special report

Cluster Munitions: Should They be Banned?

Cluster munitions have been used in at least 23 countries, produced in 33 and stockpiled in over 70; their submunitions number into the billions.[1] They cause lasting humanitarian problems and have recently been the target of campaigns to ban their use. This article aims to summarize the history, utility, legacy and legislation surrounding cluster munitions.[2]

by Henry Dowlen, MB BS

According to the recent Dublin Conference, a cluster munition can now officially be defined as "a conventional munition that is designed to disperse or release explosive submunitions, each weighing less than 20 kilograms, and includes those explosive submunitions."[3] Throughout the history of the use of cluster munitions, their technical specifications, post-conflict legacies and the legislation with respect to the ongoing Oslo Process have been debated. This process, launched by Norway in 2007, aimed to negotiate a ban on cluster munitions and achieved recent success—the convention was agreed upon and will be open for signature in December 2008.

While there are strong opponents and proponents of the cluster-munition ban, it is only with due consideration of their military utility versus humanitarian imperatives that a solution can be devised. Limited empirical data is currently available on either their military efficacy or the effects on human morbidity and mortality rates; further research into these factors is needed.

History

Cluster munitions date to World War II when German forces dropped "butterfly bombs." These air-deployed munitions held anti-personnel bomblets that could detonate on impact or be set for delayed and anti-handling settings. Civilians were specifically targeted (bomblets were camouflaged to kill farmers at harvest time[4]), and unexploded bomblets were found too unstable to disarm.

It was not until the Second Indochina War (also known as the Vietnam-American War) that cluster munitions were used again—most notably in Laos—with any significance. Between 2 and 3 million tonnes (1.9 to 2.9 million tons) of ordnance were dropped over Laos from 1964 to 1973, much of which was cluster munitions that subsequently failed to explode. In 2005, the recorded casualties increased from 100 a year to almost 200, an increase attributed to a rise in the price of scrap metal, which enticed scrap-metal collectors to take greater risks by trying to recover the metal from unexploded ordnance. The number of casualties was later reduced because more economic opportunities became available, according to *Landmine Monitor*.

Aside from the butterfly bombs in WWII, modern cluster bombs were designed in the context of the Cold War to attack large military formations; furthermore, they act as force multipliers, reducing the logistics and manpower risked for a military goal.[5] The footprint of a single cluster munition can be in the region of half a square kilometer (nearly one-quarter square mile). The rationale for cluster bomb use is important, as the military efficacy of them is in some dispute. "No detailed military study of the military utility of these weapons … has ever been made public."[4]

An undetonated cluster submunition with parachute deployed, lying on the ground outside an Afghan village.
ALL PHOTOS COURTESY OF STEVE MANNION

Clearance is hampered by a lack of access to and visibility of the explosive remnants of war. Indiscriminate use and high failure rates are cited as the two areas of concern giving grounds for humanitarian scrutiny of cluster weapons,[6] and according to research by the Cluster Munitions Coalition, a coalition working to ban cluster munitions internationally, at least 60 percent of casualties from unexploded cluster munitions are children.[1]

During the first Gulf War in 1991, over 13 million submunitions were used,[6] of which around 400,000 bomblets failed to detonate[4] due to factors such as poor manufacture, poor use and inclement weather conditions.[7] With regard to this last factor, some cluster munitions' self-arming capacities are particularly susceptible to high winds or variations in altitude when dropped—for instance if conditions do not allow the munitions' subunits to spin properly, they cannot arm and detonate as intended. During the post-Gulf War cleanup of unexploded ordnance, seven U.S. troops were killed in one accident.[8]

Records from Kosovo in 1999 suggest that cluster munitions were a weapon of convenience, while post-conflict studies concluded that the attacks had little immediate impact.[9] In 2003, Human Rights Watch criticized the number of cluster-munition attacks by the United States

and the United Kingdom forces that affected civilians.[10] After the first Gulf War, however, the military recorded that "Iraqi units were devastated and demoralized. … The fact that the ground war lasted only four days … can be largely attributed to the effect of cluster munitions."[4]

Scope

Cluster munitions can deploy large amounts of explosives over a wide area and can be ground- or air-launched. They are also multipurpose weapons with variants that affect vehicles, roads, personnel and electrical stations (deploying reels of conductive wire).[4] They can contain chemical weapons or lay landmines. Initially intended to break up concentrations of armored vehicles and infantry,[11] they have evolved for a variety of uses. In general, they consist of a canister, which breaks open to release submunitions over an area known as a "footprint." Billions of cluster submunitions are stockpiled[12] in over 70 states and produced by 33 countries today.[13]

Older models of cluster munitions are simpler and generally do not have guidance or self-destruct mechanisms. Submunition fuzes are armed through the spinning motion that occurs after they are jettisoned from the parent casing, and malfunction can occur during either of these processes. The "all-ways acting fuze" is designed to ensure the device explodes even if it does not land in the correct alignment; however, it also acts as an anti-handling device, making UXO much more likely to detonate with a small movement.[4]

Failure rates for cluster munitions are so high that they are accounted for in the planning of military operations.[13] In the past 42 years, nine countries confirmed the use of at least 440 million cluster submunitions, with average failure rates between 5 and 30 percent. A minimum of 22 to 132 million would therefore have become ERW.[14] Several operational factors influence the reliability of submunitions, including poor delivery technique, age of the submunition, weather and terrain.[13] Recent tests in Norway have shown that self-destruct features are often not as reliable as manufacturers claim.[15]

The United Kingdom has agreed to withdraw munitions from service that cannot self-neutralize, cannot discriminate between targets, have explosive content or have numerous submunitions.[16] China and Russia have indicated they would not replace all their submunitions. Russia claimed that modern cluster munitions are reliable, safe and effective, and it might be better to discuss munition design and best practices for usage rather than implement new legislation.[17]

So many cluster munitions are held by so many states, it would be understandable to say that their military utility has grown beyond question. This argument, however, has not to date been made coherently.[18] Cluster munitions apply an area effect (i.e., the footprint of the attack) for a military advantage; therefore, the effects of any attack should be in proportion to the target and the importance of the military goal. Cluster munitions used in an area of civilian and military cohabitation, however, almost guarantee civilian casualties.[13] The military efficacy of cluster munitions has been further questioned after the deaths of U.S. troops during and after the first Gulf War, killed by their own UXO, not to mention the impediment to mobility when operating in contaminated areas.[19] There have also been incidents of other troop casualties from cluster munitions in post-conflict situations, including NATO troops in Kosovo.

Close-up of an undetonated cluster submunition.

Legacy

The main type of submunition that was dropped on Laos has a life expectancy in the soil of approximately 100 years, and while today some are found badly corroded, others look almost new.[20] There is growing interest in the effects on ERW by the natural environment and also the effects of removing them: "The consequences are …likely to cause an ERW problem resulting in … damage to the environment."[21]

Despite advances in clearance vehicles and the use of special detecting animals, clearance generally must be done manually. A recent environmental impact study undertaken by the United Nations Mine Action Service found that removal operations significantly damage the environment, and long-term damage arises from destruction of flora, contamination of water systems and damage to the natural habitats of wildlife.[22] Disposal of ERW by burning or detonation releases huge quantities of metal fragments, dust and nitrogen oxides into the environment,[23] although it is possible to incinerate ERW and reclaim the energy, or utilize the chemicals for other purposes.[24] Richard Kidd, former Director of the Office of Weapons Removal and Abatement in the United States Department of State's Bureau of Political-Military Affairs, argues that "the problems associated with cluster munitions are not nearly as bad as other ERW … [and] there simply is no large-scale demand for financial resources to clear cluster munitions."[17]

On the other hand, Lao farmers are gradually expanding the land they use, and this involves a risk of exploding UXO, resulting in serious injury or death. In case studies carried out by Richard Moyes of Landmine Action and the Cluster Munitions Coalition, land is abandoned only if other economic options are available. People without options are forced to use contaminated land by necessity.[25, 14] ERW degrade habitats by altering food chains, making conservation of protected areas difficult, and polluting the soil and water supplies.[25] There are those, however, that argue that the very presence of ERW is protective of the natural environment, as it prevents human development, which may otherwise destroy natural ecosystems.

Some evidence from Afghanistan, Kosovo and elsewhere shows there is a significantly greater risk of being killed by a submunition than by an anti-personnel landmine.[12] In a 2006 study by Handicap International, casualties from cluster munitions

An undetonated cluster submunition lying on the ground outside an Afghan village.

were greater than the predicted value based on landmine data, as well as being disproportionately comprised of civilians (98 percent).[14] It should be noted, however, that Steve Mannion for The HALO Trust concluded there is far less threat from landmines to civilians, and that submunitions are unlikely to detonate unless handled or thrown.[26] Once people realize what cluster munitions are, they can often be avoided more easily than other UXO unless the cluster munitions are hidden by dense vegetation or other means.

Those most likely to disturb and detonate ERW are farmers, children and scrap-metal collectors. Injuries sustained include multiple traumatic amputations of limbs, burns, puncture by shrapnel, ruptured eardrums and blindness.[25]

The International Committee of the Red Cross observed that those killed or injured by submunitions in Kosovo were 4.9 times more likely to be under 14 years of age than victims of anti-personnel mines. According to the ICRC, "This may be due to the fact that such submunitions are often brightly coloured, lying on the ground and assumed to be duds." [27]

ERW pose a crippling threat to the development of a community.[28] There are costs incurred not only in clearing land for use, but also in caring for those injured and loss of land use due to fear of ERW. Prioritization of clearance, focusing on the number of square kilometers of productive land that has been lost,[24] is important where it is not possible to clear every square meter of contaminated land.[20]

From 1993–2007, the United States donated over US$1.3 billion toward humanitarian mine action (including cluster munitions abatement)[20] and the United Kingdom has contributed significant resources to understanding the extent of the problem as well. Many NGOs, however, feel that the users of cluster munitions have done little to contribute to understanding the harm caused by these weapons.[6]

Legislation

Recommendations based on existing legislation have been put forward to guide best practice when cluster munitions are deployed, including responsibilities to provide information and warnings to civilians both during and after conflict.[25] Despite these recommendations, there is no agreement over which rules of international humanitarian law are relevant, although legislation exists to cover indiscriminate weapons and obligations to clear landmines.

Additional Protocol I (1977) of the Geneva Conventions sets out rules regarding distinction, discrimination, proportionality and feasibility in the use of weapons.[29] Many feel cluster weapons violate the principles of proportionality, distinction and discrimination,[11, 29] and there is 40 years' worth of evidence concerning consistent civilian harm.[7]

In 1993, the 1980 U.N. Convention on Certain Conventional Weapons[30] was updated with a fifth protocol on ERW.[31] Adopted in 2003 and entering into force in late 2006,[32] it was criticized for not being strongly worded enough.[25] The perceived weaknesses in the CCW were the catalyst for formation of the Oslo Process, which takes a harder line toward cluster munitions.[1]

Other legislation of relevance is the Rio Declaration of 1992, Principle 24 of which states that "warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of armed conflict and cooperate in its further development."[33]

Corporate social responsibility is also relevant, especially relating to companies producing cluster bombs. This requires voluntary engagement, although the U.K. government believes this is how business should account for economic, social and environmental impacts.[34]

The Ottawa Convention,[35] under which signatories agree to ban anti-personnel landmines, holds some parallels for cluster bombs, but the blurring of boundaries between the two types of weapons can be unhelpful as there are some distinct differences. For practical purposes, cluster munitions do not fall under the Ottawa Convention, and therefore some believe they require specific legislation.[36]

One notable absentee from the Ottawa Convention and discussion relating to cluster munitions is the United States. It is the world's largest single financial contributor to mine and UXO clearance, yet many still feel it pays lip service to the cluster munitions issue.[37] The United States still produces, uses and sells cluster munitions; however, in 2007 the United States placed restrictions on the sale or transfer of these weapons.[38]

Ban Initiative

The Cluster Munition Coalition was founded at The Hague in November 2003 to protect civilians from cluster munitions; it consists of around 300 civil-society organizations.[39] It was bolstered by Norway's declaration in late 2006 that it would work toward an international ban, following frustration with a lack of effort by the CCW (negotiations which are ongoing).[18] In February 2007 the United Nations, CMC, ICRC, some interested countries, and other humanitarian organizations met in Oslo to discuss means of moving toward a ban. This became known as the Oslo Process, which aims to "prohibit the use, production, transfer and stockpiling of cluster munitions that cause unacceptable harm to civilians."[4] Follow-up meetings have occurred with the aim

Aerial photograph showing craters over impact site of a cluster munition.

of concluding the process by the end of 2008; an agreement was reached at the cluster munitions conference held in Dublin, Ireland, in May 2008. (See additional article on this subject on page 65.)[2]

In the author's opinion, an outright ban on cluster munitions is unlikely to provide a workable solution to the humanitarian problems posed by these weapons because it would likely be ignored by many states.

Possible Solutions

One solution that has been proposed is to reduce the quantity of submunitions per cluster munition, leading to a lower likelihood of leaving ERW. For instance, Germany has proposed the use of cluster munitions with less than 10 submunitions that are sensor-fuzed.[28] A more radical measure is using non-explosive "kinetic energy rods" in cluster munitions, which can pose no ERW threat as they mechanically destroy targets to which they are guided to.[40] Finally, a move from mechanical to electrical fuzes would reduce the likelihood of events in which failure might occur.[4]

Definition of cluster munitions is important; some states feel a weapon should not be referred to as a cluster munition unless it has a minimum number of subunits, which would allow them to possess "area-effect weapons" that are not defined as cluster munitions. There is some logic to this argument as, below a certain number of submunitions, the problems associated with cluster munitions dwindle into insignificance, or to the significance of multiple single munitions with no subunits.

Conclusion

It seems that cluster munitions are suited for a form of warfare unlikely in modern conflict. Those who would support their use, however, are undermined by the lack of evidence of military efficacy and drowned out by those voices against cluster munitions that have growing evidence to support their point. Not only are cluster munitions viewed as an indiscriminate weapon in their mechanism of area effect, but in the past they also have been used in a seemingly indiscriminate manner, leaving a profound legacy.

Military forces would do well to identify the circumstances in which cluster munitions have conferred a real military advantage over other munitions, and to provide recommendations for the development of viable alternatives and better guidance for commanders on how and when to use such weapons. There need to be more rigorous restrictions put on munitions' undetonation rates and self-destruct features.

Three distinct constituencies appear to be forming in response to the Oslo Process as it pursues a wholesale ban on all cluster bombs. First, there are ban proponents who feel that these weapons will always cause unnecessary civilian harm without more fundamental changes to individual states' practices, and they advocate for nothing less than a total ban.[7] Second are opponents of the ban—most notably the United States, whose stance hardened against any new convention that specifically sought to ban cluster munitions in the run up to the February 2007 Oslo meeting.[37] This is, however, an over-simplification; in 2007 the U.S. Congress took steps to place controls on cluster munition stockpiles, design, manufacture and exportation. Finally, there are moderates who see compromise as the only viable resolution for the issue. The Norwegian Minister of Foreign Affairs, in a recent publication, stated, "Today, no serious actors advocate a total prohibition against all … cluster munitions."[11] Indeed, it is possible that pressure for the over-rigorous application of humanitarian principles in war to cluster munitions, without a realization that states will continue to use area-effect weapons, will weaken the Oslo Process.

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