

# Arguments for restricting cluster weapons: Humanitarian protection versus “military necessity”

by Eric Prokosch<sup>1</sup>

Concerned about the terrible toll of land-mine injuries around the world, six organizations issued a call in October 1992 for an international ban on the use, production, stockpiling and transfer of antipersonnel mines.<sup>2</sup> Other organizations have taken up the call, and the campaign is already having a big impact. One result of the pressure will be the convening, pursuant to a request by France, of a review conference on the 1980 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. This renewed interest in controlling indiscriminate and excessively injurious weapons should not be confined to mines but should extend to other classes of modern anti-personnel weapons as well.

The last major attempt at control was in the series of conferences in the 1970s leading to the adoption of the 1980 Convention with its three Protocols. The discussions then were in response to the introduction of new technologies which increased the risk of excessively injurious and indiscriminate effects. In the course of the discussions, Sweden with other countries proposed prohibiting the use of incendiaries, anti-personnel cluster weapons and a series of other munitions. The Convention finally adopted fell far short of the expectation raised by these proposals.

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<sup>1</sup> The author wishes to thank Dr. Julian Perry Robinson and Richard Huthrie for their helpful comments on drafts of this article.

<sup>2</sup> Arms Project of Human Rights Watch and Physicians for Human Rights, *Landmines: A Deadly Legacy*, New York, Human Rights Watch, 1993, Appendix 1, pp. 361-362.

This article examines the case today for restricting the use of a type of munition which was included in the original Swedish proposals: anti-personnel cluster weapons. Other weapons which need to be restricted or banned include anti-personnel mines,<sup>3</sup> incendiaries,<sup>4</sup> blinding weapons,<sup>5</sup> other directed-energy weapons,<sup>6</sup> fuel-air explosives, and especially injurious small calibre weapons.<sup>8</sup>

## The emergence of modern cluster weapons

Bomb clusters of several types were used in World War II: clusters of incendiary bombs, operating on the principle that a large fire was most likely to result from many small fires; and clusters of fragmentation bombs, used to a limited extent against troops on the ground. The origins of modern cluster weapons can be traced back to a series of developments which began in the 1950s and were linked to the needs, perceived in the Korean war, of a technologically superior army facing a numerically superior enemy. There were three important areas of innovation: technol-

<sup>3</sup> *Ibid.*

<sup>4</sup> Protocol III to the 1980 Convention places severe restrictions on attacks on military objectives located within a concentration of civilians and, in particular, prohibits completely any attacks by air on such objectives. This provision is intended to prevent huge concentrations of civilians being wiped out by fire: the emphasis is on the prevention of indiscriminate effects. Some delegations at the U.N. Conference which adopted the Convention wished also to protect combatants against the cruel burns caused by incendiaries (in the original Swedish proposal, the use of incendiary weapons would have been prohibited completely, except for illuminating devices and incendiary projectiles used exclusively against aircraft or armoured vehicles; see H. Blix, "Current Efforts to Prohibit the Use of Certain Conventional Weapons", *Instant Research on Peace and Violence*, 1974, Vol. 4, No. 1, p. 27). The Conference drafted and sent to the U.N. General Assembly a resolution inviting all governments "to continue the consideration of the question of protection of combatants against incendiary weapons" with a view to taking up the matter at a review conference on the Convention. Y. Sandoz, "Prohibitions or Restrictions on the Use of Certain Conventional Weapons", *International Review of the Red Cross*, No. 220, January-February 1981, pp. 13-14, 17.

<sup>5</sup> L. Doswald-Beck, ed., *Blinding Weapons: Reports of the Meetings of Experts Convened by the International Committee of the Red Cross on Battlefield Laser Weapons: 1989-1991*. Geneva, ICRC, 1993.

<sup>6</sup> L. Doswald-Beck and G. C. Cauderay, "The Development of New Anti-personnel Weapons", *International Review of the Red Cross*, No. 279, November-December 1990, pp. 565-577.

<sup>7</sup> *Ibid.*

<sup>8</sup> *Ibid.* A resolution was adopted by the U.N. Conference in 1979 which, *inter alia*, appealed to all governments "to exercise the utmost care in the development of small-calibre weapon systems, so as to avoid an unnecessary escalation of the injurious effects of such systems" (Sandoz, *op cit.*, p. 33).

ogies to disperse hundreds of high explosive submunitions of “bomblets” from a single dispenser, along with the associated fusing systems; a decision to reduce the average fragment size, in line with the results of battlefield casualty surveys and laboratory studies of the wounding process; and techniques of controlled fragmentation to ensure that, on explosion, the submunitions would break up into hundreds of fast-moving fragments of the optimal size.

Modern cluster bombs were first used in the U.S.-Indochina war. Compared to the crude World War II bomb clusters, the new munitions embodied a number of advances. Most of the dispensers were streamlined for external carriage on high-speed aircraft; the bomblets were smaller and more numerous, the use of controlled fragmentation made them more effective against more people; and the area coverage was much greater.

The cluster bomb most widely used in Vietnam, the CBU-24, consists of a bomb-shaped metal case, or “dispenser”, containing 640 to 670 round, one-pound (0.45 kg) bomblets, each of which on explosion shoots off several hundred 7/32-inch (5.6 mm) steel balls in all directions. Dropped from an airplane, the dispenser opens in the air, relasing the bomblets which are aerodynamically designed to scatter in a pattern. If dropped in such a way as to place one bomblet per 100 square metres, a single CNU-24 would cover an area of 6.7 hectares, and a B-52 bomber loaded with CBU-24s could spread 25,000 bomblets at 20 m intervals over an area of 2.5 km by 1 km.<sup>9</sup>

So extensively was North Vietnam bombed with CBU-24s that the authorities there claimed the weapon was being used against the civilian population. This was denied by U.S. sources, who said it was being used against anti-aircraft sites, truck parks and other military targets. The charge that villages were being bombed was answered with claims that anti-aircraft weapons were located in villages.<sup>10</sup>

Many other cluster weapons were introduced in Vietnam, some as a result of developments going back to the 1950s and others as “quick-fix” adaptations to new battlefield uses. There were various kinds of bomblets—anti-personnel bomblets with delay fuses, anti-personnel bomblets with jungle penetration fuses, anti-tank bomblets, and bomblets with combined effect—anti-tank and anti-personnel, anti-materiel and

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<sup>9</sup> These estimates are from the Stockholm International Peace Research Institute report *Antipersonnel Weapons*, London, Taylor & Francis, 1978, p. 161. They are based on the assumption that a single bomblet has an effective casualty radius of 5 to 10 m, so that effective delivery against personnel would be one bomblet per 100 square metres.

<sup>10</sup> E. Prokosch, “Antipersonnel Weapons”, *International Social Science Journal*, 1976, Vol. 28, No. 2, p. 341.

incendiary, with different bomblets usable interchangeably from the same dispenser. Bomblet-filled warheads were fitted to artillery shells. Cluster technologies were used to sow anti-personnel mines from the air: spherical "Wide Area Anti-personnel Mines" with tripwires, plastic "Dragontooth" mines, and explosive-filled canvas pouches called "gravel mines".

The years since the U.S.-Indochina war have seen the proliferation of cluster weapons technologies in other countries. The technologies themselves have been refined, with "modular", interchangeable systems of dispensers and submunitions, electronic systems for programming the timing of delayed explosions of bomblets, and devices allowing a pilot to select the dispersal pattern of the bomblets. Press reports from conflict areas in different parts of the world speak routinely of cluster bombs being dropped. With the great many wars that have raged in recent years, cluster weapons and the other new anti-personnel weapons have made zones of armed conflict far more dangerous than before for both soldiers and civilians.

## Grounds for restricting cluster weapons

In today's world, an outright ban on cluster weapons would clearly be unacceptable to the many nations which now possess these weapons and have either used them or contemplated using them in warfare. What is needed is to find a formula that identifies those weapons which are especially harmful from a humanitarian point of view, and then to build the argument that it is necessary and desirable to bring about an international ban on their use.

In a working paper submitted in 1975 to the Diplomatic Conference on the Reaffirmation and Development of International Humanitarian Law Applicable in Armed Conflicts, Sweden and 12 other countries offered formulas to prohibit the use of cluster weapons dispensing fragmentation bomblets and anti-personnel mines, respectively:

*"Anti-personnel fragmentation weapons.* Anti-personnel cluster warheads or other devices with many bomblets which act through the ejection of a great number of small-calibred fragments or pellets are prohibited for use".

*"Anti-personnel land-mines.* Anti-personnel land-mines must not be laid by aircraft".<sup>11</sup>

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<sup>11</sup> Document CDDN/IV/201, with addenda and corrigenda, reproduced in *ICRC Conference of Government Experts on the Use of Certain Conventional Weapons (Second Session — Lugano, 28.1-26.2.1976): Report*, Geneva, ICRC, 1976. Annex A.21, p. 199.

The proposal on cluster weapons contained in the first formula had already come under heavy fire at the ICRC Conference of Government Experts on the Use of Certain Conventional Weapons, in 1974, and it did not find its way into the 1980 Convention. The air-delivered mines covered by the second proposal are dealt with in Protocol II to the Convention under the heading of “remotely delivered mines”. The use of such mines under the Convention is not prohibited as in the Swedish proposal but is subject to safeguards which, however, are weakened by several loopholes. The location of minefields is to be recorded, but this requirement applies only to “pre-planned minefields”, leaving open the possibility of sowing quantities of mines in the heat of battle without recording their location (Article 7).<sup>12</sup> Remotely delivered mines are not to be used unless their location can be accurately recorded *or* the mines contain an effective neutralizing mechanism. Advance warning must be given of the delivery of remotely delivered mines which may affect the civilian population “unless circumstances do not permit” (Article 5) — another significant loophole.

In the first of the Swedish formulas just quoted, the reference to “small-calibred fragments or pellets” is useful because it helps to distinguish anti-personnel bomblets from other bomblets, employing larger fragments, which are intended for use against materiel. Even here there may be room for argument: the 5.6 mm steel balls in the CBU-24 bomblets, although primarily anti-personnel, were reportedly effective also in damaging light materiel such as the gasoline tanks of trucks. The word “anti-personnel” does not suffice to define the class of weapons which should be banned. It leaves undecided the fate of combined-effects munitions, and omits weapons which may not be primarily for use against personnel but are nonetheless candidates for restriction on humanitarian grounds.

The problem may be illustrated by reference to two cluster weapons used in the 1991 Gulf war. The JP233 anti-runway cluster bomb, a British weapon, consists of a dispenser loaded with 30 cratering bombs and 215 area denial bomblets. As used in the Gulf war, two dispensers are slung under a Tornado fighter-bomber. Flying at low altitude over an enemy runway, the pilot drops the bombs. The cratering bombs, which are equipped with parachutes, penetrate the runway surface and explode,

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<sup>12</sup> Article 7 of Protocol II merely enjoins the parties to a conflict to “endeavour” to record the location of mines and minefields which are not pre-planned.

producing craters, while the area denial bomblets are deployed on legs around the craters. The bomblets are fitted with delayed action fuses with time lapses of reportedly up to 36 hours, during which time the bomblets impede repairs by exploding, damaging vehicles and killing or injuring repair crews.<sup>13</sup>

The degree of risk to civilians from the JP233 would depend on the proximity of airfields to civilian settlements and the risk of errors in delivery, which is relatively small in low-altitude bombing. In view of the specific design objective and high cost of the bombs, it seems unlikely that they would be used against other types of targets. Although in the terms of the Swedish formula this weapon delivers "many" bomblets producing fragments, the risk of indiscriminate use against civilians would appear to be low.

At the other extreme is the Multiple Launch Rocket System (MLRS), a U.S. weapon used for the first time in the Gulf war. The MLRS comprises a 12-tube surface-to-surface rocket launcher, firing one rocket from each tube. The aiming is controlled by a computer and the launcher is mounted on a tracked vehicle, enabling it to be driven away quickly after firing to elude enemy replying fire.

In the version used in the Gulf war, each of the 12 rockets has a warhead containing 644 bomblets, giving a total of 7,728 bomblets deployed when the rockets are fired together. The bomblet has a shaped charge and is designed to be effective against light armour, materiel, and personnel; its destructive power is similar to that of a hand grenade. A salvo of 12 rockets is said to deploy bomblets over an area of 23 hectares at mid-range and almost twice that area at the maximum range of over 30 km.<sup>14</sup> MLRS targets in the Gulf war were reported to include troops, artillery, armour, air-defence systems, combat engineering equipment and command centres.

With its long range and wide area coverage, the MLRS carries an obvious risk of indiscriminate effects. Its targets in the Gulf war may have been military targets in the desert, but it is easy to envision other wars where civilians would be nearby. An area coverage of 20 or even 40 hectares could well be out of all proportion to the actual size of the targets against which the weapon was being deployed, such as an artillery battery. Accuracy of delivery could be another problem: in other wars the MLRS might well be used in situations where no visual observation or other on-

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<sup>13</sup> *Jane's Weapon Systems: 1987-88*, London, Jane's, pp. 822-823.

<sup>14</sup> *Ibid.*, pp. 128-129.

the-spot target designation was possible or where the weapon's computer would not work accurately.<sup>15</sup>

Simply on the ground of indiscriminate effects, the MLRS would be a strong candidate for an outright ban on use.<sup>16</sup> But the humanitarian objection to the MLRS is not on these grounds alone. As with other cluster weapons which dispense a great many bomblets or are on a wide scale, the sheer number of explosive bomblets poses a long-term risk to civilian life. Because of manufacturing defects, a certain percentage of bomblets fail to explode and remain on the surface or underground, constituting a mortal danger for soldiers, civilians, livestock and wild animals if they are disturbed even long after the fighting is over. Where the bomblets land on surfaces other than those for which they have been designed — sand, for instance — the rate of unexploded munitions is likely to be higher. These duds are, in effect, unexploded mines more destructive than the smaller anti-personnel mines, yet they are not covered by even the limited protection on the use of mines offered by Protocol II to the 1980 Convention.

Somewhere in between the JP233 and the MLRS is the Rockeye. This Vietnam-era cluster bomb dispenses 247 bomblets, each with a shaped charge warhead which is designed to penetrate armour but will also injure personnel. Huge stocks were on hand when the 1991 Gulf war began, and over 20,000 Rockeyes were reportedly dropped, deploying some 5,000,000 bomblets across the battlefield.<sup>17</sup> Apart from any indiscriminate effects at the time of the attacks, a dud rate of — for example — 5% would result in a legacy of a quarter of a million unexploded bomblets, posing a continued threat to civilian life.<sup>18</sup>

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<sup>15</sup> Factors which need to be taken into account in assessing the potential indiscriminate effects of a weapon include its area coverage in relation to the areas of likely targets and their proximity to civilians; variations in area coverage and accuracy according to the mode of attack (high-altitude bombing from high-speed aircraft is likely to be less accurate and result in a greater area coverage than low-level bombing from low-speed aircraft); and increases in area coverage when multiple quantities of weapons are used in an attack.

<sup>16</sup> As indicated in the report of the 1976 ICRC Conference of Government Experts on the Use of Certain Conventional Weapons (paragraph 70, p. 120), the Swedish proposal to ban the use of anti-personnel cluster weapons was based both on their indiscriminate effects and on the risk of multiple injury, constituting unnecessary suffering. This latter point was challenged by other experts at the Conference.

<sup>17</sup> W. M. Arkin, D. Durrant and M. Cherni, *On Impact: Modern Warfare and the Environment: A Case Study of the Gulf War*, Washington, Greenpeace, 1991, Appendix A, pp. 3-4.

<sup>18</sup> Rockeye bomblets were the most prevalent forms of unexploded ordnance in Kuwait after the war, according to an official of a company clearing mines there (*Landmines: A Deadly Legacy*, p. 53). According to information presented at the ICRC Symposium on Anti-personnel Mines (Montreux, 21-23 April 1993), the Rockeye bomblets dropped in Kuwait had several different fusing systems which could not be distinguished externally, and the only safe method of disposal was *in situ* demolition.

As its title indicates, the 1980 Convention is based on two principles of international humanitarian law: the prohibition of use of weapons causing superfluous injury or unnecessary suffering and the prohibition of indiscriminate attacks, a principle which in turn is intended to serve the wider goal of protecting civilians from the adverse effects of warfare. The emerging catastrophe of land-mines and the descriptions of cluster weapons above show that several further factors need to be brought into the discussions:

- A temporal factor relating to the lingering risk posed by unexploded munitions.<sup>19</sup>
- A quantitative factor: the risk to non-combatants from anti-personnel mines and cluster weapons is aggravated by the sheer quantity of munitions used. As thousands, tens of thousands, hundred of thousands and millions of mines and bomblets are strewn across the land, the number of duds increases proportionally and so does the long-term risk to civilian life.<sup>20</sup>

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<sup>19</sup> As the ICRC stated in a report presented to the Twenty-first International Conference of the Red Cross in 1969, belligerents should abstain from using weapons whose harmful effects are beyond the control, in time or space, of those employing them (Sandoz, *op. cit.*, p. 5). Under Article 51(4) of Protocol I additional to the Geneva Conventions of 1949, attacks which are prohibited as indiscriminate include "those which employ a method or means of combat the effects of which cannot be limited as required by this Protocol". Protocol II to the 1980 Convention attempts to give protection against long-term effects of land-mines by providing for recording and publication of the location of mines and minefields.

<sup>20</sup> For example, in Xieng Khouang province, one of the most heavily bombed areas of northern Laos, anti-personnel bomblets were reported to be the most commonly encountered type of unexploded munition after the U.S.-Indochina war. In 1979 the U.S.S.R. initiated an aid programme to clear unexploded munitions from farm land in Xien Khouang province. Over 18 months some 5,000,000 hectares were cleared of 12,700 explosive remnants of many types, with CBU-24 bomblets predominating. (E. S. Martin and M. Hiebert, "Explosive Remnants of the Second Indochina War in Viet Nam and Laos", in A. H. Westing, ed., *Explosive Remnants of War: Mitigating the Environmental Effects*, Stockholm International Peace Research Institute, London and Philadelphia, Taylor & Francis, 1985, pp. 44-47).

William M. Arkin, Director of Military Research of Greenpeace International, has estimated that a minimum of 24,000,000 bomblets and mines were dropped from cluster weapons (artillery, rockets, and cluster bombs) during the 1991 Gulf War. As Arkin has pointed out, estimates of rates of unexploded munitions vary from 2 to 34 claimed by manufacturers to 10 to 2% observed on the ground. A rate of 5%, credible to most experts, would mean that this short war left over a million unexploded munitions. (These figures are from a paper presented by W. M. Arkin at the public session of the NGO Conference on Anti-personnel Mines held in London on 24 May 1993.)

According to information presented at the ICRC Symposium on Anti-personnel Mines in April 1993, one of the companies engaged in explosive ordnance disposal in Kuwait after the 1991 war cleared over 100,000 unexploded submunitions. The company also cleared over 130,000 anti-tank mines and 230,000 anti-personnel mines from conventionally laid Iraqi barrier minefields in Kuwait.



- The factor of cost. As the cost of submunitions is reduced, it becomes easier for armed forces to use more of them.

In weighing humanitarian considerations against military needs, the quantitative and temporal factors should also be taken into account. A purely or primarily anti-tank weapon, for example, would not normally be regarded as a candidate for exclusion on humanitarian grounds. The Rockeye is such a weapon, yet the large number of bomblets poses problems. One of the original rationales for this weapon was the need to compensate for aiming imprecisions in free-fall bombing from modern high-speed aircraft by using an *area* weapon against a *point* target. A jet pilot would have difficulty hitting a tank with a conventional high explosive bomb (so the rationale went), but if 247 bomblets are scattered over an area containing a tank, the chances of a hit are increased. The question that must be asked from a humanitarian point of view is this: is the long-term risk posed by the deployment of 247 bomblets outweighed by whatever probability there is of disabling a tank which may be located in the target area. The same question should be asked about other cluster weapons in relation to the quantities deployed and the targets against which they are directed.

## **Towards a new logic**

The process of deciding on weapons bans has traditionally been thought of as a balancing exercise where humanitarian considerations are weighed against military needs. As outcomes of that process, the 1980 Convention and its aftermath are eloquent demonstrations of its inadequacy.

Taking the Swedish proposal to ban the aerial delivery of anti-personnel mines as a point of departure, the discussions in the 1970s led to agreements on measures with governments and their military forces at the time considered acceptable and even desirable; those measures are contained in Protocol II to the Convention. Instead of the outright ban proposed by Sweden, however, Protocol II imposes safeguards which are full of loopholes, as outlined above. Its provisions for record-keeping, self-neutralizing devices and warnings to civilians are valuable, but they have been widely ignored in practice. The Convention applies formally only to international armed conflicts; and nothing has been done to extend the

application of the Convention and its Protocols beyond the minority of states which have hitherto decided to become party to them.<sup>21</sup>

Ten months before the adoption of the Convention, Soviet forces entered Afghanistan. In the war which followed, huge numbers of plastic PFM-1 anti-personnel mines modelled on the U.S. Dragontooth mine were dropped across the countryside from Soviet aircraft. As a major military power, the Soviet Union had taken part in the conferences in the 1970s and was fully aware of the contents of the 1980 Convention and its Protocols, which it ratified in 1982. Had the original Swedish proposal been adopted and observed, these mines would not have been sown. Today Afghanistan is considered the most heavily mined country in the world.<sup>22</sup>

It is understandable that military forces are inclined to resist the adoption of weapons bans: it is natural that they should want to have whatever means will help them to accomplish their missions, and that they should be reluctant to foreclose any options. But military considerations should not automatically prevail. States must not allow their long-term social needs to be outweighed by a short-term perception of military requirements, including such supposed requirements as the use of weapons for "psychological" purposes.<sup>23</sup> The phrase "military necessity"

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<sup>21</sup> As the ICRC noted in a working paper for the group of governmental experts preparing the review conference, "in many respects this Convention has not achieved its aim, not only because it has been insufficiently ratified or implemented, but also because in many ways it does not provide the means needed to prevent the excessive damage that is actually being caused in armed conflicts, the majority of which are non-international. In particular, the Convention relies too extensively on regulating behaviour in relation to the use of certain weapons, which is frequently difficult to enforce, rather than altogether prohibiting the use of certain types of weapons. Further, no parallel measures have been taken in the disarmament context, which are nevertheless proposed in the preamble of the Convention", *Report of the International Committee of the Red Cross for the Review Conference of the 1980 United Nations Convention...*, Geneva, ICRC, February 1994, p. 1.

A step in the direction of enhancing the universality of the Convention would be the adoption by consensus of a U.N. General Assembly resolution affirming that the provisions of the Convention and its Protocols are expressions of customary international law, and urging all combatants in both international and non-international armed conflicts to observe them

<sup>22</sup> *Landmines: A Deadly Legacy*, pp. 145, 298-299.

<sup>23</sup> During the 1991 Gulf war, a British army spokesman described the use of the MLRS against Iraqi artillery and said that the allies were attacking Iraq's "will to resist" as much as their weaponry (William Branigin, "Iraqi Losses 'Horrendous,' Official Says", *Washington Post*, 20 February 1991). After the war, a U.S. defence publication reported that according to captured Iraqi soldiers, a volley of bomblet-filled MLRS rockets directed against Iraqi artillery "shut down the operation" of the artillery, "partially because of the

should not be taken to imply that stated military needs must be accepted without question.

Now that the magnitude of the land-mine problems is being recognized and the need for costly and hazardous clearance operations and arduous rehabilitation programme is being faced, the world community is paying a heavy price for its failure to achieve stronger restrictions on the deployment of anti-personnel mines in 1980. This mistake must not be repeated. If further catastrophes are to be prevented, the world's governments should urgently adopt strong restrictions on cluster weapons and the other anti-personnel munitions mentioned at the beginning of this article.

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destruction it caused and partially because of its devastating psychological effects” (“‘Steel Rain’ Shut Down Iraqi Artillery”, *Armed Forces Journal International*, May 1991, p. 37). From a humanitarian perspective, it is doubtful that the inherent damage to civilian life posed by the deployment of a volley of 7,700 bomblets can be justified by the hope of frightening the enemy.