil Wiebe*

No man is an island, entire of itself; every man is a piece of the continent, a part of the main . . . . [A]ny man's death diminishes me, because I am involved in mankind, and therefore never send to know for whom the bell tolls; it tolls for thee.

John Donne, Devotions upon Emergent Occasions (1624)1

Citizens of the Sibenik municipality have been warned to be cautious on account of a large number of unexploded so-called zvoncici [little bell] devices, which are spread around after missiles filled with cluster bombs fell in the area.

Croatian News Report, March 19932

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I. INTRODUCTION

“Little bells” is a Serbo-Croatian reference to cluster bomblets.\(^3\) Two international tribunals recently have found defendants liable for civilian deaths caused by cluster munitions. These decisions may herald a turning point in the regulation of these weapons. In 2004, the Eritrea-Ethiopia Claims Commission (“EECC”) held Eritrea liable for the deaths of civilians killed in cluster munition strikes on Mekele, Ethiopia on June 5, 1998 (the “Eritrea judgment”).\(^4\) On June 12, 2007, the International Criminal Tribunal for the Former Yugoslavia (“ICTY”) held the former president of the now-defunct Serbian Republic of Krajina criminally liable for deaths and injuries resulting from cluster munition rocket attacks on Zagreb, Croatia on May 2 and 3, 1995 (the “Martić judgment”).\(^5\)

Cluster munitions spread large numbers of smaller bomblets, often referred to as submunitions, over wide areas often the size of several football fields.\(^6\) They are dropped from the air, delivered in artillery shells, or

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packed into rocket warheads. In many cases, a significant percentage of the bomblets fail to explode on impact, creating virtual minefields of unexploded ordnance.

Cluster bombs came back onto the world stage during the 2006 war between Israel and Hezbollah, with both sides of the conflict deploying the weapons in irresponsible ways. By early 2007, momentum had gathered for a treaty banning cluster bombs. Efforts are also underway at the national level to regulate cluster munition use. The Eritrea and Martić judgments have much to contribute to the current debate over how to eliminate or limit the humanitarian impact of cluster munitions.

These cases are the only ones to date to address several humanitarian law issues in the debate over cluster munition regulation. Adjudicators grappled with whether the characteristics of cluster munitions can be used as evidence of intent to attack civilians or of indiscriminate and disproportionate attacks; what precautions users of these weapons must take in advance; and what role foreknowledge about the wide-area nature and landmine-like effects of cluster munitions have on culpability.

While both judgments held the defendants liable, they present a study in contrasts. Both cases addressed the deaths of civilians in densely populated areas. The EECC did not overtly question the use of cluster munitions near civilian areas, but the ICTY did. The EECC dismissed charges of intentional targeting of civilians; the ICTY used the very nature of cluster munitions as evidence of intent to target civilians (and in the alternative held that the cluster munitions were indiscriminate and disproportionate as used). Both the EECC and the ICTY held that commanders should act to prevent future strikes when they have foreknowledge about the adverse humanitarian effects of weaponry in actual combat usage.

The Martić judgment breaks important new ground by using cluster munitions' characteristics to hold the defendant guilty for deaths, lasting


injuries, and destruction caused by cluster munitions. At the same time, the ICTY missed the opportunity to further extend international law in the area of longer term effects of unexploded ordnance left behind when cluster munitions are used.

This article analyzes the two judgments in great detail, considering both the evidence presented as well as additional information publicly available at the time of the attacks. Section II briefly introduces relevant international humanitarian law. Sections III and IV present the holding and an analysis of the Eritrea case. Sections V through VII present the holding and an analysis of the Martić case. Section VIII presents lessons to be learned from the cases. The conclusion addresses why these two cases cannot be written off as anomalies.

II. A BRIEF REVIEW OF RELEVANT INTERNATIONAL HUMANITARIAN LAW

These decisions address relevant international humanitarian law principles. These principles find their clearest exposition in the 1977 Additional Protocol I to the Geneva Conventions, portions of which have been recognized as constituting customary international law. What follows is the briefest of primers.

A. Distinction

Additional Protocol I of the Geneva Conventions lays out the principle of requiring belligerents to distinguish between civilian and military objects and generally has been recognized as embodying customary international law.

Article 51(2) from Additional Protocol I (applying to international conflicts) and Article 13(2) from Additional Protocol II (applying to internal

12. See infra notes 17-33 and accompanying text.
13. See infra notes 34-124 and accompanying text.
14. See infra notes 125-332 and accompanying text.
15. See infra notes 333-96 and accompanying text.
16. See infra notes 397-402 and accompanying text.
17. "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 between the civilian population and combatants and between civilian objects and military objectives and accordingly shall direct their operations only against military objectives." Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts, art. 48, Dec. 12, 1977, 1125 U.N.T.S. 3 [hereinafter Geneva Protocol I].
conflicts) lay out the basic rule against making civilians and civilian populations the object of attack.  

Article 51(6) of Additional Protocol I attempts to outlaw reprisals against civilians. Because reprisals usually cannot be directed against the party responsible for the earlier attack, reprisals often simply lead to a spiral of violence. Unfortunately, the provisions of Article 51(6) may not have reached the level of customary international law, allowing those not a party to Additional Protocol I to claim the "right" to reprisal when the following criteria are met:

"subsidiarity (failure of all other available means); notice (formal warning of the planned action), proportionality (the damage and suffering inflicted on the adverse party not to exceed the level of damage and suffering resulting from its unlawful conduct), temporary character (termination of the reprisal when the adversary stops violating the law)."

B. Discrimination

The discrimination principle stresses that care must be taken in the selection of targets, as well as the means and methods of attack, to limit the damage to civilians even when legitimately targeting military objectives.

Article 51(4) of Additional Protocol I states that "[i]ndiscriminate attacks are prohibited" and defines indiscriminate attacks as follows:

(a) those which are not directed at a specific military objective;

18. "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." Geneva Protocol I, supra note 17, art. 51(2); Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of Non-International Armed Conflicts, art. 13(2), June 8, 1977, 1125 U.N.T.S. 609 [hereinafter Geneva Protocol II] (the language of Additional Protocol I, Article 51(2) and Additional Protocol II, Article 13(2) are identical).


20. Frits Kalshoven, Reprisals, in CRIMES OF WAR 309 (Roy Gutmann & David Rieff eds., 1999), available at http://www.crimesofwar.org/thebook/reprisal.html (last visited Oct. 23, 2007). These features have led to a trend to ban reprisals wherever possible. As a result, all four Geneva Conventions of 1949 categorically prohibit reprisals against the persons and objects they are designed to protect. Likewise, Article 20, which concludes the part of Additional Protocol I of 1977 on the wounded, sick, and shipwrecked, prohibits reprisals against the persons and objects protected by that part.

Id.

21. Id. "While these bans are generally accepted as entirely justified, the provisions in Articles 51 through 55 of Additional Protocol I prohibiting reprisals against civilians and civilian objects are highly controversial, and some States have entered reservations to their treaty ratifications." Id.

22. Id. (emphasis added). "A reprisal may be 'in kind' (violating the same or a narrowly related rule of the laws of armed conflict) or 'not in kind' (violating a nonrelated rule)." Id.
(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.\(^2\)

Article 51(5) goes on to define indiscriminate attacks, which consist of "an attack by bombardment by any methods or means which treats as a single military objective a number of clearly separated and distinct military objectives located in a city, town, village or other area containing a similar concentration of civilians or civilian objects."\(^3\)

One must also answer the question of just what constitute civilian populations or objects, as opposed to military objectives. William Fenrick has succinctly summarized the law concerning military objectives, describing them as

"(i) combatants; (ii) civilians taking a direct part in hostilities; and (iii) in so far as objects are concerned, those objects which by their nature, location, purpose or use make an effective contribution to military action and whose total or partial destruction, capture or neutralisation in the circumstances ruling at the time, offers a definite military advantage."\(^4\)

Objects normally used for civilian purposes should be presumed to be so used, unless they meet the above criteria.\(^5\) According to the recent codification of customary international humanitarian law by the Red Cross, "[c]ivilian objects are all objects that are not military objectives"\(^6\) and

\(^{23}\) Geneva Protocol I, supra note 17, art. 51(4).

\(^{24}\) Id. art. 51(5)(a).

\(^{25}\) William J. Fenrick, The Prosecution of Unlawful Attack Cases Before the ICTY, 7 Y.B. INT'L. HUM. L. 153, 170 (2004) (citing Geneva Protocol I, supra note 17 art. 43, 48, 51(3), 52(2)). The definition of military objective found in Article 52 has been widely accepted and may be seen as constituting customary international law. Id. at 172 (citing JEAN-MARIE HENCKAERTS & LOUISE DOSWALD-BECK, CUSTOMARY INTERNATIONAL HUMANITARIAN LAW: VOL. I: RULES 29-32 (2005)).

\(^{26}\) Geneva Protocol I, supra note 17, art. 52(3). The non-exclusive list of examples includes places of worship, houses or other dwellings, and schools. Id.

\(^{27}\) HENCKAERTS & DOSWALD-BECK, supra note 25, at 32.
"[c]ivilians are persons who are not members of the armed forces. The civilian population comprises all persons who are civilians."²⁸

The situation gets a bit more complicated when, as in the cases considered here, civilians are located near military objectives. While there is no treaty governing this situation, the position of many countries matches that of Australia: "The presence of noncombatants in or around a military objective does not change its nature as a military objective. Noncombatants in the vicinity of a military objective must share the danger to which the military objective is exposed."²⁹ Means of communication are generally considered to be legitimate military targets. Airfields have been identified as such by many countries.³⁰

C. Proportionality

Proportionality, a closely related principle of discrimination, holds that the anticipated collateral damage from an otherwise legitimate attack cannot be excessive in relation to any anticipated military advantage.³¹ How this macabre calculus of war must be calibrated has been the subject of much debate.

D. Taking Reasonable Precautions

Parties to a conflict are obligated to take precautions in planning attacks in order to spare civilians, civilian populations, and civilian objects. This includes choosing weapons with the purpose of minimizing damage to civilians and civilian objects.³² Those being attacked must protect civilians

²⁸. Id. at 17.
³⁰. Id. at 211-14.
³¹. "[A]n 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" is indiscriminate. Geneva Protocol I, supra note 17, art. 51(5)(b).
³². Id. art. 57. The Article is entitled "Precautions in Attack" and specifies the following:
   1. In the conduct of military operations, constant care shall be taken to spare the civilian population, civilians and civilian objects.
   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 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,
“to the maximum extent feasible,” including moving people away from military targets and not locating military objectives in populated areas. These principles provide a useful backdrop to more detailed consideration of the cases.

III. THE 1998 ATTACK ON MEKELE, ETHIOPIA: FIRE RAINING FROM THE SKY

“I don’t remember how it came, but it felt like fire was raining from the sky,” said Tewhaba Berhe . . . . “My baby was outside playing when she got hit. She was playing with other children.” Helen, 4,

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;

(b) an attack shall be cancelled or suspended if it becomes apparent that the objective is not a military one or is subject to special protection or that the attack 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;

(c) effective advance warning shall be given of attacks which may affect the civilian population, unless circumstances do not permit.

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.

4. In the conduct of military operations at sea or in the air, each Party to the conflict shall, in conformity with its rights and duties under the rules of international law applicable in armed conflict, take all reasonable precautions to avoid losses of civilian lives and damage to civilian objects.

5. No provision of this article may be construed as authorizing any attacks against the civilian population, civilians or civilian objects.

Id. 33. Geneva Protocol I, supra note 17, art. 58. Article 58 provides:

Precautions against the effects of attacks . . . . The Parties to the conflict shall, to the maximum extent feasible:

(a) without prejudice to Article 49 of the Fourth Convention [prohibiting mass forcible transfers and deportations], endeavour to remove the civilian population, individual civilians and civilian objects under their control from the vicinity of military objectives;

(b) avoid locating military objectives within or near densely populated areas;

(c) 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.

Id.
was the second-youngest victim . . . . [S]he lay in critical condition in the local hospital, a bandage the size of an adult's hand taped over the shrapnel wound in her abdomen.  

The 1998 lethal cluster bomb attack on Mekele by Eritrean aircraft at the outbreak of hostilities with Ethiopia killed scores of civilians and fanned the flames of the conflict. Before addressing the claim arising from that incident at the EECC after the war, the article discusses the context of the attack.

Following the decades-long civil war to expel the communist regime in Ethiopia, Eritrea had split from the rest of Ethiopia in a relatively amicable fashion in the early 1990s. Left unresolved was the exact demarcation of the border between the two countries. From May 1998 until early 2000, Eritrea and Ethiopia engaged in a border war resulting in deaths, injuries, and expulsions of large numbers of civilians on both sides of the border.

IV. THE ERITREA-ETHIOPIA CLAIMS COMMISSION HOLDS ERITREA ACCOUNTABLE FOR CLUSTER BOMB DEATHS AND INJURIES.

A. The Creation of the Eritrea-Ethiopia Claims Commission (EECC) and Applicable Humanitarian Law

Following the conflict, the two countries established the EECC to resolve cross-accusations of international law violations. The Commission is charged with "applying relevant rules of international law," drawn from the following sources:

35. Ethiopia, Eritrea Peace Plan Rejected, DALLAS MORNING NEWS, June 20, 1998, at 12A.
37. Id.
38. See generally ASSEFAW BARIAGABER, WRITENET INDEPENDENT ANALYSIS, ERITREA: CONFLICT AND IN VOLUNTARY POPULATION DISPLACEMENT 1-11 (July 2000) (commissioned by UN High Comm'r for Refugees) available at http://www.unhcr.org/cgi-bin/texis/vtx/refworld/rwmain?docid=3ae6a6c90; see also BARNES, supra note 36, at 11-12.
40. EECC Agreement, supra note 39, art. 5(13).
1. International conventions, whether general or particular, establishing rules expressly recognized by the parties;

2. International custom, as evidence of a general practice accepted as law;

3. The general principles of law recognized by civilized nations;

4. Judicial and arbitral decisions and the teachings of the most highly qualified publicists of the various nations, as subsidiary means for the determination of rules of law.  

The Commission determined that the Geneva Conventions of 1949 and relevant portions of 1977 Additional Protocol I constituted customary international law applicable to the conflict, along with the Hague Regulations of 1907. It also held that “there are elements in Protocol II of 1980 [of the Conventional Weapons Treaty ("CCW")], such as those concerning recording of mine fields and prohibition of indiscriminate use, that express customary international law. Those rules reflect fundamental humanitarian law obligations of discrimination and protection of civilians.”

B. The Decision of April 28, 2004

Ethiopia included allegations about the Mekele attack in its second claim against Eritrea. The decision of April 24, 2004 involved more
allegations than simply those concerning the attack on Mekele. Additional allegations included the rape of civilians, forced labor, the use of landmines, looting and property destruction, abductions, and other offenses.  

1. The Events of June 5, 1995: Eritrea Cluster Bombs an Airport (Twice) and a School (Twice)  

On June 5, 1998, the two countries exchanged air strikes, with Ethiopia hitting the Asmara airport and Eritrea bombing the Mekele airport. Military aircraft were housed at both airports and therefore according to the EECC the airports were “unquestionably legitimate military objectives under international humanitarian law.” The claim arose not from the damage done to the Mekele airport, but was based upon the fact that “Eritrean aircraft also dropped cluster bombs that killed and wounded civilians and damaged property in the vicinity of the Ayder school and the surrounding neighborhood in Mekele town.” Ethiopia stated that the bombings “killed fifty-three civilians, including twelve school children, and wounded 185 civilians, including forty-two school children.”

Four aircraft attacked Mekele, all approaching over “densely populated residential areas.” The first aircraft “had no bombs and strafed the airport.” The second aircraft “dropped cluster bombs on or near the airport runway at about 3:30 p.m.” The dispute centered on the whether and to what extent the third and fourth “sorties” struck the Ayder School and neighborhood, which are located on the northwest side of town about seven kilometers from the airport. Eritrea claimed only one accidental attack occurred, whereas Ethiopia claimed both of the last two attacks intentionally targeted civilians.

a. The Third Sortie: Two Cluster Bombs Hit Ayder School at 5:00 p.m.

The third plane dropped its “two cluster bombs over the Ayder School and neighborhood at about 5:00 p.m.” Eritrea claimed to have targeted “anti-aircraft defenses northwest of the airfield and at least four kilometers from the Ayder neighborhood.”

47. Id. ¶ 101.
48. Id.
49. Id.
50. Id. ¶ 103.
51. Id.
52. Id.
53. Id.
54. Id. ¶ 104.
55. Id. ¶ 103.
56. Id. ¶ 105. The pilot claimed success in hitting that target. Id.
b. The Fourth Sortie: Another Cluster Bomb Hits the Ayder Neighborhood an Hour Later.

The EECC found that the fourth plane dropped another cluster bomb on the Ayder neighborhood at about 6:00 p.m., despite Eritrea claiming that the fourth sortie successfully targeted the airport.57 Eritrea also claimed that targeting civilians would have brought on reprisals.58 Ethiopia claimed Eritrea deliberately and intentionally attacked the civilian area with both the third and fourth sorties.59 Ethiopia argued that intentionality could be inferred based in part on the fact that cluster bombs from two different planes hit the civilian areas an hour apart.60 The EECC found that two Eritrean planes had dropped cluster bombs on civilian areas an hour apart, but not necessarily intentionally.61

2. The Decision: Eritrea Failed to Take Feasible Precautions and is Held Liable

The Commission held Eritrea liable for "the deaths, wounds and physical damage to civilians and civilian objects"62 for "failing to take all feasible precautions to prevent two of its military aircraft from dropping cluster bombs in the vicinity of the Ayder School and its civilian neighborhood in the town of Mekele."63 The EECC relied upon Additional Protocol I, Article 57, "the essence of which is that all feasible precautions to prevent unintended injury to protected persons must be taken in choosing targets, in the choice of means and methods of attack and in the actual conduct of operations."64 The Commission did "not question either the . . . choice of Mekele airport as a target, or [Eritrea's] choice of weapons."65

The EECC exercised considerable restraint in not finding intentional targeting of civilians by accepting the argument that Eritrea had reason to concentrate its limited air power on attacking the Ethiopian airport in order

57. Id. ¶ 105, 107.
58. Id. ¶ 106.
59. Id. ¶ 105.
60. Id. ¶¶ 102, 105, 106.
61. Id. ¶¶ 107, 108.
62. Id. ¶ 113.
63. Id. ¶ V.D.9.
64. Id. ¶ 110.
65. Id.
to avoid reprisals. The commission also essentially found that incompetence proved there was no intent to bomb civilians—"utterly inexperienced" pilots and programmers could have resulted in mis-programmed computers or pilot errors. In the commission's words, "[f]easible precautions" do not include making "practically impossible" pilot choices when only a very few experienced personnel were available.

Eritrea conducted the operations poorly. Two runs did not come close to hitting their intended target, killing civilians instead. Eritrea exhibited a "lack of essential care," compounded by a "failure to take appropriate actions afterwards to prevent future recurrence." The Eritrean Deputy Air Commander, who was aware at the time of news reports of the initial strike on civilian areas, limited his questioning of the first pilot and failed to question the second pilot who later bombed the same area. Neither pilot was made available for questioning by the EECC. Eritrea presented no evidence that training or doctrine had been changed to prevent recurrence. The Commission could not determine why cluster bombs hit the Ayder neighborhood because Eritrea declined to provide relevant evidence.

3. Analysis of the Decision


The EECC found liability while avoiding a finding of intentional targeting of civilians. It "acknowledge[d] the long odds against two consecutive sorties making precisely the same targeting error, particularly in view of Eritrea's representation that the two aircraft's [sic] computers were programmed for two different targets." The Commission came perilously close to endorsing utter incompetence by implying that it would have been "practically impossible" for Eritrea to adequately train enough pilots and programmers. Such reasoning suggests that nations may escape liability

66. Id. ¶ 108.
67. Id. ¶ 109.
68. Id. ¶ 110.
69. Id.
70. Id. ¶ 111.
71. Id.
72. Id.
73. Id. ¶ 112.
74. Id. ¶ 112 & n.39 (citing Corfu Channel (UK v. Alb.), 1949 I.C.J. 18 (April 9)).
75. Id. ¶ 109.
76. Id. ¶ 110.
when they acquire advanced technology but fail to make the effort to properly train enough military personnel in its use.

The EECC should have questioned Eritrea's choice of cluster munitions to attack targets near populated areas, based on the nature of the weapon itself. Such an approach would have reinforced the finding of a failure to take adequate precautions. Evidence of the nature of the weapon here could be used to question the means of attack without having to consider whether Eritrea intended to attack only civilians. Article 57(2)(a), subsections (ii) and (iii), dictate that attack planners must

(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 or civilian life, injury to civilians and damage to civilian objects [and/or]  

(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.77

The Commission criticized the methods of attack (i.e., the "lack of essential care" in carrying out the attacks) while not taking issue with the means of attack.78 Airports are legitimate military targets, and some types of cluster munitions might be considered appropriate weapons to attack airfields,79 but the legitimacy of a target alone does not end the analysis. The means of attack, in this case cluster bombs, should have been questioned.

There has been at least one other case in which an attack on an airfield by air-dropped munitions resulted in significant civilian injuries in nearby civilian concentration.80 On May 7, 1999, a NATO aircraft dropped cluster munitions over Nis, Serbia while targeting an airport.81 At least fourteen civilians were killed and twenty-eight injured when cluster submunitions fell

77. Geneva Protocol I, supra note 17, ch. IV art. 57(2)(a)(ii)-(iii).
79. See infra note 228.
81. Id. at 140.
on three distinct civilian neighborhoods. NATO claimed equipment malfunction as a defense. Cluster munition “duds” littered the area after the attack. Human rights organizations sharply criticized NATO, not for target choice, but for weapon choice. Using cluster bombs where the target was surrounded by civilian concentrations raised questions about whether all feasible precautions had been taken.

An arguable distinction between the Nis and Mekele attacks could be that the Mekele airport was more clearly separated from civilian concentrations than was the case in Nis. But “accidents” in both cases resulted in massive civilian deaths and injuries in situations where a weapon known to have wide-area effects was nonetheless used against a target near civilians. If one accepts the argument that there was such a clear separation between Mekele and the airport, then the bombing of a civilian area with a cluster munition should lead to a rebuttable inference that the attack was illegal due to the wide-area effects. The CB-250-K cluster bomb used in the attack on Mekele had a known wide-area effect and a known propensity to leave behind duds.

Information about the CB-250-K was publicly available before the attack in question. The Cardoen company, the maker of the munition,
began producing cluster bombs in the early 1980s. Cardoen CB-250-K cluster bombs contain 240 PM-1 bomblets that can be dispersed over an elliptical footprint of up to 50,000m² (i.e., five hectares, or over 12 acres). An ellipse that size is 275m x 230m. The weapon is a "dumb" bomb in that after being dropped from the aircraft, there are no guidance systems that direct it to its target.

Each bomblet is only about forty centimeters in length and five centimeters in diameter. Each bomblet can penetrate 150mm of steel armor, injure and kill people when its pre-fragmented casing explodes, and start fires as a result of its highly incendiary zirconium element. The PM-1 bomblets have been known to have a "high failure rate." In well-publicized attacks, Sudan used cluster bombs (of Russian and Chilean design, including the PM-1) against civilian populations between 1995 and 2000. The attacks killed and injured civilians and struck schools and hospitals. Unexploded duds denied access to land long after the attacks.

These weapons' characteristics should have been known to the Eritrean air force, but there is no indication that the EECC had this or similar information when it made its decision. It is not possible to gain direct

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91. See, e.g., David Harvey, *Chile's Defense Firms Provide Well For the Country's Need*, DEF. & FOREIGN AFF., May 1985, at 28.

92. According to one profile of the CB-250-K, the CB-500 elliptical shaped footprint can cover an area of approximately 50,000km², including a central zone of severe destruction of some 20,000km², depending on operational release parameters such as fuze time setting . . . , release altitude, aircraft speed and dive angle. The CB-250-K is reported to have about the same destructive footprint, but has a larger range of delivery methods.

93. The *Janes* article describes how the bomb is attached to aircraft with standard lugs and how the release speed and altitude affect bomblet dispersion. Id. No mention is made of any precision guidance systems for the canister itself. Id.

94. Id.

95. Id.


98. MCGRAFF, supra note 96; Rich, supra note 97.

99. The partial award decision does note that the Eritrean aircraft flown by the Air Force "allegedly had computerized aiming systems that are designed to release bombs at the proper time to hit a target when the pilot sees it aligned with a 'heads up' display in the cockpit." Partial Award-
access to the evidence presented or even to the memorials presented by the parties. Perhaps Ethiopia did not raise the nature of the weapon for fear that its own use of cluster munitions in the conflict might come into question.

The Commission rightly criticized the Eritrean commander for not doing enough after the first strike and the reports of civilian injuries. The second attack could have been called off in compliance with Additional Protocol Art. 57(2)(b), which calls for cancellation or suspension of an attack when disproportionate civilian damage can be expected.

The Commission therefore indirectly took into account the nature of the weapon as used—its landing on civilian areas and doing so much damage should have been acknowledged and acted upon. Had the EECC explicitly identified the means of attack as a source of the failure to take adequate precautions, it would have driven home more effectively the need for such precautions.

Ethiopia, 43 I.L.M. 1275, ¶ 103(1) (Eritrea-Ethiopia Claims Comm'n Apr. 28, 2004). The Eritrean government also claimed that the bomb release computer had been set to hit military targets. Id. ¶ 105.

100. According to counsel for both parties in the case, the memorials submitted by the parties are confidential pursuant to Commission policy. E-mail from Ed Rowe, International Law and Dispute Resolution Counsel, Hunton & Williams Law Firm, to Virgil Wiebe, Director of Clinical Education and Associate Professor, University of St. Thomas Law School (July 18, 2006, 14:47:00 CST) (Mr. Rowe also noted, at least partially incorrectly, that “Ethiopia's case was not based on the legality of cluster bombs, but as the liability award indicated, on Eritrea's intentional bombing of the elementary school twice.”) (copy on file with author); see also, E-mail from Lea Brilmayer, Howard M. Holtzmann Professor of International Law, Yale Law School, to Virgil Wiebe, Director of Clinical Education and Associate Professor, University of St. Thomas Law School (July 11, 2006, 06:45:00 CST) (on file with author). A review of the Rules of Procedure reveals no such explicit rule. The closest analogue seems to be a rule stating that “[h]earings shall be held in camera unless the parties agree otherwise.” R. OF PROC. art. 13(5), available at http://www.pca-cpa.org/upload/files/Rules%20of%20Procedure.PDF.


102. Geneva Protocol I, supra note 17, art. 57(2)(b).
b. The Post-Event Failure to Take Remedial Measures Contributed to a Finding of Liability.

The failure to take remedial measures after an event to prevent future mishaps also contributed to the finding of liability. According to the decision, “The Commission received no evidence indicating any changes in Eritrean training or doctrine aimed at avoiding possible recurrence of what happened in the third and fourth sorties on June 5, 1998.” In the words of one commentator, “[t]he absence of the requisite care was held to be compounded by the failure to take appropriate corrective action to prevent a recurrence of the mistakes.”

Such an approach finds a duty to take remedial actions after the fact in order to show that all feasible or reasonable precautions had been taken to protect civilian life under sections 2 and 4 of Additional Protocol Art. 57. A government might argue that this approach unfairly uses inaction after the fact as evidence of prior intent, rather than focusing only on the defendant’s actions at the relevant time of the incidents (i.e., prior to and during the attacks).

Intent, however, is not the issue. The issue is the feasibility of precautionary measures, not the intent of the actor in whether or not to target civilians at the time of the action in question. A rule that assigns liability for a failure to take reasonable remedial actions after a grossly negligent action could have the salutary effect of encouraging governments to take actions to prevent deaths and injuries from cluster munitions in the future.

Broader application of such a rule holds promise to restrain and limit the use of cluster munitions, as it could require militaries to take corrective measures about known failings of systems under their control. A failure to take corrective measures indicates a general callousness towards life and may be probative of general carelessness.

The approach taken runs directly counter to that of the Federal Rules of Evidence under U.S. law. In a U.S. tort claim, evidence that a defendant took remedial actions after an incident generally cannot be used to prove

103. Partial Award-Ethiopia, 43 I.L.M. 1275, ¶ 111.
105. See Geneva Protocol I, supra note 17, art. 57(2),4).
106. See Rossini, supra note 90.
107. For example, the U.S. and Dutch governments halted cluster munition use in May 1999 during the NATO action in Kosovo following two incidents of civilian deaths. Wiebe, supra note 80, at 131-33.
liability. The stated social policy of exclusion is one of "encouraging people to take, or at least not discouraging them from taking, steps in furtherance of added safety." Commentators have taken issue with this approach, arguing that even if a defendant did not know about Rule 407, he would take steps to correct known problems if only to avoid future accidents and further exposure to liability. The EECC takes this a step further, suggesting that defendants who take remedial measures be rewarded—i.e., their post-injury actions would be seen as evidence of precautionary measures.

Remedial measures also might properly be used as evidence of the feasibility of precautionary measures in the first place. Under Federal Rule of Evidence 407, such evidence can be used to show that precautionary measures were feasible prior to the incident, particularly if the defendant claims they were not feasible. Because Article 57 of Additional Protocol I is all about the feasibility of precautionary measures, the ability to take such measures after an action perhaps should be available as evidence of feasibility before the actions were taken if a defendant claims such actions were not feasible.

4. Why the Limited Decision?

a. The Parties Presented Wildly Divergent Accounts of the Facts.

The EECC adopted a relatively high "clear and convincing" standard of proof. In the claims, both sides presented large numbers of sworn affidavits completely contradicting the facts asserted by the other side. According to one commentator, "[t]he high standard of proof and the presentation of such conflicting evidence may have worked together to produce fewer findings of responsibility than either side had expected."

108. FED. R. EVID. 407. Rule 407 states:

When, after an injury or harm allegedly caused by an event, measures are taken that, if taken previously, would have made the injury or harm less likely to occur, evidence of the subsequent measures is not admissible to prove negligence, culpable conduct, a defect in a product, a defect in a product's design, or a need for a warning or instruction. This rule does not require the exclusion of evidence of subsequent measures when offered for another purpose, such as proving ownership, control, or feasibility of precautionary measures, if controverted, or impeachment.

Id. (emphasis added).

109. FED. R. EVID. 407 advisory committee's note.

110. STEPHEN A. SALTZBURG ET AL., FEDERAL RULES OF EVIDENCE MANUAL § 407.02 (8th ed. 2002).

111. See FED. R. EVID. 407.


113. Id. ¶ 6.

114. Weeramantry, supra note 104, at 467.
Both sides agreed on a few facts involving the attack on Mekele, but diametrically opposed assertions were made with respect to whether the fourth sortie even hit the civilian area. This may have been why the EECC could not bring itself to find that the attack on civilians was intentional or, at the least, disproportionate. As discussed above, more objective evidence on the cluster weapon used could have shored up the “failure to take feasible precautions” analysis, as well as supported an analysis that would have found the attack to be indiscriminate or disproportionate.

b. The EECC Dismissed Even Landmine Claims Due to a Lack of Clearly Binding Treaty Prohibitions on the Parties.

One of the objectionable aspects of cluster submunitions is that when they fail to explode on contact, they act as de facto anti-personnel landmines. With respect to actual anti-personnel landmines, the Commission dismissed all claims, holding that minefields placed in defensive positions were “the type of use that has been common and permissible under customary international law.” The Commission’s decision on landmines noted that the treaties restricting anti-personnel landmines had been relatively recently concluded, and that state practice was inconsistent. It did note that Protocol II of the Certain Convention Weapons treaty and its prohibition on indiscriminate use of landmines “reflect fundamental humanitarian law obligations of discrimination and protection of civilians.”

According to J. Romesh Weeramantry, the Commission did point out that “landmines used in ways that intentionally targeted civilians or were indiscriminate could not constitute a defensive measure.” Had the Commission more carefully considered the actual nature of the cluster munition in question (i.e., that it had a propensity to leave duds), a de facto

116. Id. ¶ 108.
117. Id. ¶ 110.
118. Id. ¶ 50.
120. Partial Award-Ethiopia, 43 I.L.M. 1275, ¶ 18; Partial Award-Eritrea, 43 I.L.M. 1249, ¶ 24.
121. Weeramantry, supra note 104, at 470.
landmine proportionality analysis could have been undertaken along the lines discussed infra.\textsuperscript{122}

In dismissing a claim concerning landmines, the Commission did recognize the danger posed to returning civilians and that the "risk posed to civilians from even lawful defensive uses of landmines demonstrates the importance of the rapid development in recent years of new international conventions aimed at restricting and even prohibiting all future use of anti-personnel [landmines]."\textsuperscript{123} We may be on the cusp of similar "rapid development" in the area of cluster munition regulation, with efforts gathering momentum at both the national and international levels.\textsuperscript{124}

In conclusion, the EECC reached the right result in holding Eritrea liable for the killings of civilians. However, it should also have considered the nature of the cluster weapon used to reach that decision.

V. THE MARTIĆ JUDGMENT: PANIC ALL AROUND\textsuperscript{125}

*It was a very nice, sunny day . . . . I reached the Ban Jelacic Square, which is the very centre of Zagreb, and I decided to take a walk to the central railway station . . . . However, I never reached the central railway station because it was about 10.00 in the morning when I heard the sound of a shell, and I instinctively threw myself on the ground and felt a sharp pain in my head and in the area of my stomach. In my immediate vicinity, a car blasted. There was smoke and dust around me. I heard in the background women and children screaming. There was panic all around.\textsuperscript{126}*

On June 12, 2007, the International Criminal Tribunal for the Former Yugoslavia convicted Milan Martić, the former president of the now defunct Republic of Serbian Krajina ("RSK"), of war crimes and crimes against humanity.\textsuperscript{127} In 1995, Milan Martić was the President of the RSK, an area in

\textsuperscript{122} See infra Part VII.F.

\textsuperscript{123} See, e.g., Docherty, *supra* note 10, at 69-70 (describing the current movement to ban cluster munitions).

\textsuperscript{124} See, e.g., Docherty, *supra* note 10, at 69-70 (describing the current movement to ban cluster munitions).


\textsuperscript{126} Martić, Case No. IT-95-11-T, Judgment, ¶ 477 (June 12, 2007).
On May 1, the Croatian army launched an offensive to capture RSK territory. Martić responded on May 2 and 3 with submunition-filled rockets targeting Zagreb. The attacks killed seven people and seriously or slightly injured over two hundred. With respect to the attack on Zagreb, the ICTY trial chamber convicted Martić of murder, inhumane acts, and cruel treatment (crimes against humanity), as well as for attacks on civilians (a war crime). What follows is a detailed history of the case, from the attack to the Trial Chamber judgment. In Part VI, I lay out the charges against Martić. In Part VII, I address the central issues relating to cluster munitions, considering evidence from the inception of the case through trial.

VI. THE MARTIĆ INDICTMENT(S): DEVELOPMENTS FROM 1995 TO 2005

The initial indictment focused only on the Zagreb attack. As Martić did not turn himself in, the ICTY held a “Rule 61” hearing to consider whether the charges against him should stand in order to issue an international arrest warrant. A Trial Chamber issued a decision and the

A. Factual Allegations in the Indictments: Deaths and Injury Resulting from the 1995 Attack on Zagreb

The original indictment made specific allegations about the Zagreb attacks:

On 2 May 1995, at approximately 10.25 hours, upon the orders of MILAN MARTIC, Orkan rockets fitted with “cluster-bomb” warheads were fired into the central part of Zagreb by the ARSK [Army of Republic of Serbian Krajina], causing death and injury to civilians in Zagreb. This was an unlawful attack against the civilian population and individual citizens.

On 3 May 1995 at approximately 12.10 hours, upon the orders of MILAN MARTIC, the ARSK fired additional Orkan rockets with “cluster-bomb” warheads into the central part of Zagreb, again causing death and injury to civilians in Zagreb. This was also an unlawful attack against the civilian population and individual citizens.


142. Martić, Case No. IT-95-11-T, Initial Indictment ¶ ¶ 8-9 (July 25, 1995).
The later amended indictments alleged more details about the attacks, stating from where the rockets were fired and detailing precise locations in Zagreb where they fell. They also alleged that at least 7 civilians were killed and 194 wounded. The indictments charged that the victims were all civilians protected by the laws and customs of war, and that Martić was required to abide by the laws and customs of war.

B. Crimes Against Humanity and War Crimes Under the ICTY Statute

Article 3 of the ICTY Statute specifies that the International Tribunal has the power to prosecute persons for violating the laws or customs of war. Article 5 states that certain acts, including murder and other inhumane acts, when committed in armed conflict and directed against any civilian population, constitute crimes against humanity.

Article 7(1) of the ICTY Statute allows for individual criminal responsibility for acts of state: "A person who planned, instigated, ordered, committed or otherwise aided and abetted in the planning, preparation or execution of a crime referred to in articles 2 to 5 of the present Statute, shall be individually responsible for the crime." Article 7(3) addresses command responsibility, as the commission of war crimes or crimes against humanity by a subordinate does not relieve his superior of criminal responsibility if he knew or had reason to know that the subordinate was about to commit such acts or had done so and the superior failed to take

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143. See Martić, Case No. IT-95-11, Amended Indictment ¶ 49-54.
144. With regard to the attack on May 2, both subsequent amended indictments are identical (at least 5 killed and 146 wounded). With regard to May 3, the prosecution claimed at least five were killed. In the Second Amended Indictment, the prosecution reduced the number of wounded from fifty to forty-eight. Id. ¶¶ 51-52; Martić, Case No. IT-95-11-T, Second Amended Indictment – Corrected ¶ 51-52. On the basis of additional evidence presented at trial, the judgment found that a total of at least 214 people were injured. Martić, Case No. IT-95-11-T, Judgment, ¶¶ 308, 312 (June 12, 2007).
145. Martić, Case No. IT-95-11-T, Initial Indictment ¶¶ 13-14. These allegations were laid out in greater detail in the amended indictments. See Martić, Case No. IT-95-11, Amended Indictment ¶¶ 1-20; Martić, Case No. IT-95-11-T, Second Amended Indictment – Corrected ¶¶ 1-20.
147. S.C. Res. 827, supra note 146, art. 5(a) & (i).
148. Id. art. 7(1).
the necessary and reasonable measures to prevent such acts or to punish the perpetrators thereof.  

C. The Charges Against Martić for Zagreb: Murder, Inhumane Acts, Cruel Treatment, and Attacks on Civilians

On the basis of these factual allegations, Martić originally faced four charges alleging the 1995 commission of war crimes. In December of 2002, the prosecution not only filed additional charges against Martić for other crimes relating to ethnic cleansing dating back to 1991, but revised the charges concerning the Zagreb bombing. The new charges retained the earlier elements of personal criminal responsibility and/or command responsibility for the commission of war crimes, and added allegations of crimes against humanity. New counts 15 to 19 laid out the charges:

Count 15: Murder, a CRIME AGAINST HUMANITY, punishable under Articles 5(a) and 7(1) and 7(3) of the Statute of the Tribunal.

Count 16: Murder, a VIOLATION OF THE LAWS OR CUSTOMS OF WAR, as recognised by Common Article 3(1)(a) of the Geneva Conventions of 1949, punishable under Articles 3 and 7(1) and 7(3) of the Statute of the Tribunal.

149. Id. art. 7(3).
150. Two charges (Count I for May 2 and Count III for May 3) accused Martić of “knowingly and wilfully order[ing] an unlawful attack against the civilian population and individual civilians of Zagreb” causing at least seven deaths and numerous injuries in violation of “the laws and customs governing the conduct of war,” crimes recognized by “Articles 3 and 7(1)” of the ICTY Statute. Martić, Case No. IT-95-11-T, Initial Indictment ¶ 15. As an alternative to intentional attacks on civilians, the Prosecutor charged Martić in Count II (for May 2) and Count IV (for May 3) with knowing or having reason to know that a subordinate “was about to commit and did commit a war crime (“the rocket attack on civilians in Zagreb”) and that he “failed to take the necessary and reasonable measures to prevent the attack and failed to punish the perpetrators of the attack,” in violation of Articles 3 and 7(3) of the ICTY Statute. Id. ¶¶ 15-18.
151. See Martić, Case No. IT-95-11, Amended Indictment ¶ 55 (Dec. 18, 2002).
152. Counts 15-19 below are from the Martić Amended Indictment. Id. The Second Amended Indictment repeated these charges verbatim. Martić, Case No. IT-95-11-T, Second Amended Indictment — Corrected ¶¶ 1-20 (signed July 14, 2003, refiled Dec. 9, 2005).
153. Common Article 3(1)(a) to the Geneva Conventions states in part:

(1) Persons taking no active part in the hostilities, including members of armed forces who have laid down their arms and those placed hors de combat by sickness, wounds, detention, or any other cause, shall in all circumstances be treated humanely, without any adverse distinction founded on race, colour, religion or faith, sex, birth or wealth, or any other similar criteria. To this end, the following acts are and shall remain prohibited at any time and in any place whatsoever with respect to the above-mentioned persons:

(a) violence to life and person, in particular murder of all kinds, mutilation, cruel treatment and tortures . . .

Geneva Conventions, supra note 42, common art. 3.

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Count 17: Inhumane acts, a CRIME AGAINST HUMANITY, punishable under Articles 5(i) and 7(1) and 7(3) of the Statute of the Tribunal.

Count 18: Cruel treatment, a VIOLATION OF THE LAWS OR CUSTOMS OF WAR, as recognised by Common Article 3(1)(a) of the Geneva Conventions of 1949, punishable under Articles 3 and 7(1) and 7(3) of the Statute of the Tribunal.

Count 19: Attacks on civilians, a VIOLATION OF THE LAWS OR CUSTOMS OF WAR, as recognised by Article 51(2) of Additional Protocol I and Article 13(2) of Additional Protocol II to the Geneva Conventions of 1949, punishable under Articles 3 and 7(1) and 7(3) of the Statute of the Tribunal. 154

VII. THE MARTIĆ JUDGMENT AND THE EVIDENCE SUPPORTING IT: CENTRAL ISSUES CONCERNING CLUSTER MUNITIONS

A. Requisite Mens Rea: What Did Martić Know, When Did He Know It, and Why Should We Care?

A brief turn to the mens rea (mental state) requirement for the allegations is in order before examining the nature of the Orkan system. A central element of the case against Martić was that the nature of the weapon was known in advance. The mental state required for a finding of guilt has implications for future uses of cluster munitions, particularly when advanced knowledge of their effects is at issue.

According to the International Committee of the Red Cross’s (“ICRC”) treatise on customary international humanitarian law, “[i]nternational case law has indicated that war crimes are violations that are committed wilfully, i.e., either intentionally (dolus directus) or recklessly (dolus eventualis).” 155

154. The cited articles of the Additional Protocols to the Geneva Conventions prohibit attacks on civilians, including attacks intended to spread terror. See supra note 17 and accompanying text (language of Geneva Protocol I art. 51(2)); see supra note 18 (text of Geneva Protocol II art. 13(2)).

155. HENCKAERTS & DOSWALD-BECK, supra note 25, at 574 (citing Prosecutor v. Delalić, Case No. IT-96-21-T, Trial Chamber II, ¶¶ 437, 439 (Nov. 16, 1998)); see also Fenrick, supra note 25, at 157. (“Where the crime base consists of shelling or sniping incidents in a combat environment, it must first be proved that death, injury or damage was caused by an unlawful attack, that is, one directed against civilians or civilian objects or one directed against a military objective which may be expected to cause disproportionate incidental losses, before moving on to determine whether the additional elements necessary to establish the commission of other offences have also been established . . . . If a civilian is killed or injured during an attack on a military objective which was
In the Martić judgment, the Trial Chamber stated that

[t]he *mens rea* of murder is the intent to kill, including indirect intent, that is the knowledge that the death of the victim was a probable consequence of the act or omission. . . . [It is not] sufficient that the perpetrator knew that death would be a *possible* consequence of his act or omission.\(^\text{156}\)

The Trial Chamber noted that for murder, “[n]either negligence nor gross negligence on the part of the perpetrator is sufficient,”\(^\text{157}\) strongly suggesting, however, that recklessness would be sufficient. Similar *mens rea* requirements were cited for cruel treatment\(^\text{158}\) and for inhumane acts.\(^\text{159}\)

Attacks on civilians must be made with “direct or indirect intent” (i.e. must be willful) in order to qualify as a grave breach.\(^\text{160}\) The Trial Chamber relied on the ICRC commentary for defining willful intent as including acts of recklessness:\(^\text{161}\)

Wilfully: the accused must have acted consciously and with intent, i.e., with his mind on the act and its consequences, and willing the (“criminal intent” or “malice aforethought”); this encompasses the concepts of “wrongful intent” or “recklessness”, viz., the attitude of an agent who, without being certain of a particular result, accepts the possibility of it happening; on the other hand, ordinary negligence or lack of foresight is not covered, i.e., when a man acts without having his mind on the act or its consequences, (although failing to take the necessary precautions, particularly failing to seek precise information, constitutes culpable negligence punishable at least by disciplinary sanctions). . . .\(^\text{162}\)

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\(^{156}\) Martić, Case No. IT-95-11-T, Judgment, ¶ 60 (June 12, 2007).

\(^{157}\) Id. ¶ 60 n.113 (citing Prosecutor v Stakić, Case No. IT-97-24-T, Judgment, ¶ 587 (Oct. 29, 2003); Prosecutor v. Brdanin, Case No. IT-99-36-T, Judgment, ¶ 386 (Sep. 1, 2004); Prosecutor v. Orić, Case No. IT-03-68-T, Judgment, ¶ 348 (June 30, 2006)).

\(^{158}\) Id. ¶ 79 (stating that the “perpetrator must be shown to have acted with direct intent or with indirect intent, that is, in the knowledge that cruel treatment was a likely [i.e., probable] consequence of his act or omission.”).

\(^{159}\) Id. ¶ 85 (citations omitted).

\(^{160}\) Id. ¶ 72 & n.138 (quoting art. 85 of Geneva Protocol I, *supra* note 17) (citations omitted).

\(^{161}\) Id. The commentary was cited approvingly by the Appeals Chamber in the Galić case. Prosecutor v. Galić, Case No. IT-98-29-A, Judgment, ¶ 140 (Nov. 30, 2006).

Individual criminal responsibility attaches to a person who orders the execution of a crime.\textsuperscript{163} Ordering requires that a person in a position of authority instructs another person to commit a crime .... The \textit{mens rea} is either direct intent in relation to the perpetrator's own ordering or indirect intent, that is, a person, who orders with the awareness of the substantial likelihood that a crime will be committed in the execution of that order .... \textsuperscript{164}

The prosecution was therefore faced with the task of proving intent in the following manner:

[T]hat Martić ordered acts, either directly, or indirectly, knowing there was a substantial likelihood that crimes would be committed; that to be found guilty for murder, cruel treatment, and inhuman acts, Martić knew there was a probability that the use of cluster munitions in Zagreb would result in those consequences; that to be found guilty for attacks on civilians, Martić ordered attacks on civilians or at least acted recklessly in ordering the use of cluster munitions, i.e., acting with knowledge, he accepted the possibility of indiscriminate and/or disproportionate deaths and injuries to civilians.\textsuperscript{165}

This task proved most difficult with respect to the attacks on May 2, before the actual effects of such attacks on Zagreb were known.\textsuperscript{166} The prosecution called on Lieutenant Colonel Jozef Poje, an artillery expert recognized by the ICTY in other cases.\textsuperscript{167} Poje testified that those making the decision to use the Orkan rocket may not have known of its...
characteristics, but that they had a responsibility to inquire of those in their chain of command who did know. That alone would have been sufficient only for a finding of negligence.

The prosecution also questioned Rade Rašeta, a high-ranking intelligence officer in the Serbian Krajina army, who testified that "persons who were familiar with [the Orkan] knew that they were intended for targeting wider areas and not points, and that as such they could entail a lot of casualties." Martić had military men who "made proposals to [him] about the use of the armed forces. It was up to him to hear them out and then to either agree or disagree with the decision they proposed." The prosecution, relying on other ICTY precedent (including the Rule 61 Decision), also argued that intent could be inferred from the indiscriminate nature of the weapon used.

The defense argued that Martić, even assuming he ordered the shelling, could not be "held responsible for the choice of appropriate weapons" because he "did not have appropriate military knowledge" and that such responsibility was that of the Main Staff of the military.

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171. See supra note 137.


A direct attack can be inferred from the indiscriminate character of the weapon used . . . . [T]he expression 'directed against' is an expression which 'specifies that in the context of a crime against humanity the civilian population is the primary object of the attack. In order to determine whether the attack may be said to have been so directed, the Trial Chamber will consider, inter alia, the means and method used in the course of the attack, the status of the victims, their number, . . . . the nature of the crimes committed in its course, the resistance to the assailants at the time and the extent to which the attacking force may be said to have complied or attempted to comply with the precautionary requirements of the laws of war.

Id. at 462, (quoting Galić, Case No. IT-98-29-A, Judgment, ¶ 132).

173. Public Redacted Final Trial Brief of Milan Martić, ¶ 149, Martić, Case No. IT-95-11-T (2007). The defense pointed to Rašeta's testimony that Martić "did not have the same knowledge about the use of the armed forces that professional soldiers have." Trial Testimony of Rašeta, supra note 169, at 3915, cited in Public Redacted Final Trial Brief of Milan Martić, ¶ 150, Martić, Case No. IT-95-11-T (2007). The defense also relied on Colonel Poje's testimony that perhaps not everyone is familiar with the consequences of the use of the Orkan, and some
The Trial Chamber found that General Čeleketić (the direct subordinate of Martić) had ordered the Serbian Krajina’s only M-87 Orkan rocket unit to be in position south of Zagreb and that the rocket unit was under his command.174 The only evidence implicating Martić with direct knowledge of the weapon systems was the fact that he made a request for a loan of Orkan rockets from Serbia.175

The Trial Chamber concluded that by “2 May 1995, the effects of firing the M-87 Orkan on Zagreb were known to those involved.”176 It is perhaps a bit peculiar to find that the effects were known to “those involved,” as Martić was the only person on trial. Did the Trial Chamber find that Martić actually knew about the nature of the weapon, arriving at that conclusion by connecting the dots of powerful circumstantial evidence; or did it impute to Martić, based on command responsibility, the knowledge of others in his chain of command?

The evidence concerning Martić’s actual knowledge is much stronger for the weapon’s use on May 3. Rašeta testified that on May 2, he submitted a report to the Serbian Krajina main staff estimating the attack caused 30 civilians deaths and 130 civilian injuries and that Čeleketić would have informed Martić about outcome of the attacks.177 There were also multiple reports in the media.178 The Trial Chamber found that by May 3, “the full impact of using such an indiscriminate weapon was known beyond doubt.”179

With respect to the mental element of murder, the Trial Chamber held as follows:

Having regard in particular to the Trial Chamber’s findings concerning the nature of the M-87 Orkan and that Milan Martić,
who ordered the use of the M-87 Orkan, was aware that death was a probable consequence of this attack, the Trial Chamber finds that the mental element of the crime of murder is established.\footnote{Id. ¶ 470. The Trial Chamber also concluded “that Martić knew that the shelling was likely to cause such suffering, and thus intentionally committed acts which amount to cruel treatment under Article 3 and inhumane acts under Article 5 against these persons.” \textit{Id.} ¶ 471.}

With regard to attacks on civilians, the Trial Chamber held as follows: “Having regard in particular to the nature of the M-87 Orkan and the finding that Milan Martić knew of the effects of this weapon, the Trial Chamber finds that Milan Martić wilfully made the civilian population of Zagreb the object of this attack.”\footnote{Id. ¶ 471.}

A military commander’s familiarity with the capabilities of weapons in the arsenal can have profound effects on an eventual war crimes prosecution. Knowledge about what a cluster munition can do in a civilian environment may expose military personnel and their civilian commanders to criminal liability. The nature of the weapon itself can be used as evidence of intent to attack civilians. A negligent failure to inquire about the nature of cluster munitions can lead to disciplinary action, at the least, which would imply courts martial or similar national level proceedings.

\section*{B. Working as Designed: Weapon Characteristics}

So what are the “nature and effects” of the Orkan rocket system? And why should we care? Many countries build and stockpile similar Multiple Launch Rocket Systems (“MLRS”).\footnote{Army Technology, http://www.army-technology.com/projects/mlrs/ (last visited Oct. 24, 2007) (listing the United States and fourteen other countries that have ordered the MLRS from Lockheed Martin Missiles and Fire Control).} The serious humanitarian-law concerns raised by the ICTY about the Orkan system implicate similar characteristics in other similar weapons systems.

The Orkan is an MLRS system, with each rocket having a range (in 1995) of fifty kilometers. As with many other MLRS systems, each launcher can fire up to twelve rockets at a time.\footnote{Rule 61 Proceedings, \textit{supra} note 136, at 99-100 (testimony of Ted Itani) [hereinafter Rule 61 Testimony of Itani]. Major Itani had forty years of experience in the Canadian military, including extensive experience as an artillery officer and trainer. \textit{Id.} at 93-97.} The Martić case highlighted the following characteristics: (1) submunition design and effects; (2) the “footprint” of the scattered submunitions when dispersed from the warhead; (3) the unguided targeting system; and (4) the unexploded ordnance left after the attacks.\footnote{See infra Part VII.B.1-4.}
1. Deadly Dual Purpose: Submunition Design and Effects

Both pre-trial and trial prosecution witnesses presented evidence about the Orkan submunitions. Each rocket used in the Zagreb attack carried 288 KB-1 bomblets, also referred to as “dual purpose improved conventional munitions” (“DPICMs”). The “dual purposes” are to kill or injure people and to destroy armor: the system was intended for use against troops in the open, “soft targets” (such as supply depots, fuel & ammunition dumps, or unhardened communications centers), and mass tank and armor formations (e.g. over an area 1 km x 1 km).

The prosecution presented evidence as to the submunitions’ gruesome effects on the human body, their ability to penetrate vehicles, and their minimal effect on buildings. The prosecution summarized the immediate and lasting effects:

Rašeljka GRMOJA was seventeen years old when her school was hit by one of the ORKAN rockets, leaving her with a metal ball in her shoulder and glass in her eye, as well as cuts all over her face and arms . . . . [A]lthough her physical injuries healed and she could return to school after a month, the psychological consequences of the shelling took much longer to disappear. Mina ZUNAC was talking to her mother on the street when she heard a series of explosions and realised that her leg ‘had been blown apart.’ She described the shock and panic of the moment, as well as the endless process of treatment and partial recovery from injuries to her hand, leg, and her badly damaged foot. Despite more than ten surgeries, the doctors have never been able to remove all of the shrapnel.

The Trial Chamber concluded in 2007 that:

The M-87 Orkan is a non-guided projectile, the primary military use of which is to target soldiers and armoured vehicles. Each rocket

185. Trial Testimony of Poje, supra note 168, at 5068-79.
186. Rule 61 Proceedings, supra note 136, at 100, 102.
187. Id. at 41 (testimony of Kevin Curtis) [hereinafter Rule 61 Testimony of Curtis]; id. at 100-02, 107-08 (testimony that each bomblet carries between 400 and 450 stainless steel pellets capable of killing at a radius of ten meters to fifty meters and that a shaped charge capable of penetrating up to sixty millimeters of armor accomplishes the second purpose).
188. Rule 61 Testimony of Curtis, supra note 187, at 43-44, see also Rule 61 Testimony of Itani, supra note 183, at 103-04.
may contain either a cluster warhead with 288 so-called bomblets or 24 anti-tank shells. The evidence shows that rockets with cluster warheads containing bomblets were launched in the attacks on Zagreb on 2 and 3 May 1995. Each bomblet contains 420 pellets of 3mm in diameter . . . . Each pellet has a lethal range of ten metres.  

2. The Footprint of Death: The Dispersion of Submunitions

A single Orkan rocket can disperse its 288 bomblets over an ellipse of approximately 150 meters by 200 meters, or about two hectares in area. Colonel Rašeta, the Serbian intelligence officer, testified that “persons who are familiar with these artillery pieces knew that they were intended for targeting wider areas and not points, and that as such they could entail a lot of casualties.” The Trial Chamber found that the Orkan was a “non-guided high dispersion weapon, [which] . . . by virtue of its characteristics . . . was incapable of hitting specific targets.”

States and humanitarian groups are increasingly raising the alarm about these indiscriminate characteristics, especially when the weapons are used in civilian areas.

190. Martić, Case No. IT-95-11-T, Judgment, ¶ 462 (footnote omitted). The judgment echoed the Rule 61 Decision. Martić, Case No. IT-95-11-61, Rule 61 Decision 146-47 (Mar. 8, 1996) (“The effects of these rockets have been known for many years.”).

191. See Martić, Case No. IT-95-11-T, Judgment, ¶ 463 (June 12, 2007); Rule 61 Testimony of Itani, supra note 183, at 103; see also Trial Testimony of Poje, supra note 168, at 5068, cited in Martić, Case No. IT-95-11-T, Judgment, ¶ 462 & n. 1249 (“[T]he surface area on which the bomblets drop is two hectares.”). The area formula of an ellipse is \( \pi \times \frac{1}{2} \times \text{length} \times \frac{1}{2} \times \text{width} \). Mudd Math Fun Facts, Area of an Ellipse, http://www.math.hmc.edu/funfacts/ffiles/10006.3.shtml (last visited July 25, 2007). Thus, the area of an ellipse 150m x 200m is 23,562m². A hectare is 10,000 square meters. Encyclopedia Britannica Online, Hectare, http://www.britannica.com/eb/article-9039780/hectare (last visited July 25, 2007). One point of contradiction between Major Itani and Colonel Poje was that Itani stated that the warhead opened at 400 meter altitude, while Poje stated 800 to 1000 meters. Compare Rule 61 Testimony of Itani, supra note 183, at 103, with Trial Testimony of Poje, supra note 168, at 5068, 5126, 5129-30, 5133.

192. Trial Testimony of Rašeta, supra note 169, at 3939, cited in Martić, Case No. IT-95-11-T, Judgment, ¶ 462, n.1248. Major Itani testified that several rockets are usually fired at a target, with overlapping footprints, and that a salvo of three or six rockets could saturate an area that could be from 500 meters by 500 meters to 1,200 meters by 1,200 meters. Rule 61 Testimony of Itani, supra note 183, at 103.

193. See, e.g., Martić, Case No. IT-95-11-T, Judgment, ¶ 463.


[D]ue to the wide dispersal and large number of submunitions contained within many kinds of cluster munitions, there is a question of the impact of article 51 paragraph 4 of GC AP I with regard to the use of such munitions against military targets located in or near civilian areas (this would of course in many cases also be considered prohibited according to other principles, i.a. [sic] the proportionality principle . . . .
3. *This* is Rocket Science?: Targeting Difficulties in MLRS Systems

Where will that two-hectare footprint of 288 bomblets fall? Few unguided weapons can be fired with absolute precision:

Generally speaking, munitions from anything other than small arms can, at best, be expected to land within a particular area of the point at which they are aimed. This area is given various names in different armed forces, such as Circular Error Probable (CEP) or Error Ellipse. The expression is used to indicate the percentage of munitions fired from a particular type of weapon system... which can be expected to land within a given area of the aiming point.\(^\text{195}\)

The "Error Ellipse" or "Circular Error Probable" is not to be confused with the dispersion ellipse or footprint of submunitions. The center of the footprint can fall anywhere within the error ellipse. The Trial Chamber found that the Orkan’s error ellipse at its extreme range of fifty kilometers could undershoot or overshoot, or go to the left or right, of its target by about 1,000 meters.\(^\text{196}\) With cluster munitions, this means that not just one explosive misses its target, but that 288 smaller explosives miss the target.

4. Indiscriminate as Designed

The Rule 61 Decision and the final judgment both considered these three features in reaching their conclusions. These characteristics were entirely intended by their designers. Prosecution witnesses testified at the Rule 61 hearing and at trial that if the intent had been to destroy military or police buildings, the Orkan rocket was the wrong weapon to use because of the minimal explosive power of the individual bomblets.\(^\text{197}\) Colonel Poje testified that

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\(^{195}\) Fenrick, *supra* note 25, at 162.

\(^{196}\) Martić, Case No. IT-95-11-T, Judgment, ¶¶ 462-63.

\(^{197}\) Rule 61 Testimony of Curtis, *supra* note 187, at 43; *see also* Rule 61 Testimony of Itani, *supra* note 183, at 113, 141 ("[Zagreb] is a built up area. I would have used some other system that would have provided me with appropriate precision, and appropriate destructive force .... [M]y
In view of the fact that it has high dispersion capabilities, ORKAN is not principally suitable for use in populated areas. It is designed for use outside populated areas. The reason for this is primarily that its effects in populated areas, regardless of the fact that there might be military targets in populated areas, there is a high probability that parts of the rocket should be dispersed and affect the civilian population, especially when the civilian population has not been evacuated on time or has not taken refuge or shelter. So I would like to mention once again ORKAN is not intended for deployment in populated areas.

The final judgment found as follows:

The evidence shows that the M-87 Orkan was fired on 2 and 3 May 1995 from the Vojnič area, near Slavsko Polje, between 47 and 51 kilometres from Zagreb. However, the Trial Chamber notes in this respect that the weapon was fired from the extreme of its range. Moreover, the Trial Chamber notes the characteristics of the weapon, it being a non-guided high dispersion weapon. The Trial Chamber therefore concludes that the M-87 Orkan, by virtue of its characteristics and the firing range in this specific instance, was incapable of hitting specific targets. For these reasons, the Trial Chamber also finds that the M-87 Orkan is an indiscriminate weapon, the use of which in densely populated civilian areas, such as Zagreb, will result in the infliction of severe casualties.

The Trial Chamber also held that "in particular due to the characteristics of the M-87 Orkan and due to the large-scale nature of the attack, the Trial Chamber finds that the shelling constituted a widespread attack directed against the civilian population of Zagreb." That an attack is widespread or systematic is "an essential element to be considered prior to any prosecution for crimes against humanity." The Trial Chamber stated that "[w]idespread' refers to the large-scale nature of the attack and the number of targeted persons . . . ." The International Criminal Tribunal for Rwanda has defined "widespread" as "massive, frequent, large scale action, preference would have been to use precision guided munitions of heavy calibre, such as a 250 pound bomb with a laser-guided nose, so that you could take out specific installations.")

198. Trial Testimony of Poje, supra note 168, at 5065.
199. Martić, Case No. IT-95-11-T, Judgment, ¶ 463.
200. Id. ¶ 469.
carried out collectively with considerable seriousness and directed against a multiplicity of victims."\(^{203}\)

The attacks on May 2 and 3, 1995 consisted of only eight to twelve Orkan rockets.\(^{204}\) If the court found such an attack to be "widespread," other instances in which large numbers of cluster munitions have been used against civilian areas must come under close scrutiny. The use of cluster munitions in south Lebanon by Israeli forces during 2006 presents the starkest recent example. By December 3, 2007, the Mine Action Coordination Centre for South Lebanon had mapped 960 cluster munition strikes covering 444 areas and 38,638,788 square meters.\(^{205}\)

C. Targets in Urban Areas: How Can Military Objectives in Civilian Populations Be Attacked?

Eight to twelve rockets hit Zagreb over two days, killing seven people, and injuring over two hundred others (all but a handful of which were considered to be civilians).\(^{206}\) Among the civilian structures hit were a children’s hospital, the National Theatre, and a high school.\(^{207}\)

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203. DE THAN & SHORTS, supra note 201, at 91 (quoting Prosecutor v. Akayesu, Case No. ICTR-96-4-T, Judgment, ¶ 580 (Sept. 2, 1998), aff’d sub silentio, Case No. ICTR-96-4-A, Judgment (June 1, 2001)), The authors go on to note that [how "widespread" the attack must be is a question of enormity in relation to the scale of the atrocities and the number of victims involved .... Factors to be considered include the actual numerical size of the group, the area in which the population lives, and the grave consequences that resulted from the attack on a particular group. Id. at 91-92.

204. The Martić judgment did not make a specific finding on how many rockets were fired. See generally Martić, Case No. IT-95-11-T, Judgment. The prosecution in its closing brief argued that four rockets fell on May 2 and another four fell on May 3. Final Brief of Prosecution, ¶¶ 251, 253, Martić, Case No. IT-95-11-T (2007) (citing, inter alia, Transcript of Record at 5623-24, 5631, 5646-52, Martić, Case No. IT-95-11-T (June 15, 2006) (testimony of Branko Lazarević) [hereinafter Trial Testimony of Lazarević], available at http://www.un.org/icty/transell/0606151T.htm). Detective Curtis testified in 1996 that there were twelve rockets fired over the two days. Rule 61 Testimony of Curtis, supra note 187, at 38-39, 56. A map attached as the final page of the Trial Chamber judgment shows twelve separate strikes, numbered one through eight (several of the strikes in the same immediate bear the same number). Bartić, Case No. IT-95-11-T, Judgment, at p. 199.


207. Id. ¶¶ 305, 307, 309.
The defense did not dispute that the Orkan rockets killed and injured civilians in downtown Zagreb. Rather, the defense argued that the effort was to hit military targets, namely the Ministry of Defense, the Ministry of the Interior, the Presidential Palace, and the airport. The prosecution argued two alternatives. First, it claimed there were no military targets at all in downtown Zagreb. Second, it claimed that even if there were such targets, the Orkan was inappropriate for urban use. The Trial Chamber agreed with the second theory, concluding that between the poor targeting capability and the low explosive charge of the submunitions, the Orkan was not an appropriate weapon for use against the alleged military targets. A detailed look at the facts of the case graphically illustrates the peril of using such weapons in populated areas.

1. What is a “Densely Populated Civilian Area”?

The Trial Chamber judgment found that “the M-87 Orkan is an indiscriminate weapon, the use of which in densely populated civilian areas, such as Zagreb, will result in the infliction of severe casualties.” The only mention of the phrase densely populated area in humanitarian treaty law is found in Article 58 of Additional Protocol I, and applies to co-locating targets. Parties to a conflict, to the maximum extent feasible, are to “avoid locating military objectives within or near densely populated areas.” The complete phrase, “densely populated civilian area,” appears nowhere in treaty law. Dictionary definitions of “dense” include “marked by compactness or crowding together of parts,” and “crowded closely together.” Zagreb, a capital city with a population of nearly 780,000, should easily qualify as densely populated. The prosecution cited multiple witnesses testifying that on May 2, 1995, at the time of the attack, the streets of Zagreb were filled with people and stated that rockets on that day impacted “in the heart of Zagreb’s city centre.”

209. Id. ¶ 260.
211. Id. ¶ 463 (emphasis added).
212. Geneva Protocol I, supra note 17, art. 58(2).
213. Id. See supra note 33 for full text.
214. See supra notes 17, 33 and accompanying text.
2. What Are Military Objectives?

The prosecution in 1996 initially presented evidence that there were no legitimate military targets anywhere near where the rockets fell.\footnote{Rule 61 Proceedings, \textit{supra} note 136, at 28. "The intent quite clearly was not to go after military targets. There were no military targets in downtown Zagreb on May 2nd, on May 3rd, or at any other time. The intent of those attacks was to murder civilians and to terrorize the population. They were successful." \textit{Id.} at 124. An ICTY investigator who had visited the strike sites claimed there were no military installations at any of them and that minor damage had been done to civilian structures. \textit{Id.} at 40, 42-43, 54-55. A senior Croatian police official testified that "in the centre of Zagreb there are no military installations of any kind whatever" and that a "European city like Zagreb does not have military installations in the centre of the city." \textit{Id.} at 64, 68, 78, 79 (testimony of Franjo Tuksa) [hereinafter Rule 61 Testimony of Tuksa].} By the end of trial, the prosecution argued that even if there were military targets in Zagreb, the weapon was inappropriate to target them.\footnote{Final Brief of Prosecution, ¶ 250, 259, \\textit{Martić}, Case No. IT-95-11-T (2007) (referencing evidence and testimony about the civilian nature of the sites hit and stating that an investigator "also testified that, as far as he knows, there was not a single military feature in the immediate vicinity of the locations that was hit.").} The defense claimed that the Orkan rockets were aimed at legitimate military targets in Zagreb, namely the Ministries of Defense and Interior, the Military Airport, and the Presidential Palace.\footnote{Public Redacted Final Trial Brief of Milan Martić, ¶ 147, \\textit{Martić}, Case No. IT-95-11-T (2007).} As evidence that civilians were not the intended target, the defense cited to a confidential document dated May 2, 1995, from the Security Department of the Main Staff of the SVK Army, which stated:

Today at 1030 hrs, the Artillery units of the Serbian Army of Krajina fired eight rockets from and [sic] Orkan multiple rocket launcher on the Banski Dvori/Presidential Palace/ [sic], the Ministry of Defence and Pleso airport.\footnote{\textit{Id.} ¶ 167.}

Three of the four alleged targets were single buildings or groups of buildings: the Ministry of Defense, the Presidential Palace, and the Ministry of the Interior. All of these potential targets are located in downtown Zagreb, sometimes within meters of civilian structures.\footnote{See \textit{infra} notes 229-230, 232.} The Pleso airport, the main international airport for Zagreb, is surrounded by civilian neighborhoods.\footnote{\textit{Martić}, Case No. IT-95-11-T, Judgment, ¶¶ 305-08 (June 12, 2007).} Are these military targets?
a. *Pleso Airport*

Was the Pleso airport a legitimate military objective? In the Eritrea Judgment case, the EECC concluded that the airport outside of town was "unquestionably" a legitimate military objective as military aircraft were parked there at the time of the attack.\(^2\) Neither party in the *Martić* case presented evidence that military aircraft were located at the Pleso airport at the time of the attack, but state practice with respect to whether or not airports constitute military targets does not seem to turn on whether military aircraft are present.\(^2\) The Pleso airport, therefore, seems to have been a legitimate target.

Was the Orkan MLRS appropriate for targeting it? Cluster submunitions of the KB-1 Orkan type could destroy an aircraft as easily as they could destroy other vehicles or tanks.\(^2\) If the purpose was to destroy or impede use of the runway, the argument faces the same challenge as that facing the argument that cluster munitions could be used against hardened structures. The explosive impact of the KB-1 bomblets simply does not do great damage to concrete or asphalt surfaces.\(^2\)

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\(^2\) See supra text accompanying notes 187-188, 190.

b. Ministry of Defense / Ministry of Interior / Presidential Palace

The Ministries of Defense\textsuperscript{229} and Interior\textsuperscript{230} are classic military targets. The prosecution did not argue that those installations were not "by their nature, location, purpose or use mak[ing] an effective contribution to military action and whose total or partial destruction, capture or neutralisation in the circumstances ruling at the time, offer[ed] a definite military advantage."\textsuperscript{231} Located on St. Mark's Square, the Presidential Palace is the seat of the Croatian government.\textsuperscript{232} While one might argue that the civilian center of political life might not constitute a legitimate military target, the prosecution made no such effort. As stated earlier, the military experts argued that the bomblets could not significantly damage buildings.\textsuperscript{233}

3. Co-location, Co-location, Co-location: The Obligations of Attackers and Defenders When Military Targets are Intermingled in Civilian Areas

By the conclusion of trial, the prosecution was arguing that the Orkan rockets had landed "nowhere near" the alleged military targets.\textsuperscript{234} The

\begin{footnotesize}
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229. The Ministry of Defense is located several kilometers to the east of the National Theater, one of the buildings hit in the attack. According to a police investigator at trial, the Ministry of Defense is located at Peter Kralj Kresimir Square IV, near the Zvonimir Hotel. Rule 61 Testimony of Tuksa, \textit{supra} note 219, at 81. The MOD complex is about 300m by 400m in size. Trial Testimony of Lazarević, \textit{supra} note 204, at 5662-64. That the Ministry of Defense is located at this Square is confirmed by Croatian government websites. Croatian Ministry of Defence On-line, http://www.morh.hr/en/kontakti_en.asp (last visited Dec. 30, 2007). The Zagreb Tourist Bureau provides a website that pinpoints government ministries down to the block. Zagreb Tourist Board, http://www.zagreb-touristinfo.hr/?id=101&l=e&nav=nav9& solo=314 (last visited Dec. 30, 2007). The Ministry is located on the Petra Kralj Square, on a block bounded by Antuna Bauera street (on the west), Kralja Zvonimira (on the north), the Square itself (on the south), and on Stankaćeva (on the east). \textit{Id.} Kržanićeva Street is located about 200m away. \textit{Id.} "The [Krajina Serb Army] report also provides that '[a]ccording to our source, the Ministry of Defence in Kržanićeva Street was hit.' However, the Trial Chamber notes that the Ministry of Defence is not located in this street but in the nearby Baureova Street." \textit{Martić}, Case No. IT-95-11-T, Judgment, ¶ 461 (citations omitted).


231. Geneva Protocol I, supra note 17, art. 52(2).

232. Trial Testimony of Lazarević, \textit{supra} note 204, at 5664 (referring to Exhibit 804).

233. \textit{See supra} note 197 and accompanying text.

234. Prosecution Filing Regarding Site Visit, ¶ 4, \textit{Martić}, Case No. IT-95-11-T (Feb. 28, 2007) (on file with author). ("The visit to Zagreb reinforced the evidence that this city was a densely populated civilian location. The visits to the specific locations where Orkan rockets fell showed that nearly all of these locations were nowhere near purported military targets in Zagreb.")).
\end{footnotes}
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question then becomes one of the obligations of both attackers and defenders when military targets are intermingled in civilian areas—duties which do not evaporate just because one side or the other violates its obligations.\footnote{235}

\textbf{a. Obligations of Attackers}

As noted earlier, Article 57 of Additional Protocol I spells out the requirements of distinguishing civilian populations from those actively taking part in hostilities, insuring that civilians not be object of attack, sparing civilians from the ravages of war, and taking all necessary precautions, including the choice of weapons, to achieve these obligations.\footnote{236} At the same time, the presence of civilians does not render a target non-military in nature. Many states acknowledge that “[n]oncombatants in the vicinity of a military objective must share the danger to which the military objective is exposed.”\footnote{237}

The 1996 Rule 61 decision in Marti\'c assumed that military targets did exist but made clear that

\begin{quote}
[c]even if an attack is directed against a legitimate military target, the choice of weapon and its use are clearly delimited by the rules of international humanitarian law. There exists no formal provision forbidding the use of cluster bombs in armed conflicts. Article 35(2) of Additional Protocol II, however, prohibits the employment of “weapons, projectiles, and material and methods of a nature to cause superfluous injury or unnecessary suffering.”
\end{quote}

In addition, paragraph 4(b) of Article 51 of the same Protocol states that indiscriminate attacks are prohibited.\footnote{238} These include attacks “which employ a method or means combat which cannot be directed at a specific military objective.” Last, under the terms of paragraph 5(b) of that same Article, the attacks must not cause damage and harm to the

\footnote{235} “Any violation of these prohibitions shall not release the Parties to the conflict from their legal obligations with respect to the civilian population and civilians, including the obligation to take . . . precautionary measures . . . .” Geneva Protocol I, supra note 17, art. 51(8).
\footnote{236} See supra note 32.
\footnote{237} See supra notes 29 & 30 and accompanying text. The defense also cited to the Kupre\'\v{s}ki\'\i\ case for the proposition that protections for civilians cease or are diminished “when, although the object of a military attack is comprised of military objectives, belligerents cannot avoid causing so-called collateral damage to civilians.” Public Redacted Final Trial Brief of Milan Marti\'c, ¶ 76, Marti\'c, Case No. IT-95-11-T (2007) (citing Prosecutor v. Kupre\'\v{s}ki\'\i\, Case No. IT-95-16-T, Judgment, ¶ 522 (Jan. 14, 2000)).
\footnote{238} Rule 61 Proceedings, supra note 136, at 140.
\footnote{239} Id.
civilians. The civilian population disproportionate in relation to the concrete and direct military advantage anticipated.\textsuperscript{240}

\textit{b. Obligations of Defenders}

As stated above, Article 58 charges those defending an area to take precautions to protect civilians from attack, including “to the maximum extent feasible,” not placing military objectives in or near densely populated areas.\textsuperscript{241} The ICRC commentary on Article 58 states that

[as regards] permanent objectives, governments should endeavour to find places away from densely populated areas to site them. These concerns should already be taken into consideration in peacetime. For example, a barracks or a store of military equipment or ammunition should not be built in the middle of a town.\textsuperscript{242}

The defense emphasized the obligations of the party being attacked to take measures to protect its own civilians by citing to the ICRC commentary:

[Both] by the party launching the attack during the planning, decision and actions stages of the attack, and by the party that is attacked . . . . Each party should, in good faith design such measures and adapt them to the specific circumstances, bearing in mind the means available to it, an based on the general principles relating to the protection of the civilian population.\textsuperscript{243}

The prosecution, acknowledging the duties of defenders, cited to the Galić judgments as reaffirming other obligations under Article 58:

[T]he parties to a conflict are under an obligation to remove civilians, to the maximum extent feasible from the vicinity of

\textsuperscript{240} \textit{Id.}

\textsuperscript{241} Geneva Protocol I, \textit{supra} note 17, art. 58(2). \textit{See supra} note 33 for full text. Notably, [Article 58] is a corollary to the numerous articles contained in the Protocol of the benefit of the population of enemy countries. It is not concerned with laying down rules for the conduct to be observed in attacks on territory under the control of the adversary, but with measures every Power must take in its own territory in favour of its own nationals, or in territory under its control.

\textsuperscript{1977} ICRC Commentary, \textit{supra} note 162, ¶ 2239.

\textsuperscript{242} \textit{Id.} ¶ 2251.

military objectives and to avoid locating military objectives within or near densely populated areas [but] the failure of a party to abide by the obligation does not relieve the attacking side of its duty to abide by the principles of distinction and proportionality when launching an attack.\textsuperscript{244}

The final judgment agreed with the prosecution, holding that "the presence or otherwise of military targets in Zagreb is irrelevant in light of the nature of the M-87 Orkan."\textsuperscript{245}

4. Putting it All Together: Mapping Footprints, Error Ellipses, and Commingled Targets

With respect to military targets in populated areas, the case came down to each side blaming the other.\textsuperscript{246} The prosecution said the Serbian Krajina army intentionally targeted civilians, and that in the alternative, it used the wrong weapon if it meant to hit and truly damage the alleged military targets.\textsuperscript{247} The defense said that Croatia bore the blame for locating military objectives in a city, and that collateral damage is regrettable but inevitable in such a setting.\textsuperscript{248}

While the explosive power of cluster submunitions to damage buildings and airports has been discussed above,\textsuperscript{249} the issue of proximity bears closer examination.\textsuperscript{250} A somewhat analogous situation would be that of "attacking military installations on which civilian facilities exist . . . . The question is whether an entire area or installation can be treated as a single unitary whole during an attack." Michael N. Schmitt answers the question by concluding that "the presence of a clearly distinct civilian area, such as a shopping complex or housing area, on a military installation precludes treating the entire installation as targetable . . . . [IHL] requirements auger against treating military installations as a single entity for targeting purposes."\textsuperscript{251}

Assuming the obligations to target only military objectives and limit death and injury to civilians and damage to civilian objects, how close is too

\textsuperscript{244} Final Brief of Prosecution, ¶ 466 n. 1127, Martić, Case No. 1T-95-11-T (2007) (quoting Prosecutor v. Galić, Case No. IT-98-29-A, Judgment ¶ 194 (Nov. 30, 2006)).
\textsuperscript{245} Martić, Case No. IT-95-11-T, Judgment, ¶ 461 (June 12, 2007).
\textsuperscript{246} Id.
\textsuperscript{247} Id.
\textsuperscript{248} Id.
\textsuperscript{249} See, e.g., supra Part VII.B.2.
\textsuperscript{251} Id.
close? When the prosecution claims the cluster strikes were nowhere near the intended targets, what does that actually mean?

A close examination of the results of an attack, as well as the pre-strike information available to the attacker, can shed light on that question. How a strike actually turns out may aid in determining the intent of the attacker or in how well the proportionality/discrimination equation was made in the first place.252

Colonel Poje provided detailed testimony about the “error ellipse.” An Orkan rocket fired from forty-nine kilometers (the approximate distance of the firing) “could land as much as 1,032m to the left or right of its intended target, and 972m in front of or past its intended target.”253 As cluster munitions are dispersion weapons, the error ellipse concerns all of the area where the center of the footprint could land.254 Assuming the center point of the footprint landed on the outside edge of the error ellipse, the footprint itself would extend even beyond the edge of the ellipse.255

Martić Trial Exhibit 22, reproduced at page 199 of the Martić judgment, shows the strikes from the two days of attacks.256 The following analysis takes its measurements from that map.

The strikes hitting downtown Zagreb came closest to the alleged targets, but are nonetheless a fair distance away. The closest was strike three, less than 300m from the Ministry of Defense (a bomblet reportedly struck the Ministry). Strikes one and two were each about equidistant both from the Presidential Palace and the Ministry of Defense (strike one, approximately 750m; strike two, approximately 850m). Strike four came closest to the Presidential Palace, missing it by about 780m. Strike five was about equidistant between the Presidential Palace and the Ministry of Interior (between 900m and 970m from the targets).

As for the airport, the three strikes designated by the number six did come relatively close. The point nearest the airport is about 160m from the nearest airport parking lot (indeed, one bomblet reportedly hit the parking

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252. It is accepted that the anticipated military advantage versus the anticipated collateral damage is the central question. See Fenrick, supra note 25, at 175. “The actual results of the attack may assist in inferring the intent of the attacker as he or she launched the attack but what counts is what was in the mind of the decision maker when the attack was launched.” Id.
255. Id.
256. Martić, Case No. IT-95-11-T, Judgment, p. 199 (June 12, 2007) (citing Trial Ex. 22). All of the information in the following four paragraphs detailing the attacks on Zagreb is derived from this source.
lot), 240m from what appears to be the nearest terminal building, and 350m from the airstrip itself. The furthest strike point was no more than 500m from the airstrip.

Strikes seven and eight should definitely classify as nowhere near an alleged target. The strikes designated as number seven were over 5500m from the Ministry of Defense and over 4000m from the closest point at the airport. Strike eight was over 6000m from the Ministry of the Interior.

Overall, six of the eight strike areas—eight of the twelve actual rockets—were located within the Orkan error ellipses—within a 1000-meter radius—of the alleged targets. A fine-grained look at the data supports the Trial Chamber’s conclusion that the weapon was indiscriminate, even assuming a good faith effort to hit legitimate targets.

As an example, we can place the Ministry of Defense at the center of an error ellipse that size (with a one-kilometer radius) and plot cluster bomb “footprints” around the actual strike points. The defense argued that because the Ministry of Defense complex fills an area about 300 meters by 400 meters, an area weapon like the cluster bomb (with a footprint of 150 meters by 200 meters in which the bomblets fall) made sense to use. Three rockets fell well within the error ellipse (and thus the rockets performed as well as could be expected), but they fell nowhere near the Ministry of Defense.

In addition, there are innumerable civilian objects within the error ellipse around the Ministry of Defense. At the very edge of the error ellipse (and firmly within the error ellipse of the Presidential Palace) is Ban Jelacic Square, the main square of Zagreb (described by one witness injured in the attack as “the heart of the town, the very centre of the town.”) Also located in the error ellipse are the main bus terminal, the Zagreb Cathedral, the popular Strossmayer Square, and several schools.

Although the rockets performed as well as could be expected according to specifications, falling within a certain distance of the intended target, there were so many non-military targets within the error ellipse, in addition to the intended target, that the use of the Orkan was indiscriminate.

Legitimate military targets existed in downtown Zagreb, but the evidence supported the Trial Chamber’s conclusion that the Orkan MLRS system was inappropriate for use against military targets in an urban environment for three basic reasons: (1) the inability to target an unguided rocket at the far reaches of its range created a high probability that the

257. Trial Testimony of Lazarević, supra note 204, at 5663-64.
258. Rule 61 Proceedings, supra note 136, at 12.
259. See Martić, Case No. IT-95-11-T, Judgment, at 199.
260. Trial Testimony of Buntić, supra note 126, at 5763.
261. Trial Testimony of Lazarević, supra note 204, at 5663-64; Trial Testimony of Buntić, supra note 126, at 5764-65.
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rockets would stray onto civilian objects; (2) the large footprint of the weapon equally endangered nearby civilians; and (3) the bomblet explosive charge lacked the ability to do serious damage to hardened structures.

D. If Cluster Munitions Are Deemed Indiscriminate, Won’t Bigger Unitary Bombs Be Used Instead?

If cluster munitions cannot be used in civilian areas, militaries may feel they must resort to other weapons systems with larger ordnance. The Martić defense team strenuously argued that Martić and his staff made the right choice in selecting the Orkan, because the only other weapon at their disposal was the more powerful Luna M rocket system. The weapon chosen was the “one where the possibility of incidental damage is of a lesser degree.” The Luna rocket was described as having a very large warhead (more than 400 kilograms), offering poor targeting (with circular error probable/error ellipses of 500-700m), and being “completely inappropriate for shelling targets situated in towns like Zagreb.” Because of the uncertainty of being able to hit its target, “many rockets [would] have to be launched” to hit intended targets, resulting in much greater incidental damage.

The ICTY Trial Chamber, sub silentio, rejected the argument that restricting the use of cluster munitions use in populated areas would force belligerents to use more destructive unitary warheads in such areas. Professsor Greenwood argues to the contrary, along the lines of the Martić defense, and raises the possibility that the cure—limiting cluster munition use in civilian areas—may be worse than the disease—the deleterious effects of cluster munitions. This becomes a viable question only if military

263. Public Redacted Final Trial Brief of Milan Martić, ¶ 152, Martić, Case No. IT-95-11-T (2007). The defense was clearly arguing alternative theories. Earlier in their argument, they claimed that Martić had no knowledge about the Orkan rockets. Id. ¶¶ 149-50.
264. Id. ¶ 151.
265. Id. ¶ 158-60.
266. Id. ¶¶ 162-63; see also globalsecurity.org, FROG-7A (3R-11, 9K21, 9M21, R-65) FROG-7B (9K52, 9M52, R-70), Luna-M, http://www.globalsecurity.org/military/world/russia/frog-7.htm (last visited Dec. 30, 2007) (describing the basic characteristics of the Luna).
267. See Martić, Case No. IT-95-11-T, Judgment, ¶¶ 465-68.
268. Group of Governmental Experts of the States Parties to the Convention on Prohibitions or Restrictions on the Use of Certain Weapons Which May Be Deemed to be Excessively Injurious or to Have Indiscriminate Effects, Legal Issues Regarding Explosive Remnants of War, ¶ 24, U.N. Doc. CCW/GGE/I/WP.10 (May 23, 2003) [hereinafter Legal Issues Regarding Explosive Remnants of War] (prepared by Christopher Greenwood) (“If the alternative to an attack by means of cluster munitions is the heavy use of unitary weapons, the damage to the civilian infrastructure and the
commanders are given the green light to violate the discrimination principle\(^\text{269}\) and the proportionality principle\(^\text{270}\) in order to avoid violating the distinction principle. Although the overall discrimination principle may prohibit use of a particular weapon, it does not necessarily allow the use of an even worse weapon for the particular situation. The proportionality equation concerns the balancing of military advantage against collateral damage with respect to a particular attack.\(^\text{271}\) For that course of action to be acceptable, the military advantage must outweigh the anticipated collateral damage of that attack.\(^\text{272}\) The balancing test is not between an attack that is less costly to civilians as opposed to another attack that is more costly to civilians. If neither alternative results in an anticipated military advantage that outweighs the anticipated collateral damage of either action, than neither course of action is acceptable.\(^\text{273}\)

The Martić case provides an excellent example of this principle in practice. The Trial Chamber held that the Orkan rocket was an indiscriminate weapon when used in a densely populated area.\(^\text{274}\) The seemingly logical next step would be to use unitary ordnance against the targets. But the Luna M rockets, with large warheads capable of doing major damage, have targeting systems nearly as poor as the Orkan.\(^\text{275}\) And as the defense rightly stated, a Luna rocket missing its target in downtown Zagreb on a busy morning would have devastating effects on

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\(^{269}\) See supra Part II.B.

\(^{270}\) See supra Part II.C.

\(^{271}\) See supra note 31 and accompanying text.

\(^{272}\) See supra note 31 and accompanying text.

\(^{273}\) Virgil Wiebe, Ongoing Humanitarian Considerations in Cluster Munition Regulation, Presentation to Group of Governmental Experts, Geneva, Nov. 22, 2005, at slide 29 (on file with author). See also supra note 31 and accompanying text; Human Rights Watch, Myths and Realities about Cluster Munitions, Feb. 2007, http://www.hrw.org/campaigns/clusters/myths0307/myths0307web.pdf. “While some attacks with unitary munitions in populated areas may be lawful, those that are indiscriminate and disproportionate are a violation of IHL. It is untenable to argue that the only alternative to an illegal cluster munition attack is an illegal attack with unitary weapons.” Id. at 2. Fenrick has also addressed the general principle:

It should be remembered, however, that an artillery commander will have a limited choice of weapons systems to use and he or she may have to rely on one which is not the most appropriate. It must also be remembered that an attack which is conducted in accordance with military doctrine, that is, using the appropriate number of munitions in accordance with weapons expenditure norms to achieve a desired effect on a given target, may, nevertheless, be unlawful if, in the circumstances, it is indiscriminate or is expected to cause excessive collateral injury to civilians or damage to civilian objects.

Fenrick, supra note 25, at 163.

\(^{274}\) Prosecutor v. Martić, Case No. IT-95-11-T, Judgment, ¶ 463 (June 12, 2007).

\(^{275}\) Public Redacted Final Trial Brief of Milan Martić, ¶¶ 158-60, Martić, Case No. IT-95-11-T (2007).
civilians.276 The bottom line is that the Serbian Krajina army simply did not have at its disposal acceptable weapons to attack military targets in downtown Zagreb.

E. Death by Duds: The Lasting Effects of Unexploded Ordnance

What role did duds play in the Martić decision? The immediate and longer term dangers posed by unexploded cluster bomblets have been at the center of the debate over cluster bomb regulation. A recent study by Handicap International estimates that civilians account for ninety-eight percent of all reported casualties from cluster munitions.277 All munitions have some level of failure rate, and cluster submunition “duds” arguably were not intended by the designers or manufacturers of these weapons—after all, most would recognize that the desired outcome for an explosive device is to explode. The failure of bomblets to explode on contact nonetheless creates de facto anti-personnel mines, a characteristic exacerbated by the sheer numbers scattered during use.278

The Martić judgment marks a significant breakthrough and a missed opportunity. The Trial Chamber held Martić accountable for the immediate post-attack effects of cluster munitions,279 but missed the opportunity to hold him accountable for injuries caused by unexploded ordnance in the longer term.

1. If You Can Count the Immediate Effects of Unexploded Submunitions...

The bomblets in the Zagreb attack failed to explode on contact at an astonishing rate, based on testimony at the Rule 61 proceedings in 1996.280 Mario Petric, Chief of the Anti-Explosives Department, testified at the Rule 61 proceedings that his personnel retrieved about 1599 unexploded bomblets in the weeks following the attacks.281 The duds were either armed (and failed to explode because they hit at an angle) or were not armed at all as a...
result of the rocket opening too late in flight. Depending on whether eight or twelve rockets fell (each carrying 288 bomblets), the failure rate was between forty-six and sixty-nine percent.

On May 3, Police Officer Ivan Markulin died while trying to defuse a bomblet in the yard of the children’s hospital on Klaiceva Street. Three hours after the attack, the hospital director showed foreign diplomats the scene: “This is part of the jaw of the man who tried to defuse the thing,” he said. A reporter described Markulin’s body as “peppered with shrapnel wounds above the waist,” and having “no recognisable [sic] face.” The ICTY convicted Martić for Markulin’s murder. Police Officer Ivica Pukšec suffered severe injuries on May 3 while defusing a bomblet. His left arm was amputated. Pukšec was included among those for whom Martić was held criminally liable for inhumane acts and cruel treatment.

Legal commentators increasingly recognize that the risks of unexploded submunitions must be factored in to the proportionality calculus. Professor Greenwood formulates the issue as follows:

If there is known to be a serious risk: (a) that a significant percentage of the munitions or sub-munitions used against a target will not explode and will remain dangerous; and (b) those ERW will cause civilian casualties, then the resulting risk to the civilian population is a factor which may have to be taken into account in applying the proportionality test.

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282. Rule 61 Proceedings, supra note 136, at 90, 92-93; see also Rule 61 Testimony of Itani, supra note 183, at 111.
283. See supra note 204.
284. Rule 61 Proceedings, supra note 136, at 64, 76-78. Markulin died after having disarmed hundreds of bomblets. Id. at 78, 92; Trial Testimony of Lazarević, supra note 204, at 5650.
286. Prosecutor v. Martić, Case No. IT-95-11-T, Judgment, ¶ 470 (June 12, 2007); see also Rule 61 Proceedings, supra note 136, at 136.
287. Rule 61 Proceedings, supra note 136, at 86-87, 89.
288. Id. at 86-87, 92. Mario Petric was the Chief of the Anti-Explosives Department of the Zagreb Police. Id. at 85. In the transcript, Officer Pukšec’s name is spelled phonetically as “Buksec.” The spelling “Pukšec” is found in Annex II of the Corrected Second Amended Indictment of those injured on May 3. Martić, Case No. IT-95-11-T, Second Amended Indictment – Corrected, Annex II, at 19 (signed July 14, 2003, refiled Dec. 9, 2005).
290. Legal Issues Regarding Explosive Remnants of War, supra note 268, ¶ 22. Charles Garraway has also argued that “[i]f it is known that there is likelihood, or even a certainty, that an attack will leave behind some explosive remnants of war, then that must be factored into the equation.” Group of Governmental Experts of the States Parties to the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects, Working Paper: How Does Existing International Law Address the Issue of Explosive Remnants of War?, ¶ 16, U.N. Doc. CCW/GGE/XII/WG.1/WP.15 (Dec. 15, 2005) (based on the presentation of Charles Garraway to the
Professor McCormack and his colleagues Paramdeep Mtharu and Sarah Finnin have drawn similar conclusions about the rule of proportionality, particularly when cluster munitions are used "in any close proximity to civilians or in an area to which civilians are expected to return after the cessation of hostilities."291

Professor Greenwood goes a step further and argues that such a rule must be limited to the "immediate risk," defined as the risk "from unexploded sub-munitions in the hours immediately after the attack."292 The death of Officer Markulin and the serious injury of Officer Pukšec in the hours immediately after the attack on Zagreb clearly fit this situation.

As for the culpable mens rea of Martić in this case, the question again seems to be based on knowledge—did he know there was a risk of significant unexploded ordnance, and that it would place civilians at risk? As stated above, the prosecution presented considerable evidence at the Rule 61 hearing about the nearly 2,000 unexploded bomblets cleared in the aftermath of the attacks. But were Martić and his subordinates on notice that such unexploded ordnance could endanger civilians in the immediate aftermath of their use?

Serbian forces in Croatia used the Orkan over two years prior to the Zagreb attack.293 Following an Orkan cluster bomb attack on Sibenik in March 1993 that immediately wounded twenty-three civilians, the authorities also issued warnings about duds.294 Another attack on the town of Muc the previous March caused immediate injuries and left behind

12th Session of the Group of Governmental Experts of the States Parties to the CCW held in Geneva on November 12, 2005.


[T]he expected dud rate and the expected dispersal area of the submunitions will be highly relevant .... Some Respondent States were of the view that it can be anticipated, and must be expected, that any ERW left behind after an attack will lead to a loss of civilian life, injury to civilians, damage to civilian property, or a combination thereof. A weapons system that has a high failure rate, such as a cluster bomb, is likely to cause a much higher rate of ERW thereby generating higher levels of collateral damage as the duds subsequently explode. Whether this outweighs the military advantage depends on the situation and must be assessed on a case by case basis.

Id.

292. Legal Issues Regarding Explosive Remnants of War, supra note 268, ¶ 23. The issue of longer term effects is discussed in more detail in the following section, Part VII.F.2.

293. See Croatian Radio, supra note 2.

294. Id.
dangerous unexploded ordnance. Just as those within the Serb Krajina army knew of the characteristics related to the explosive effects, wide area footprints, and targeting challenges of the Orkan, they must also surely have known of the problems with duds.

2. . . . Then Why Not Count the Longer-Term Effects of Unexploded Submunitions?

But what of the longer term effects of unexploded submunitions? A bomblet found in July of 1995 caused severe injuries to Alen Kicic, Alen Prokic, Anto Saraf, and Damir Jambresic. The bomblet exploded as they were playing with it, near a spot where an explosion had occurred on May 3. These boys were not included in the indictment list of those injured, and therefore Martić escaped liability for their injuries. Major Itani testified about the long-term dangers at the Rule 61 proceedings:

The large numbers of unarmed, so to speak, bomblets, that could be recovered still pose a danger, as would be the case with those that are armed, and it is a residual danger that can last for many, many years, because if it is soft ground these things can get buried 25, 30 centimetres, and at some future date, through frost action or farming activity or construction, these could be dug up and accidentally exploded.

The Prosecution in its closing brief did not emphasize earlier evidence about the very high dud rates of the submunitions in Zagreb and did not try to include the injuries suffered by the four children in the July 1995 incident.

296. Rule 61 Testimony of Tuksa, supra note 219, at 66-67. Tuksa first testified that the event occurred on July 27, then later stated it occurred on July 20. Id.
297. Id.
298. Prosecutor v. Martić, Case No. IT-95-11-T, Second Amended Indictment – Corrected, Annexes, at 14-19 (signed July 14, 2003, refiled Dec. 9, 2005). The online version of the earlier Amended Indictment of 2002, supra note 139, makes reference to a list of victims in Annex II, but that list is not available on-line. Martić, Case No. IT-95-11-T, Second Amended Indictment – Corrected. The Amended Indictment of 2002 alleges fifty wounded victims on May 3 whereas the Second Amended Indictment, alleges only forty-eight wounded victims. Id. ¶ 52. Without access to the original Annex II, it is unclear why the number of alleged wounded dropped to forty-eight, but it seems unlikely that the reduction in number was due to the removal of these children from the list, simply because there were four of them, and the children were not actually injured on May 2 or May 3, but in July.
299. Rule 61 Testimony of Itani, supra note 183, at 111.
300. In an e-mail exchange with the lead prosecutor, the question of longer term consequences prompted the following response:
I wish I could say that we made a considered decision on the issue that you identify, but

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Martić could have been held accountable for the injuries suffered by these children, even though they were injured more than two months after the attacks. A fairly clear causal chain was established between the Orkan rocket attack and the bomblet that injured the children. Large numbers of duds were recovered.\textsuperscript{301} Zagreb had never been cluster bombed before,\textsuperscript{302} supporting the conclusion that the bomblet had come from the May attack. The event also occurred nearby the site of an earlier explosion on May 3.\textsuperscript{303}

The Trial Chamber also had no problem pinning the later death of Luka Skračić on Martić. Skračić experienced a blast wound to the head in the May 3 attack and died on June 6.\textsuperscript{304} The autopsy established a cause-effect relation between the injury and the subsequent death.\textsuperscript{305}

Accountability could have been reached through either theory posited by the prosecution for the other deaths and injuries and eventually accepted by the Trial Chamber: intentionally attacking civilians (regardless of the weapon used) or causing harm to civilians by using a weapon inappropriate for the purported military installations targeted.

Under the first theory, the prosecution proved that Martić and his highest general had acted on their earlier threats to bomb civilians in Zagreb and other Croatian cities if Croatia launched an offensive against Serbian Krajina.\textsuperscript{306} The Trial Chamber accepted the theory that Martić had violated the basic principle of distinction, holding Martić liable for harm to those civilians killed or injured by the bomblets.\textsuperscript{307} The passage of time, so long as it or some other intervening act does not break the causal link between act and injury, should not have immunized Martić from the achieved consequences of his intended actions. None of the balancing tests related to proportionality would be needed.

\textsuperscript{301} Rule 61 Testimony of Itani, \textit{supra} note 183, at 111.

\textsuperscript{302} Rule 61 Testimony of Tuksa, \textit{supra} note 219, at 82 ("The centre of Zagreb was never shelled, had never been shelled prior to that, as far as I know, not even during the Second World War. Nobody ever shelled Zagreb.").

\textsuperscript{303} \textit{See} Martić, Case No. IT-95-11-T, Second Amended Indictment – Corrected ¶ 52 (signed July 14, 2003, refile Dec. 9, 2005).

\textsuperscript{304} Martić, Case No. IT-95-11-T, Judgment, ¶¶ 310, 313, n.975 (June 12, 2007) (exhibit citations omitted).

\textsuperscript{305} \textit{Id.} at n.975; \textit{see also} Trial Testimony of Lazarević, \textit{supra} note 204, at 5653.

\textsuperscript{306} Martić, Case No. IT-95-11-T, Judgment, ¶ 313.

\textsuperscript{307} \textit{Id.} ¶ 472.
Under the second theory, the prosecution stressed that even if there were military targets in downtown Zagreb, the known attributes of cluster munitions made them the wrong choice in a densely populated area.\textsuperscript{308} The weapons were indiscriminate. The prosecution would have had to prove not only that submunition duds occur, but that Martić knew the duds could cause deaths or injuries months after use.

Such evidence did exist. In a disturbingly similar case, two children died and another was injured after trying to dismantle an unexploded Orkan bomblet in Sibenik, Croatia on June 13, 1993.\textsuperscript{309} This incident occurred as a result of the cluster bombing of Sibenik by Serbian forces beginning in January 1993.\textsuperscript{310}

Assuming mens rea could have been established, the debate moves to the question of proportionality. Can longer term deaths and injuries (as well as other ongoing damages) be considered a part of the proportionality equation? Professor Greenwood has argued longer-term risks of ERW are too uncertain to be a part of the calculus:

The degree of that risk turns on too many factors which are incapable or assessment at the time of the attack, such as when and whether civilians will be permitted to return to an area, what steps the party controlling that area will have taken to clear the unexploded ordnance, what priority that party gives to the protection of civilians and so forth. The proportionality test has to be applied on the basis of information reasonably available at the time of the attack.\textsuperscript{311}

Professor McCormack disagrees:

[M]ilitary planners and commanders are obviously going to take into account not just the expected short-term military advantage but also the longer-term military advantage. And if that is the case . . . , it should be both the short-term as well as the longer-term expectation [of civilian death and property damage] that ought to be part of the equation . . . . The balancing test does not obligate military planners to factor in the ‘unknowable,’ . . . [but] [i]t is very

\textsuperscript{308} See Martić, Case No. IT-95-11-T, Second Amended Indictment – Corrected ¶¶ 23(f), 51-54.
\textsuperscript{309} Croatia: Two Children Killed While Playing with Unexploded Bomb in Sibenik (BBC Summary of World Broadcasts, June 16, 1993).
\textsuperscript{310} Todd Bensman, Life Shattered for Croatians Targeted in Serb Missile Raids, ST. PETERSBURG TIMES (Fla.), Apr. 14, 1993, at 8A (“[T]he people who remain here will have to watch the ground as well as the sky. The small, unexploded bells scattered by the Orkan rockets are turning up with dangerous consequences—a child’s hand blown off one day, a car tire exploded the next.”).
\textsuperscript{311} Legal Issues Regarding Explosive Remnants of War, supra note 268, ¶ 23.
difficult for military planners to say “we can have no idea about the long-term expected consequences for the civilian population from the particular choice of weapons that we are engaged in” because statistics are available to indicate, for example, the likely or expected level of dud submunitions.  

Military planners in the U.S. are directed to consider collateral effects of a very broad range. The Joint Chiefs of Staff instruct war planners that “effects often spill over to create unintended consequences, which may be counterproductive . . . . An example of a counterproductive consequence entails injury or collateral damage to persons or objects unrelated to the intended target . . . . Consider second-, third-, and higher-order effects, especially political-military effects, during planning and assessment.”

Michael Schmitt has pointed out that “although it is sometimes questioned whether reverberating effects must be assessed during proportionality calculations, US doctrine affirmatively requires planners to consider them.” The reverberating effects to be considered include a range of issues involving damage to the civilian infrastructure, such as industry, power, petroleum, communications, transportation, public services; these issues are at least as complex as that of unexploded ordnance, if not more so.

And the longer term consequences of unexploded ordnance resulting from MLRS rockets are well-known not only with respect to the Orkan, but

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315. Jefferson D. Reynolds, *Collateral Damage on the 21st Century Battlefield: Enemy Exploitation of the Law of Armed Conflict, and the Struggle for a Moral High Ground*, 56 A. F. L. Rev. 1, 90 n. 356 (2005) (citing CHAIRMAN OF THE JOINT CHIEFS OF STAFF, JOINT METHODOLOGY FOR ESTIMATING COLLATERAL DAMAGE AND CASUALTIES FOR CONVENTIONAL WEAPONS: PRECISION, UNGUIDED AND CLUSTER CJCSM 3160.01A (Draft), at A-4 (Feb. 2004)) [hereinafter CJCS COLLATERAL DAMAGE METHODOLOGY]. The methodology defines “Collateral Effects”: Collateral Effects. This term encompasses all non-CBRN [chemical, biological, radiological and nuclear] effects resulting from military operations, beyond the immediate incidental physical damage caused by the weapon's detonation. These include unintentional or incidental effects or damage to the civilian infrastructure (e.g., industry, power, petroleum, communications, transportation, public services), economy, environment, political stability, Allied/Coalition partnerships, etc. within a region, country or affecting the territory of surrounding states, cross boundaries or buffer zones that were not intended in relation to the commander's objectives or functional target systems being struck.

*Id.*
with similar systems as well. In the U.S. invasion of Iraq, field commanders recognized those dangers:

MLRS [multiple-launch rocket system] in counterfire was very effective. Every time the enemy tried to mass his artillery, he got **whacked** with something. We do need to come up with an alternative for DPICM [Dual Purpose Improved Conventional Munitions] bomblets on the battlefield. Unexploded bomblets are a problem for innocent civilians and our light forces, our dismounted infantry, who come after MLRS has been used in an urban environment.316

There have been periodic rumors that the dud rate is intentional, in order to leave de facto minefields behind. In a call-in radio news program in June 2007, a caller claiming to be a former U.S. field artillery officer stated that his instructors said the dud rate on MLRS rockets was intentionally designed for that purpose.317 It may well be that the design was not intentional, but that the well-known effect was acknowledged and factored into plans for use of the weapon suggests that longer term effects can be worked into the calculus.318


As I was trained, and it could be the instructors were misinformed, but as I was trained there’s a failure rate in these is actually designed in to be about 10% or so . . . . The dud rate, and some of which may be armed, some of which may not be armed, that’s also designed in, and the reason is to prevent, is to basically an area denial so that the enemy that you’re firing these at can’t get in to either recover equipment or use that area again in defending against the attackers . . . . It actually does serve a military purpose to have some failure rate and to have that actually be random so they’re not easily cleared. Now that once peace comes or a ceasefire comes this becomes really difficult to clear, but when you’re in the middle of combat, that’s not something that you necessarily consider. *Id.* at 18:56-21:07.

F. Reprisals: The Devil Made Me Do It

An analysis of the Martić case would be incomplete without brief consideration of the reprisal defense. Martić argued that the Zagreb attack was necessary to stop the ethnic cleansing being committed by Croatian troops.\textsuperscript{319} A reprisal argument concedes that the disputed action was illegal, but that it was done to stop another illegal act. The Rule 61 decision in 1996 concluded that customary international law had evolved to the point of outlawing reprisals against civilians completely.\textsuperscript{320} That ruling subsequently came under stinging critique.\textsuperscript{321}

At trial, the defense argued that Operation Flash (the May 1, 1995 Croatian offensive that prompted Zagreb shelling) violated humanitarian law and resulted in the deaths of hundreds of local Serb civilians.\textsuperscript{322} They presented evidence of intentional massacres of civilians by Croatian forces on May 1 and May 2.\textsuperscript{323} The defense claimed the attack on Zagreb was a “lawful military operation,” i.e., a necessary “counter action in order to protect civilians from further atrocities.”\textsuperscript{324}

The defense argued that the ostensible threats against Croatian cities were actually warnings in fulfillment of the obligation to protect civilians when reprisals are taken.\textsuperscript{325} Prior warnings to bomb Zagreb were evidence that it “was not an unexpected military operation.”\textsuperscript{326} The threats were to prevent aggression against Serbian Krajina and also to “warn the Croatian Government to take necessary measures for the protection of the Croatian civilians.”\textsuperscript{327} The defense conceded that the warnings were given long before May 1995, but emphasized that each time such a threat was made, it was in direct response to an attack by Croatia.\textsuperscript{328}

\begin{footnotes}
\item[319] Prosecutor v. Martić, Case No. IT-95-11-1-T, Judgment, ¶ 464 (June 12, 2007).
\item[320] Martić, Case No. IT-95-11-61, Rule 61 Decision, 140 (Mar. 8, 1996) (“[T]he rule which states that reprisals against the civilian population as such, or individual civilians, are prohibited in all circumstances, even when confronted by wrongful behaviour of the other party, is an integral part of customary international law and must be respected in all armed conflicts.”).
\item[322] Public Redacted Final Trial Brief of Milan Martić, ¶¶ 130-33, Martić, Case No. IT-95-11-1-T (2007).
\item[323] Id. ¶ 131.
\item[324] Id. ¶¶ 135-36.
\item[325] Id. ¶ 142.
\item[326] Id.
\item[327] Id.
\item[328] Id. ¶ 144.
\end{footnotes}
The ICTY Trial Chamber in the 2007 judgment rejected Martić’s argument, but did not claim that customary international law had outlawed the practice entirely. Instead, it examined ICRC commentaries and state practice and concluded:

[B]elligerent reprisals are acts resorted to by one belligerent which would otherwise be unlawful, but which are rendered lawful by the fact that they are taken in response to a violation of that law committed by the other belligerent. Reprisals are therefore drastic and exceptional measures . . . . [They] may be used only as a last resort and only when all other means have proven to be ineffective.

The Trial Chamber found that well-established conditions had not been met. Even assuming Croatian violations, the action by the Serbian Krajina Army had not been a last resort and formal and timely warnings had not been made. Critical to the larger point of this article is that for this argument to even be made, the defense must concede that shelling Zagreb constituted a war crime.

VIII. LESSONS TO BE LEARNED

Nations have used cluster munitions extensively over the past four decades in multiple conflicts around the world. Each time they are used, significant concerns have been raised about their relative military utility when balanced against the death and destruction to civilians and civilian property. Their wide-area coverage and poor targeting dramatically increase the likelihood that civilians will be injured during a conflict. Their unacceptably high failure rates result in thousands if not hundreds of thousands of unexploded bomblets which kill and injure children and adults, deny access to agricultural and grazing land, and prevent rapid post-conflict reconstruction and development. Prior to these two cases no party has been found to have illegally used cluster munitions.

329. Martić, Case No. IT-95-11-T, Judgment, ¶ 468 (June 12, 2007).
330. Id. ¶¶ 465-66 (emphasis added) (citations omitted).
331. Id. ¶ 468.
332. Id. Three high ranking Croatian military leaders were indicted in 1996 for crimes related to the ethnic cleansing of the Serbian population from the Krajina region in Operation Storm from August 1995 to November 1995. The case has not yet gone to trial. Gotovina et. al., Operation Storm (IT-06-90), http://www.un.org/icty/cases-e/gotovina/cis-gotovina/cis-gotovina.pdf (last visited July 23, 2007). To the author’s knowledge, no Croatians have been charged for the ethnic cleansing of Serbs that occurred during Operation Flash, the predecessor to Operation Storm and the offensive to which Martić was allegedly responding.
333. Wiebe, supra note 80, at 91-96.
While these two cases fall short in their analyses and conclusions in some respects, their lasting effect nonetheless should be that military commanders and their civilian superiors think hard before using such weapons in civilian areas. Leaders can no longer claim lack of knowledge about the immediate and long-term effects of cluster submunitions warheads. Stockpiles of unguided systems incorporating submunitions with high failure rates proven in actual combat situations should be destroyed.

Efforts to distinguish these cases away as aberrations due to their extreme and clearly disproportionate outcomes should be resisted, and more prosecutions of cluster munition misuse must be undertaken.\(^3\)

While the Martić case resulted in a conviction and may have a deterrent effect, it also came at great expense and took many years to prosecute. To its credit, the prosecution persistently presented detailed evidence about the known nature and effects of the Orkan MLRS system.\(^3\) Effective prosecution requires such attention to detail, but a more effective check on the indiscriminate effects of cluster munitions should come through a more systematic regulation or ban of these weapons.

A. Advance Awareness of Cluster-Weapon Characteristics Can Lead to Criminal Liability

Advance knowledge of the characteristics of cluster munitions may contribute to findings of intentional targeting of civilians, conducting indiscriminate and disproportionate attacks, or failing to take reasonable precautions in attack. Direct knowledge of the effects of cluster munitions (and perhaps even reckless disregard in not learning of such potential effects) can lead to criminal indictment for war crimes and crimes against humanity, or to disciplinary action.

Proving such knowledge presents a challenge, but the principle itself is of great importance. Under the Martić judgment, willfulness included either malice aforethought or recklessness.\(^3\) The Trial Chamber inferred direct knowledge of weapon characteristics from circumstantial evidence.\(^3\)

\(^3\) See Fenrick, *supra* note 25, at 177 ("No tribunal to date has ever explicitly determined in a well articulate[d] manner that disproportionate damage was caused when assessing an incident in which the disproportionate impact of the attack was not blatant or conspicuous.").

\(^3\) See Martić, Case No. IT-95-11-T, Judgment, ¶ 462.

\(^3\) Id. ¶ 72 & n.138.

\(^3\) Id. ¶ 337.
Had the EECC applied the same level of scrutiny to weapon characteristics, it might have found that the Eritrea had intentionally attacked civilians. Eritrea avoided such a finding in part because it actually hit a legitimate military target and because its pilots were woefully undertrained.\footnote{338} Cluster munition characteristics nonetheless could have been used to prove an indiscriminate— as opposed to an intentional—attack. Nonetheless, once it determined that the effects of the weapon were clearly apparent to the Eritrean command, the EECC held Eritrea accountable for failing to take immediate steps the very same day to prevent further civilian deaths.\footnote{339} The Eritrean failure in the period following the attack to take remedial action counted as evidence of not taking feasible precautions in the Mekelo attack itself.\footnote{340}

B. The Use of Unguided Cluster Munitions with Wide-Area Effects May Lead to Criminal Liability.

The large footprints of lethal submunitions may be evidence of intentional targeting of civilians in urban areas. The targeting difficulties of unguided MLRS rockets, particularly at their maximum range, contributed significantly to the finding that the attack on Zagreb was indiscriminate.\footnote{341} The use of multiple cluster munition warheads in populated areas also may be considered a “widespread attack” against civilian populations. Cluster munitions defenders will argue that Martić may be distinguished because the ICTY Trial Chamber found that Martić intentionally targeted civilians.\footnote{342} But the judgment also notes that regardless of the presence of military targets, the Orkan is indiscriminate when used in densely populated areas.\footnote{343}

Militaries around the world field MLRS systems.\footnote{344} Artillery crews have long been aware of the difficulties in targeting unguided MLRS rockets similar to those considered in the Martić case.

United States MLRS rockets share characteristics with the Orkan. The U.S. MLRS may fire up to twelve rockets at a time up to a range of thirty-
two kilometers (less than Orkan’s fifty-kilometer range). Each U.S. MLRS rocket warhead contains 644 “dual purpose” bomblets (as opposed to 288 in the Orkan). The Israeli army fired thousands of U.S.-made MLRS rockets into southern Lebanon during the July/August 2006 war with Hezbollah. Hezbollah also fired rockets loaded with submunitions into Israel, striking civilian areas in a manner that could be deemed indiscriminate.

Unguided air-dropped cluster munitions similar to the CB-250K used at Mekele are also found in arsenals around the world. The U.S.-manufactured CBU-87 combined effects munition shares many characteristics with the CB-250K. The CBU-87 contains 202 submunitions (BLU-97 munitions) with similar size and designed purposes as the 240 PM-1 bomblets found in the CB-250K. The typical footprint for a CBU-87 is 200 meters by 400 meters (while the CB-250K is approximately 275 meters by 230 meters).

The two cases considered in this article should be instructive to prosecutors of violations of humanitarian law. Prosecutors must present detailed evidence of weapon characteristics that were known or should have been known to warfighters, and must also look at what actually happened and what users of cluster munitions did after seeing those effects in actual combat.

C. Cluster Munition Use Against Military Targets in Civilian Areas Should be Presumptively Off-Limits.

In both cases considered, cluster bombs hit populated areas with little warning during daylight hours. Both tribunals characterized the towns hit as “densely populated areas.” An obvious lesson is that use of cluster munitions in such areas should be presumptively prohibited.

345. Id.
346. Id.
351. Id. The BLU-97 bomblet also purports to have three “effects”: anti-personnel, anti-vehicle, and incendiary. Id. It is 20 centimeters by 6 centimeters in diameter. CBU-87/B Combined Effects Munitions (CEM), supra note 350. Planning and design began in the mid-’70s and production in the mid-’80s. BLU-97/B Combined Effects Bomb (CEB), supra note 349.
352. See discussion supra Parts III & IV.
munitions in city centers during busy times of day, even when military targets are co-located, should be presumptively off-limits.

In June 2000, the ICTY Prosecutor declined to prosecute NATO for its use of cluster munitions in the 1999 Kosovo conflict based on an investigation carried out by her staff. The final staff report referenced the 1996 Martić Rule 61 decision, which it noted regarded the use of the Orkan rocket with a cluster bomb warhead in that particular case as evidence of the intent of the accused to deliberately attack the civilian population because the rocket was inaccurate, it landed in an area with no military objectives nearby, it was used as an antipersonnel weapon launched against the city of Zagreb and the accused indicated he intended to attack the city as such.

The staff report concluded that there was “no indication cluster bombs were used in such a fashion by NATO.”

The final Martić judgment undermines key elements of the 2000 staff report analysis. The Martić Trial Chamber in the 2007 judgment acknowledged evidence that the Serbian Krajina military had targeted military objectives in Zagreb but emphasized that the rockets largely missed their targets and that “the presence or otherwise of military targets in Zagreb is irrelevant in light of the nature of the M-87 Orkan.” Thus, NATO in its 1999 Kosovo campaign had used cluster bombs similar to how Martić had used them in Zagreb, i.e., to attack military objectives in densely populated civilian areas.

A limitation of the Martić judgment may be that the Orkan rocket was fired from its maximum range, thus limiting the ability of the user to accurately target the munition. One might argue that cluster munitions, properly used, might be a legal weapon. While that may be the case, the Circular Error Probable/Error Ellipse concept has now worked its way into the case law of IHL. Simply because a weapon was fired within its range

2004).
355. Id.
356. Id.
358. Commentators critiqued the ICTY’s failure to consider this question. See, e.g., Thomas Michael McDonnell, Cluster Bombs Over Kosovo: A Violation of International Law?, 44 Ariz. L. Rev. 31, 117 (2002) (critiquing the ICTY committee’s failure, among other things, to consider “whether NATO’s use of cluster bombs in some populated areas constituted prohibited target area bombing”).
and performed as expected should not be sufficient as a defense, particularly in the case of cluster munitions fired into civilian areas. Close examination of actual cluster munition use also may well reveal that MLRS rockets have been used at or beyond their maximum range.

What about the use of cluster munitions in urban areas against "softer" targets? The Martić judgment made much of the fact that the explosive power of submunitions could do only slight damage to buildings like the Ministry of Defense. In U.S. military actions in Iraq, the U.S. army used MLRS in combination with precision guided unitary munitions to attack mobile artillery units in Baghdad. Suppressing artillery and tank fire, as opposed to hitting hardened structures, raises more difficult questions, but civilian deaths and injuries must be taken into account.

At a conference held in Dublin in 2003, Irish journalist Richard Downes recounted the death, terror, and havoc produced when U.S. forces attacked artillery and tanks hidden in a Baghdad civilian neighborhood with MLRS rockets and precision guided munitions in combination. He described being in a small convoy, trying to leave Baghdad and being diverted into a heavily populated neighborhood near the Mother of All Battles Mosque, described as a "Mesopotamian paradise of diverted rivers . . . and market gardens" and "very densely populated by tens of thousands of people." He also described tanks cleverly hidden in houses and an artillery piece hidden in a market garden. The attack occurred at 1:20 p.m. and struck a large market with many stalls. As ripples of cluster munitions exploded, "people [were] dropping left, right and center." A shower of explosive rain from cluster bomblets fell and he saw "a boy running into the rain . . . . He falls, he slumps, he was hit. [It was] not a normal falling down." He termed the use by Iraqi forces of civilian shields as a "despicable and disgusting turn of events."

360. See Richard Downs Presentation, supra note 359; see generally Richard Downs Audio Reports, supra note 359.
361. See Richard Downs Presentation, supra note 359; see generally Richard Downs Audio Reports, supra note 359.
362. See Richard Downs Presentation, supra note 359.
363. Richard Downs Audio Reports, supra note 359.
364. See Richard Downs Presentation, supra note 359.
365. See id.; see also Nadim Ladki, Dodging Danger on the Road out of Baghdad, REUTERS, Apr.
The situation pitted the responsibilities of attacker and defender towards the civilian population against one another. While the Iraqi army intentionally placed its civilians in harm’s way, the attacking forces were not relieved of their duty to nonetheless take precautions to limit civilian deaths and injuries. While acknowledging that allied forces subjected MLRS strikes in Iraq in 2003 to legal reviews, Human Rights Watch concluded:

The precautions to reduce civilian casualties did not prevent widespread use of cluster munitions in populated areas. The no-strike lists included certain civilian structures but not residential neighborhoods. Forward observers either ignored or failed to see civilians in populated areas. U.S. military lawyers did not challenge the proposed strikes although they raise serious concerns under IHL’s proportionality test . . . . The Coalition may have fired on legitimate military targets, especially when responding to incoming Iraqi fire, but the use of cluster munitions in populated areas almost always leads to civilian casualties. For that weapon, neighborhoods still occupied by their residents should be put on a no-strike list, to be overridden only with excellent information and careful consideration.366

D. Restricting Cluster Munition Use Should Not Be Seen as a Green Light to Use Even More Destructive Weapons Indiscriminately

The 

Martić judgment rejected the argument in this case that prohibiting the use of cluster munitions against military targets in an urban environment would force the belligerent to use more powerful unitary warheads instead.367 The discrimination analysis begins with an examination of the particular action in question to determine whether the military advantage outweighs anticipated collateral damage.368 Anticipated disproportionate or indiscriminate collateral damage may simply trump the use of large unguided unitary weapons in populated areas.369


367. See discussion supra Part VII.D.

368. See supra notes 268-73 and accompanying text.

369. See discussion supra Part VII.D.
E. Duds Matter: Probable Harm in the Immediate and Longer Term Aftermath Must Be a Part of the Proportionality Equation

The EECC in the Eritrea case did not discuss duds, while the Martić judgment held the defendant liable for the death of one person and the injury of another by unexploded bomblet duds. The ICTY 2000 final report to the ICTY prosecutor about NATO cluster bomb use downplayed the dangers of unexploded ordnance of cluster munitions by stating that there was no international consensus that unexploded submunitions were landmines. The Martić ruling makes clear that such treaties are not necessary to prosecute, so long as intent and knowledge can be shown. At the very least, the short-term dangers of cluster munitions to civilians and clearance personnel must be factored into the proportionality equation.

The longer-term effects should also be taken into consideration. The claim of indeterminacy becomes increasingly difficult as the documentation by clearance teams becomes increasingly more and more detailed. The longer-term effects on both city centers and agricultural areas can be calculated after the fact for the use of cluster munitions, and this evidence can be used both as an indication of intent by the user, as well as notice to the next user about the effects.

The medium- and long-term effects of unexploded cluster munitions are most starkly represented in Southern Lebanon. Millions of square meters of urban, agricultural, and pastoral lands were placed out of commission by unexploded ordnance. Media reports at the time indicated that Israel claimed to be attacking Hezbollah rocket launchers in many of the areas hit by cluster munitions. Even assuming that was the case, the long-term effects should nonetheless have been accounted for in the proportionality calculus.

371. FINAL REPORT TO PROSECUTOR, supra note 354, ¶ 27.
372. See id.
373. See discussion supra Part VII.E.2.
375. See supra notes 347-48 and accompanying text.
F. Magic Bullets? Why Trying to Build Better Cluster Bombs Does Not Resolve All the Indiscriminate Effects Associated with Their Use.

Can’t technology resolve the issues raised in these cases? If warfighters can target cluster munitions better, and can be assured that fewer “duds” will result, won’t the problems be resolved? The unitary and cluster munition variants of the new U.S. Guided Multiple Launch Rocket System are used as examples to address this argument.

Some planners seem to understand that cluster munition use in urban environments creates problems not only for civilians, but also for their own combatants. In October 2004, the U.S. commanding general of the multinational corps in Iraq “signed an urgent needs statement asking for a longer range, indirect fire weapon that could be fired . . . into an urban environment with a low probability of collateral damage and, at the same time, leave no unexploded ordnance.”

Precision guided munitions (“PGMs”) with unitary warheads are one possible alternative. The U.S. Army’s response was the XM31 Guided Multiple Launch Rocket System (“GMLRS”) Unitary. The XM31 carries a unitary two hundred pound warhead, has a range of fifteen to seventy kilometers, and a claimed circular error probable (“CEP”) of less than ten meters (as opposed to the 1000-meter CEP of the Orkan). This unitary warhead seems to have become the alternative of choice to MLRS cluster submunitions in Iraq.

So how about a cluster munition that is more accurately delivered, has fewer submunitions, and has a lower “dud” rate? The M30 GMLRS (a close relative to the XM 31 mentioned above) uses essentially the same precision guided rocket as the XM31. Its proponents claim a dud rate of two percent or less, and the rocket carries one third fewer submunitions than the current M26 rocket

377. Id. at 16, 18.
378. Capt. Andrew D. Lantz & Maj. Paul C. Weyrauch, GMLRS Unitary Battle Drill and the Ready First Combat Team, Field Artillery, Mar./Apr. 2007, at 34-36 (Describing highly accurate combat use of unitary rocket in urban fighting in Ramadi); see also Maj. Christopher W. Wendland, Letter to the Editor, GMLRS Unitary in the Close Fight, FIELD ARTILLERY, Jan./Feb. 2007, at 4. An initial reaction by battle-tested Special Operations Forces to the suggestion of using “MLRS” were comments like “You mean that thing with all those cluster bombs that can take out and entire grid square . . . you think we can really use that at [sic] in Iraq . . .” That initial skepticism assumed all MLRS were cluster munitions. Id.

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Proponents claim, “fewer PGM rockets will be fired to get the desired effects on target, and each rocket will have fewer submunitions with a reduced dud rate.”

Additionally:

It gives commanders precise destructive or protective/suppressive fires against targets arrays or expanded target areas too large for unitary warheads. It also can be employed to mitigate less than optimal sensor target location errors (TLEs). Whereas unitary warheads need “tight” target location accuracy, GMLRS can accept a slightly larger error and still provide effects on the target.

Responses to such claims have been made. Before presenting those arguments, it is important to remember that during the 1970s effort to ban cluster bombs, military experts gave similar assurances about the next generation of munitions. Those assurances proved hollow given the realities of warfare.

1. If Cluster Munitions Are Used in Large Numbers, “Even Submunitions with Low Failure Rates Risk Causing Disproportionate Human Suffering.”

For the M30, a reduction from 644 bomblets to 404 is certainly an improvement; however, it is still much higher than the 288 bomblets in the Orkan system. Large numbers, working as designed, create on impact a deadly killing field in civilian areas.

380. Kinne et al., supra note 376, at 18.
381. Id. at 18-19.
382. Id. at 19.
383. WEIDACHER ET AL., supra note 318, at 38-44.
384. Id.
385. See e.g., Wiebe, supra note 80, at 152-56 (comparing promises made about the British BL-755 cluster bomb with its actual performance in the Falklands and Kosovo).
386. WEIDACHER ET AL., supra note 318, at 38.
2. “Operational” Dud Rates Are Typically Much Higher than Dud Rates Claimed by Industry and Governments.\textsuperscript{387}

The M30 GMLRS reportedly uses the M85 bomblet or a variant as its low dud-rate option.\textsuperscript{388} Israeli Military Industries (“IMI”) manufactures (or licenses for manufacture) the M85 bomblet, and makes extravagant claims as to its reliability: “[t]he valuable and unique IMI Self-Destruct Dual Purpose (Anti Personnel & Anti Armour) M85 Bomblet ensures that no hazardous duds are encountered by advancing friendly forces.”\textsuperscript{389} While the dud rate for M85s is likely lower than for earlier versions of DPICM munitions, their limited use in Lebanon and Iraq has raised concern about dud rates much higher than those claimed by the manufacturer.\textsuperscript{390}


Human Rights Watch reported that during the initial invasion of Iraq in 2003, British forces may have been less restrained in their use of cluster munitions with M85s in urban areas due to their perceived increased reliability.\textsuperscript{392}


Even assuming new-fangled technology can “fix” all of the concerns currently associated with cluster munitions, hundreds of millions of defective submunitions remain in stockpiles around the world. Relying on Pentagon data, Human Rights Watch reported in 2005 that the U.S. had stockpiled about 728,500,000 submunitions, of which only about 31,000 had self-destruct devices to lower the dud rate.\textsuperscript{393}

\textsuperscript{387} Id.
\textsuperscript{390} Stephen Fidler, UK to Phase Out Cluster Bombs, FIN. TIMES, Mar. 21, 2007, at 4 (quoting Simon Conway, Director of Landmine Action: “I stood in fields of unexploded M85 munitions [in Lebanon]. They have a much higher failure rate than the Israelis or the UK military maintain.”). See also HUMAN RIGHTS WATCH, OFF TARGET, supra note 366 (“Human Rights Watch could not determine the rate from the field [in Iraq], but it did find evidence of duds . . ..”).
\textsuperscript{391} WEIDACHER ET. AL., supra note 318, at 38.
\textsuperscript{392} Id. at 38-39 (citing HUMAN RIGHTS WATCH, OFF TARGET, supra note 366).
Access to new technology does not prevent the use of the older and less-reliable munitions. Israel fired at least 1,159,000 older, unreliable submunitions delivered by U.S.-made M26 MLRS rockets (as well as approximately 2,800,000 other submunitions delivered by artillery rounds) during the 2006 war with Hezbollah, despite the fact that Israel is the designer and manufacturer of the M85 submunition. The reported reason? "Israel uses military aid funds to purchase cluster bombs from the U.S., and in order to buy IMI-made bombs, the Israel Defense Forces would have to dip into its own budget." The M85 submunition was used in limited numbers in Lebanon. Additionally, many nations stockpiling MLRS cluster munition systems cannot afford precision guided munitions.

5. Wide Area Munitions Are Still Wide Area Munitions—Their Use in Civilian Areas Should Still Be Presumptively Illegal.

Using the GMLRS cluster munition against "expanded target areas too large for unitary warheads" in order "to mitigate less than optimal sensor target location errors" seems to be a recipe for indiscriminate use if the weapons are deployed in a densely populated civilian area.

IX. CONCLUSION: CLUSTER BOMBS ARE NOT MACHETES

Defenders of measured use of cluster munitions will attempt to write off the two cases discussed in this article. Of course, they will say, killing civilians intentionally should be condemned, whether it is done with cluster munitions or machetes. They will say that the murder weapon in these cases just happened to be cluster bombs. But the Martić case goes well beyond finding that Martić intentionally killed and injured civilians, to make the clear case that cluster munitions are in a distinct category of weapons, particularly when used in an area where military targets are commingled in civilian areas. The judgment acknowledged that Martić’s forces had attempted to hit legitimate military targets in Zagreb, but held that the indiscriminate and disproportionate characteristics of the Orkan rocket could

394. HANDICAP INT’L, CIRCLE OF IMPACT, supra note 101, at 120.
395. Meron Rapoport, Israel Opted for Cheaper, Unsafe Cluster Bombs in Lebanon War, HAARETZ, Nov. 14, 2006; see also HUMAN RIGHTS WATCH, OFF TARGET, supra note 366, at 113 ("[d]espite the availability of new technology, the Coalition continued to use old cluster munitions with high dud rates [in Iraq].").
396. Kinne et al., supra note 376, at 19.
397. See discussion supra Part IV.
be anticipated to cause collateral damage reaching the level of war crimes and crimes against humanity.\textsuperscript{398}

The EECC did not find that Eritrea had deliberately targeted a civilian neighborhood in the Mekele case.\textsuperscript{399} Instead, it held that Eritrea had failed to take adequate precautions in attack.\textsuperscript{400} Such a holding should restrict cluster munition use in civilian areas even more than a finding of deliberate targeting. Rather than a straightforward case of killing civilians (with cluster munitions being the instant weapon of choice rather than machetes, machine guns, or strafing runs), the EECC looked at deficient pre- and post-strike Eritrean military preparation and training.\textsuperscript{401} Desired but undemonstrated changes in military planning and procedure most surely would have included heightened awareness of the unique characteristics and limitations of cluster munitions which can result in indiscriminate and disproportionate damage to civilians.

Has advanced technology rendered these cases quaint verdicts on bygone weapons of yore? Not by a long shot. Weapons similar to those used in these cases remain in stockpiles in vast numbers and continue to be used by belligerents—not to mention that past technological “fixes” for cluster bombs have proven hollow in practice.

Claims that eliminating cluster munitions will result in increased use of large unitary bombs causing even greater damage comes very close to a form of civilian hostage taking (for example, “you must allow us to kill fewer civilians legitimately or we will be forced to kill more illegitimately”). Replacing one illegal form of attack with one that is even more illegal should not be acceptable. The \textit{Martić} judgment rejected precisely that argument out of hand, and so should the rest of the international community.

The \textit{Martić} judgment also provided case support for considering the short-term impact of unexploded cluster bomblets when it held Martić responsible for the death and injury of clearance personnel following the attack. That decision must be consciously strengthened in future prosecutions, as the well-known humanitarian consequences of unexploded cluster munitions last beyond the hours and days after attack.

With each new conflict in which cluster munitions are used, the news stories unfortunately can be written in advance: cluster bombs are dropped on a town and immediately kill scores of civilians; curious children pick up and play with unexploded bomblets and are killed and maimed; cluster bombs are dropped on an agricultural area, and a farmer returns to his field to harvest or plant crops and is killed or maimed. The deadly tolling of

\begin{flushleft}
\textsuperscript{398} \textit{Id.} \\
\textsuperscript{399} See discussion \textit{supra} Part III. \\
\textsuperscript{400} \textit{Id.} \\
\textsuperscript{401} \textit{Id.}
\end{flushleft}
cluster bomblet *zvoncici* rings out not only during the heat of battle, but continues long after open hostilities have ceased. The doomed who fall as a result of cluster munitions are not only the young combatants eulogized by Wilfred Owen, but also the curious children who will certainly die as a result of unexploded cluster bomb ordnance:

*What passing-bells for these who die as cattle?*

*Only the monstrous anger of the guns.*

*Only the stuttering rifles’ rapid rattle*

*Can patter out their hasty orisons.*

*No mockeries now for them; no prayers nor bells;*

*Nor any voice of mourning save the choirs, –*

*The shrill, demented choirs of wailing shells;*

*And bugles calling for them from sad shires.*

*What candles may be held to speed them all?*

*Not in the hands of boys but in their eyes*

*Shall shine the holy glimmers of goodbyes.*

*The pallor of girls’ brows shall be their pall;*

*Their flowers the tenderness of patient minds,*

*And each slow dusk a drawing-down of blinds.*

Wilfred Owen, *Anthem for Doomed Youth* (1917)402