

# Use of Explosive Weapons in Populated Areas *Some Questions and Answers*

July 2010

Background Paper №2 of the Discourse on Explosive Weapons (DEW) project  
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## Summary

Explosive weapons use in populated areas raises concerns on various grounds, including from the point of view of armed violence reduction, international humanitarian law (IHL) implementation, public health and environmental protection. This paper will focus on the challenges that the use of explosive weapons in populated areas poses for the protection of civilians in armed conflict.

Building on a background paper prepared earlier this year for the Discourse on Explosive Weapons (DEW) project symposium held on 29 April 2010 in Geneva, and on discussions at the symposium, this document seeks to address some commonly heard questions about the use of explosive weapons in populated areas and the implications for policy.<sup>1</sup>

## Why is explosive weapons use in populated areas a problem?

In his 2009 report to the Security Council, the UN Secretary-General identified the use of explosive weapons in densely populated areas as a distinct humanitarian concern. According to the report, the use of explosive weapons in “densely populated environments ... inevitably has an indiscriminate and severe humanitarian impact” in terms of the “risk to civilians caught in the blast radius or killed or injured by damaged and collapsed buildings” and “of damage to infrastructure vital to the well-being of the civilian population such as water and sanitation systems”.<sup>2</sup>

**The use of explosive weapons in populated areas causes unacceptable levels of civilian harm.**

Recognizing that this represents a serious humanitarian problem, reporting on the use of explosive weapons, collecting data on its impacts on civilians, and improving transparency about policies of use could contribute to greater user accountability and enhance the protection of civilians in armed conflict.

In September 2009, the British NGO Landmine Action (now called Action on Armed Violence) presented data and analysis on the impacts of explosive violence in a report titled *Explosive Violence: The Problem of Explosive Weapons*.<sup>3</sup> One of the report’s findings is that explosive weapons use in populated areas<sup>4</sup> is linked to elevated levels of civilian harm, with the majority of victims tending to be civilians.<sup>5</sup> This pattern of harm occurred in several recent conflicts, such as in the Gaza Strip and the Vanni region of Sri Lanka, and continues in places such as Mogadishu, Somalia, as well as in Iraq and Afghanistan.

According to the report, explosive violence produces distinctive patterns of death and injury.<sup>6</sup> Individuals in the vicinity of an explosion are likely to suffer the direct effects of blast and fragmentation from the explosion and may also be harmed by collapsing structures. Survivors of explosive weapons use tend to suffer multiple, complex and severe wounds, which can result in a range of long-term physical conditions, and post-traumatic stress disorder.

Explosive weapons also have a “high capacity to damage the social and economic infrastructure upon which civilian populations rely”.<sup>7</sup> The destruction of transport facilities, markets, power, sanitation and health infrastructure, as well as housing and shelter, has profound implications for communities’ access to food, health care, clean water and other necessities of life.

In addition, explosive weapons consistently leave behind explosive remnants that continue to pose a threat to civilians and cause ongoing harm long after use and negatively impact socio-economic development.

## **What are explosive weapons?**

An explosive weapon can be defined as a casing with a high-explosive filling. The destructive effects of an explosive weapon result mostly from the shock wave and the projection of fragments produced by the detonation of the high explosive.<sup>8</sup> The blast and fragmentation effects radiating outward from the point of detonation encompass a zone within which no distinction is possible between combatants and military objectives on the one hand and civilians and civilian infrastructure on the other. Explosive weapons include grenades, artillery shells, anti-personnel and other mines, missile or rocket warheads, various kinds of bombs, improvised explosive devices (IEDs)<sup>9</sup> and cluster munitions.

Aside from weapons emplaced by hand, in terms of delivery to target, explosive weapons can be air-dropped (e.g. by bomber, helicopter or drone), ground-launched (e.g. by rocket or missile launcher, artillery or mortar, or thrown by hand), or deployed from surface marine vessels or submarines.

Explosive weapons can be labeled and classified in various ways, such as their place in military doctrine (for instance, whether they are intended for anti-personnel or multi-purpose use), hazardousness or technical characteristics, such as their material composition, charge shape, caliber or method of delivery. Despite these different possible subdivisions, states already appear to “treat explosive weapons as a distinct category of technology that is subject to categorical regulations and controls”.<sup>10</sup>

## **How can the protection of civilians from explosive weapons be improved?**

It is notable that explosive weapons are generally excluded as instruments for domestic policing and states tend to prohibit private ownership of explosive weapons.<sup>11</sup> However, states frequently use explosive weapons among civilian populations abroad in the context of armed conflict. In recent decades states have increasingly lost their monopoly of control

over this category of weapons as non-state actors have enhanced their capacity to acquire and use explosive weapons. Explosive weapons use by non-state armed actors has become a serious military challenge for states,<sup>12</sup> as well as a major additional risk to civilians, especially when used in populated areas.

A combination of factors determines the degree to which civilians' lives and livelihoods in populated areas are at risk from explosive weapons, including civilians' vulnerability and exposure, and capacity to respond to the threat posed by explosive weapons.<sup>13</sup> Analysis of these factors is important for protection programming that aims to reduce risks to civilians.

The risk to civilians can also be reduced by mitigating the hazard itself, that is, by reducing the threat that explosive weapons pose to civilians in populated areas. Less explosive weapons use in populated areas would reduce that threat and thereby enhance the protection of civilians. This could be achieved if the presumption were strengthened that the use of explosive weapons in populated areas will result in unacceptable civilian harm. This would entail:<sup>14</sup>

- better collection, analysis and dissemination of data on explosive weapons use and its impacts on civilians;
- recognizing that explosive weapons use in populated areas represents a serious humanitarian problem and developing a common language of humanitarian concern in response to unacceptable use of explosive weapons;
- more publicity and transparency about policies on explosive weapons use;
- increased user accountability and more rigorous scrutiny of claims regarding the acceptability of explosive weapons use; and
- greater recognition of the rights of victims of explosive weapons.

More systematic recording of and public reporting on the use of explosive weapons in populated areas and its impacts on civilians would lead to a better understanding and more awareness of the humanitarian problem this represents. How, for instance, do different types of explosive weapons impact civilians depending on their use in practice, and on civilians' exposure and vulnerability in different contexts? How do explosive weapons affect children, their families and communities over the short, medium and long term? How are the elderly or the disabled affected? What are the gender dimensions of this problem?

A deeper understanding of the humanitarian problem would help in devising more effective policies and practices to protect civilians in armed conflict against the effects of explosive weapons. It would also contribute towards improving implementation of IHL.

More transparency about policies on explosive weapons use would help delegitimize unacceptable use of explosive weapons and put moral and political pressure on users, which would be in the interest of states for the protection of their own populaces.<sup>15</sup> States, in particular, could increase recognition of the humanitarian problem and engage more on the humanitarian impacts of explosive weapons use, for instance in multilateral fora such as the UN Security Council. States and others could also further public debate and awareness by publicly reacting to situations where civilians are subjected to unacceptable risks or suffer unacceptable levels of harm and call on users to refrain from using explosive weapons in populated areas.

## How does IHL relate to this issue?

The use of explosive weapons during armed conflict is subject to the provisions of IHL.<sup>16</sup> Many past efforts to regulate the conduct of hostilities attest to a particular concern about the dangers that explosive weapons use in or near populated areas poses to civilians.<sup>17</sup> In some cases, these concerns have led states to restrict the use of or ban particular types of explosive weapons, notably, anti-personnel landmines and cluster munitions,<sup>18</sup> and to adopt measures aimed at minimizing the risks of explosive remnants of war, including through recording data on explosive weapons use.<sup>19</sup> But no rule of IHL, nor any weapons treaty, specifically regulates the use of explosive weapons in populated areas or explicitly requires documentation of the impact of these attacks.

In spite of existing legal rules on the conduct of hostilities, civilians in populated areas (and elsewhere) continue to suffer extensive harm in armed conflicts from explosive weapons.<sup>20</sup> Operations involving the use of explosive weapons are often characterized by a lack of transparency and publicly available data on their impacts on civilians. This makes it difficult to openly debate the acceptability of using explosive weapons in contexts in which they foreseeably will cause civilian harm. Lack of transparency and data also inhibits public scrutiny of policies, user accountability and redress for victims. Notably, if actual humanitarian harm from past attacks is not documented, how can the rules of precautions and proportionality be implemented properly?

The use of explosive weapons in populated areas also raises important moral questions. Where the balance between military/security needs and humanitarian considerations should be struck cannot be determined on the basis of IHL alone. It will also be necessary to look beneath the law at the moral reasoning upon which it is based.<sup>21</sup>

## Is better technology the answer?

The humanitarian credentials of existing and new weapon technologies should be evaluated on the basis of realistic data and publicly available analysis of their impacts on civilians in practice.

Users and producers of explosive weapons sometimes claim that technological features bring advantages in avoiding “collateral damage” to civilians.<sup>22</sup> These claims are advanced in respect to existing weapons technologies equipped with features, such as fail-safe mechanisms,<sup>23</sup> or new technologies, such as “smart”, precision, “low-yield” explosive weapons, or drones as platforms for explosive weapons delivery.<sup>24</sup> These claims tend to be made with reference to a weapon’s “killing radius” or other characteristics established through carefully controlled performance tests.

In order to assess the impacts of an explosive weapons technology on civilians in the short and long term, relevant and transparent data is required that takes into account the complex interplay of factors at work when a weapon is deployed in actual combat,<sup>25</sup> as well as the exposure and vulnerabilities of civilians to blast and fragmentation in different contexts.

## Notes

- 1 This paper focuses on policy aspects and does not make suggestions for operational guidance. For more information on the DEW project, visit UNIDIR's website at <[www.unidir.org/bdd/fiche-activite.php?ref\\_activite=499](http://www.unidir.org/bdd/fiche-activite.php?ref_activite=499)> or the DEW project website at <<http://ExplosiveWeapons.info>>.
- 2 Security Council, *Report of the Secretary-General on the Protection of Civilians in Armed Conflict*, UN document S/2009/277, 29 May 2009, para. 36.
- 3 See Landmine Action, *Explosive Violence: The Problem of Explosive Weapons*, 2009. The report looks at the humanitarian and developmental problems arising around explosive weapons broadly, during and outside of armed conflict, whereas this paper focuses on the use of explosive weapons in populated areas, primarily during armed conflict.
- 4 The concept of "(densely) populated area" or "concentration of civilians" is used in existing legal instruments. See for example art. 58(b), *Additional Protocol I to the Geneva Conventions*; art. 4, *Protocol II to the Convention on Certain Conventional Weapons*; art. 7(3), *Amended Protocol II to the Convention on Certain Conventional Weapons*; art. 1(2), *Protocol III to the Convention on Certain Conventional Weapons*.
- 5 Landmine Action, *Explosive Violence: The Problem of Explosive Weapons*, 2009, p. 24.
- 6 *Ibid.*, p. 28.
- 7 *Ibid.*, p. 31.
- 8 J.A. Zukas and W.P. Walters, *Explosive Effects and Applications*, 1998, p. 9; S. Glasstone, P.J. Dolan, *The Effects of Nuclear Weapons*, US Department of Defense, 1977, p. 153; Other effects may include heat, light and sound. The detonation of some explosive weapons can also release biological or chemical substances. The definition here of an explosive weapon also covers nuclear weapons. Most nuclear devices cause injury, death and damage mainly through blast. They differ from other high explosive weapons in that they are many thousands or millions of times more powerful, the temperatures reached in a nuclear explosion are much higher, and they create high levels of ionized radiation, and radioactive fallout as byproducts. For more detailed information, see *ibid.* For information about the likely effects of a nuclear explosion on civilians, see for instance World Health Organization, *Health Protection Guidance in the Event of a Nuclear Weapons Explosion*, information sheet, 2003, <[www.who.int/ionizing\\_radiation/en/WHORAD\\_InfoSheet\\_Nuclear\\_weapons21Feb.pdf](http://www.who.int/ionizing_radiation/en/WHORAD_InfoSheet_Nuclear_weapons21Feb.pdf)>.
- 9 There is no universally accepted definition of an IED. Broadly speaking, in contrast to conventional mass-produced explosive ordnance, IEDs are improvised or "home-made" by private individuals or groups. NATO defines an IED as "A device placed or fabricated in an improvised manner incorporating destructive, lethal, noxious, pyrotechnic or incendiary chemicals and designed to destroy, incapacitate, harass or distract. It may incorporate military stores, but is normally devised from non-military components"; *NATO Glossary of Terms and Definitions*, NATO document AAP-6(2010), 2010, p. 2-I-2.
- 10 Landmine Action, *Explosive Violence: The Problem of Explosive Weapons*, 2009, p. 54.
- 11 *Ibid.*, p. 46.
- 12 IED use by non-state armed actors has become widespread. In addition, some non-state actors have acquired more sophisticated explosive weapons. The Lebanese Hizbullah, for instance, damaged an Israeli naval vessel with an anti-ship cruise missile in 2006 and has flown drones over northern Israel several times in recent years. "Hizbullah's alleged Scuds raise storm clouds over Lebanon", *IJSS Strategic Comments*, vol. 16, Comment 20, 2010; "Hezbollah drone brought down over Galilee held 30kg of explosives", *Haaretz*, 14 August 2006.
- 13 Exposure can vary depending on the presence of a military target, infrastructure releasing dangerous forces, or non-blast proof buildings in the vicinity of civilians. Vulnerability, or susceptibility to losses, depends on a complex interplay of many factors. Within a civilian population, some groups may be more prone to loss, suffering and damage than others. Characteristics of these variations include gender, age, and physical and mental constitution. Civilians' capability and resources available to cope with explosive weapons hazards differ in function of, for instance, their knowledge about explosive weapons and explosive remnants, or their social and socio-economic situation.
- 14 This section builds on the recommendations put forward in Landmine Action, *Explosive Violence, The Problem of Explosive Weapons*, 2009, p. 14.
- 15 Explosive weapons use by non-state actors constitutes a powerful challenge to state capacity to maintain public order and security (for example the threat of terrorist bombings) and an increasing military challenge in some parts of the world (such as IED use in Afghanistan and Iraq).
- 16 Explosive weapons are occasionally used in situations where IHL does not apply or where its application is contested. For the relevant rules of IHL, see <[www.icrc.org/ihl](http://www.icrc.org/ihl)>.
- 17 Reflected in, among other provisions, art. 25 of the *Regulations annexed to 1907 Hague Convention IV*; art. 24 of the *1923 Draft Hague Rules on Air Warfare*; and art. 51(4) of *1977 Additional Protocol I to the Geneva Conventions*.
- 18 *Amended Protocol II to the Convention on Certain Conventional Weapons, Anti-Personnel Mine Ban Convention, Convention on Cluster Munitions*.

19 Cf. Protocol V to the Convention on Certain Conventional Weapons.

20 This may be because the legality of particular instances of use is often contested. Some rules of IHL are open to wide interpretation and there is often no agreement on their implementation in specific situations.

21 H. Slim, *Killing Civilians: Method, Madness, and Morality in War*, 2008, p. 259. Slim notes with reference to the principle of military necessity that “arguments from necessity allow warring parties to justify an enormous amount of civilian suffering”, p. 174. Similarly, with respect to proportionality in attack, one may question whether an attack with explosive weapons on a military object in a populated area that does not result in excessive civilian harm is always acceptable, however extensive the civilian harm.

22 Consider, for instance, Raytheon’s fact sheet on its AGM-65 Maverick missile: “Its guidance is accurate to within one meter, which greatly reduces the possibility of collateral damage during urban close air support”, <[www.raytheon.com/capabilities/products/agm65/](http://www.raytheon.com/capabilities/products/agm65/)>.

23 Cf., for example, US Secretary of Defense, “DoD Policy on Cluster Munitions and Unintended Harm to Civilians”, memorandum, 19 June 2008, <[www.defense.gov/news/d20080709cmpolicy.pdf](http://www.defense.gov/news/d20080709cmpolicy.pdf)>.

24 For a discussion of many of these technologies, with particular focus on robotics, see P.W. Singer, *Wired for War: The Robotics Revolution and Conflict in the Twenty-first Century*, 2009.

25 Belief in the greater humaneness or precision of small missiles or “low-yield” bombs could serve to lower the threshold for use of these explosive weapons in populated areas and thus cause greater harm to civilians. See, for instance, “US drones using smaller missiles”, *Dawn.com*, 27 April 2010: “The new systems also have made operations in urban areas more feasible. This may enable the drones to target suspects in large cities as well”.



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The United Nations Institute for Disarmament Research (UNIDIR)—an autonomous institute within the United Nations—conducts research on disarmament and security. UNIDIR is based in Geneva, Switzerland, the centre for bilateral and multilateral disarmament and non-proliferation negotiations, and home of the Conference on Disarmament. The Institute explores current issues pertaining to the variety of existing and future armaments, as well as global diplomacy and local tensions and conflicts. Working with researchers, diplomats, government officials, NGOs and other institutions since 1980, UNIDIR acts as a bridge between the research community and governments. UNIDIR's activities are funded by contributions from governments and donor foundations. The Institute's web site can be found at:

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