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Cluster Bombs in Afghanistan

Human Rights Watch Backgrounder

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The United States-led alliance began its air campaign in Afghanistan on October 7, 2001. While the Pentagon has been reluctant to talk of specific weapons used in the bombing, U.S. military sources have told Human Rights Watch that the Air Force began dropping cluster bombs within a matter of days. During the first week of the campaign, it is believed that Air Force B-1 bombers dropped 50 CBU-87 cluster bombs in some five missions. CBU-87 cluster bomb use has continued after the first week, and it is believed that other airplanes joined B-1s in dropping cluster bombs on both fixed and mobile targets.

Human Rights Watch has called for a global moratorium on use of cluster bombs because they have been shown to cause unacceptable civilian casualties both during and after conflict. Cluster bombs have a wide dispersal pattern and cannot be targeted precisely, making them especially dangerous when used near civilian areas. Cluster bombs are usually used in very large numbers and have a high initial failure rate which results in numerous explosive "duds" that pose the same post-conflict problem as antipersonnel landmines.

United Nations officials have stated that on October 22 U.S. cluster bomb submunitions landed on the village of Shaker Qala, near the city of Herat in western Afghanistan, killing nine civilians and injuring fourteen. The head of the United Nations Mine Action Program in Afghanistan (U.N. MAPA) noted that villagers are afraid to leave their homes after encountering the yellow soda can-like objects characteristic of CBU-87 submunitions that were left scattered in the village after an air strike on a nearby military camp. He called upon the United States to provide information on the types of ordnance dropped on Shaker Qala and elsewhere.

On October 25, the U.S. for the first time publicly acknowledged using cluster bombs. In response to a media question, Chairman of the Joint Chiefs of Staff General Richard Myers said, "Yes, we have used cluster bomb units.... There have not been a great number of them used, but they have been used."

Each CBU-87 cluster bomb contains 202 individual submunitions, also called "bomblets," designated BLU-97/B. The CBU-87s are formally known as Combined Effects Munitions (CEM) because each bomblet has an antitank and antipersonnel effect, as well as an incendiary capability. The bomblets from each CBU-87 are typically distributed over an area roughly 100 x 50 meters. They can be dropped from virtually any U.S. Air Force, Navy, and Marine Corps aircraft.

Recent experience in Kosovo, and before that in the Gulf War, has shown that the exact "footprint," or landing area, of the CBU-87's bomblets is difficult to control and that an initial failure-to-explode rate of some 7 percent can be expected.

When the bomblets contained inside cluster bombs fail to explode on contact as intended, they become in effect antipersonnel landmines-volatile and deadly remnants of war that can explode from a simple touch. They have proven to be a serious and long-lasting threat to civilians, soldiers, peacekeepers, and even clearance experts,

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because of the high initial failure rate of the bomblets, because of the large number typically dispersed over large areas, and because of the difficulty in precisely targeting the bomblets.

A key United Nations clearance expert has expressed concern about the similarity of the coloring of the yellow BLU-97/B cluster bomblets and the small yellow food aid parcels being airdropped in Afghanistan, noting that people are being encouraged to pick up the food parcels, but that picking up a bomblet would be lethal. He said, "Our experience in Kosovo showed us that children and youths were highly susceptible to the submunitions.... It is highly likely that many in Afghanistan will not know the difference between aerially delivered food aid and aerially delivered munitions." BBC Worldwide Monitoring reported that U.S. Psychological Operations units broadcast a radio message warning Afghan civilians of the similar yellow color of the cluster bomblets and the food packages, noting that cluster bombs will not be dropped in areas where food is air-dropped but stating, "[W]e do not wish to see an innocent civilian mistake the bombs for food bags and take it away believing that it might contain food."

It is noteworthy that during Operation Deliberate Force in Bosnia in 1995, air combat commander Major General Michael Ryan (later U.S. Air Force chief of staff) decided to prohibit the use of cluster bombs, in recognition of the inherent danger to civilians. "The problem was that the fragmentation pattern was too large to sufficiently limit collateral damage and there was also the further problem of potential unexploded ordnance," says one Air Force-sponsored study. During Operation Allied Force in Yugoslavia in 1999, the White House prohibited further use of CBU-87s until technical adjustments could be made, after a cluster bomb malfunction on May 7 killed many civilians.

Afghanistan is already one of the countries most severely affected by landmines and unexploded ordnance (UXO). Prior to October 7, 2001, the known contaminated area was estimated at 724 million square meters, including 344 million square meters classified as high priority land for clearance. From 1990 through 2000, more than 225,000 landmines and 1.3 million pieces of unexploded ordnance (including submunition duds) were detected and destroyed. The Taliban and the United Front (Northern Alliance) have used surface-delivered cluster munitions, fired from BM-21 122mm multiple rocket launchers.

According to information received by Human Rights Watch, the U.S. inventory alone contains more than one billion individual submunitions. The United States has more than forty different types of air and surface-delivered cluster bombs and submunitions. It is thought that at least eighteen nations produce cluster munitions and more than four dozen have stockpiles of the weapons.

What Are Cluster Bombs?

Modern cluster bombs are of two main types—those delivered by air and those delivered by surface artillery or rockets (including artillery projectiles and multiple rocket launchers). The bombs are designed to disperse submunitions (often called "grenades" in surface-delivered weapons and "bomblets" in air-delivered weapons) over a large area, thereby increasing the radius of destructive effect over a target. Typical targets for cluster bombs would include troop concentrations, airfields, and air defense units.

The large number delivered increases the density of explosives in the target area, with submunitions designed to strike every few feet or so. They saturate an area with explosives and tiny flying shards of steel. Depending on the type, bomblets can be dispersed to areas as large as the size of several football fields. An air attack typically disperses thousands of submunitions within a small space; a common target area for a single weapon under optimal conditions covers an area of roughly 100 x 50 meters.

Air-delivered cluster bombs are composed of a large dispenser with attached fins (called the tactical munitions dispenser, or TMD, in the newest systems); fuzes and electronic devices to control, spin, and direct the weapon during fall; and submunitions or bomblets. The bomblets themselves are of a variety of designs and shapes. Once released, cluster bomb units (CBUs) fall for a specified amount of time or distance before the dispenser opens and dispenses the submunitions, allowing them to cover a wide-area target. Depending on the type, the submunitions are activated by an internal fuze, and can detonate above ground, at impact, or in a delayed mode. Existing versions of submunitions do not incorporate self-destruct or self-deactivating mechanisms.

Modern air-delivered cluster bombs can be set to determine height of burst and the dispersal pattern. As

the aircraft drops the TMD, tail fins open and stabilize the bomb body. At the selected time or altitude, the dispenser begins to spin, the spin rate determining the dispersal pattern. As the bomblets fall and disperse, they arm in different ways depending on their design.

The CBU-87

The U.S. CBU-87 Combined Effects Munition is one of the newest standard air-delivered cluster bomb units (CBUs) in the U.S. arsenal. It has been in the U.S. Air Force inventory since 1986 (and in production since 1984), and has replaced aging and less effective Vietnam-era cluster bomb units and antitank mines. A myriad of delivery settings (high and low altitudes, extremely high speeds, and various toss modes) makes it a significant advance over older bombs. Combining light antiarmor capabilities with antipersonnel and incendiary effects, it was the first weapon in the U.S. inventory to include all three "kill mechanisms."

The 1,000-lb. class cluster bomb is compatible with virtually all current Western-produced tactical fighter aircraft, U.S. and foreign. The dispenser has been approved for use on the A-10, AV-8B, F-15, F-16, F/A-18, B-1, and B-52 aircraft. International aircraft currently certified for the CBU-87 include NATO F-16s, British Hawk and Harrier, French Mirage V, German Alpha Jet, Japanese F-1 and FX, and multinational Tornado and Jaguar. It is manufactured by Alliant Techsystems of Minnesota. The weapon contains 202 BLU-97B bomblets (officially called "combined effects bomblets," CEBs), which are seven inches long, with a two-and-a-half inch diameter and a weight of 3.41 pounds.

In contrast with earlier cluster bombs, the ground pattern size and shape of the bomblet dispersal can be determined in the CBU-87 by setting the spin rate of the dispenser and the height of burst. A single CBU-87 set at a low spin rate (e.g., 500 rpm) can disperse bomblets to an area 120 by 200 feet, with bomblets scattered an average of nine feet apart. A range of impact patterns from 70 by 70 feet to 150 by 450 feet can be achieved depending on altitude. In general, the bomblets cover an area of 800 by 400 feet, given medium- to high-altitude delivery.

As the CBU-87's soda can-sized bomblets fall, a "spider" cup is stripped off the body, releasing a spring which pushes out a nylon "parachute" (called the decelerator), which inflates and then stabilizes and arms the bomblet. The bomblets orient perpendicular to the ground for optimal top attack, and the descent is slowed to approximately 125 feet per second. On impact the primary firing mechanism detonates the bomblet. A secondary firing system is included to detonate if the bomblet impacts other than straight on, or if the bomblet lands in soft terrain or water.

The BLU-97's parachute-like decelerator, firing system, fuze, and downward-firing shaped charge are all packed in a steel case with a fire-starting (incendiary) zirconium ring. The case is the main part, made of scored steel designed to break into approximately 300 preformed thirty-grain fragments upon detonation of the internal explosive. The fragments then travel at extremely high velocities in all directions. This is the primary antipersonnel effect of the weapon. An explosively shaped charge (a formed molten copper jet slug) is the primary antiarmor effect. If the bomblet has been properly oriented, the downward-firing charge travels at 2,570 feet per second, able to penetrate most armored vehicles. The zirconium ring provides for fuel and other fires by spreading small incendiary fragments. The shaped charge has the ability to penetrate five inches of armor on contact. The tiny steel case fragments are also powerful enough to damage light armor and trucks at fifty feet, and to cause human injury at 500 feet. The incendiary ring can start fires in any combustible environment.

Use of CBU-87s and other Cluster Bombs in Kosovo

U.S., British and Dutch aircraft dropped more than 1,765 cluster bombs containing more than 295,000 cluster bomblets during the NATO air campaign in Yugoslavia from March to June 1999. During Operation Allied Force, the U.S. dropped about 1,100 CBU-87s (each containing 202 submunitions), the United Kingdom dropped about 500 RBL-755 cluster bombs (each containing 147 submunitions), and the Netherlands dropped 165 CBU-87s.

The U.N. Mine Action Coordination Center (MACC) reported that NATO provided the locations of 333 cluster bomb strike areas. On the basis of the clearance rate by March 2001 of unexploded cluster bomblets, the MACC estimated that around seven percent of the CBU-87's bomblets and eleven percent of the BL-755's failed to explode on impact. According to the MACC, more than 20,000 bomblets remained after the war, and the bomblets "are in a highly sensitive state, and can explode as a result of being moved or picked up. This volatile condition means that NATO-dropped CBU are a major part of the mine/UXO problem in Kosovo." In its June-

September 2000 quarterly report, MACC wrote, "During the previous quarter, it had been recognized that CBU were a major contributing factor to incidents involving civilians. In particular, CBU incidents generally involved groups of younger people, often with very tragic results."

The MACC has also noted, "The CBU problem is exacerbated by the fact that many bomblets have penetrated the ground and some have been found up to 50 centimeters below the surface. This means that CBU strike areas must be subjected to sub-surface clearance using detection equipment before the area can be declared free of UXO."

Human Rights Watch criticized NATO for use of cluster bombs in Kosovo, particularly in or near populated areas. Human Rights Watch believes there were nine to fourteen cluster bomb attacks resulting in civilian casualties during the conflict, causing an estimated ninety to 150 civilian deaths, or 18 to 30 percent of all civilian deaths, even though cluster bombs represented just 6 percent of weapons expended in the air war. A NATO air strike involving cluster bombs on an airfield in Nis on May 7 went off target, hitting a hospital complex and adjoining civilian areas. On April 24, five boys were reported to have been killed and two injured when what was evidently a cluster bomb submunition exploded near the village of Daganovic.

The civilian toll due to cluster bombs was even greater following the end of the conflict. According to the International Committee of the Red Cross, from June 1999 through May 2000, there were at least 151 casualties due to cluster bomblets, including fifty dead and 101 injured. The ICRC notes that the actual number of CBU casualties is likely higher because there were 108 incidents in which the cause of injury was unknown. The MACC has reported that in the year 2000, there were twenty-four CBU casualties, and that as of late October 2001, successful clearance operations resulted in just one cluster bomb incident since August 2000.

Use of Cluster Bombs in the Gulf War

More than 1,600 Kuwaiti and Iraqi civilians have been killed, and another 2,500 injured, by the estimated 1.2 million explosive cluster bomb duds left following the 1991 Persian Gulf War, which saw the most extensive use of cluster bombs in history. Some 62,000 air-delivered cluster bombs, 100,000 DPICM artillery shells, and 10,000 MLRS rockets were used, containing a total of 24 to 30 million submunitions.

The United States has continued to use cluster bombs in Iraq. While great press attention was paid to President George W. Bush's decision to bomb Iraqi targets on February 16, 2001, there was scant recognition that some U.S. jets used cluster bombs, those formally known as the Joint Stand-Off Weapon (JSOW). JSOW was first used in combat in Iraq on January 25, 1999. The 1,000 pound, fourteen-foot-long weapon carries 145 anti-armor and antipersonnel incendiary bomblets that disperse over an area that is approximately 100 feet long and 200 feet wide.

Department of Defense Justifications

The Pentagon primarily justifies use of cluster bombs based on the perceived effectiveness of the weapon. In fact, the utility, reliability, and effectiveness of different types of cluster bombs and submunitions varies tremendously. But the Pentagon has also offered up rebuttals to some of the other criticisms that have been made regarding cluster bombs.

Initial Failure Rates - The Department of Defense will sometimes claim that the initial failure rate of most cluster munitions is not much different from other munitions, such as gravity bombs, mortar rounds, or artillery shells. Human Rights Watch is unaware of a serious or comprehensive study of this matter. Regardless, however, the initial failure rate of cluster munitions, whether equal to or greater than other munitions, is a special problem because of the large number of submunitions used, and their particular volatility. When each bomb contains hundreds of bomblets, and hundreds of thousands of bomblets are used in a campaign (as in Kosovo) or even millions of bomblets (as in the Gulf War), even a small initial failure rate can quickly translate into a major humanitarian problem.

Moreover, the current initial failure rate for even advanced U.S. cluster munitions, like the CBU-87, is clearly far too high to be acceptable. Estimates of the initial failure rate range from 2 percent to 30 percent or more, depending on conditions. The best data on this has been gathered in Kosovo, where, as noted above, U.N. clearance experts estimate a 7 percent initial failure rate for the CBU-87 bomblets.

While not saying so directly, the U.S. military has acknowledged that the initial failure rate on cluster bombs is too high. On January 10, 2001, then-U.S. Secretary of Defense William Cohen issued a memorandum stating:

It is the policy of the DoD [Department of Defense] to reduce overall UXO [unexploded ordnance] through a process of improvement in submunition system reliability - the desire is to field future submunitions with a 99% or higher functioning rate. Submunition functioning rates may be lower under operational conditions due to environmental factors such as terrain and weather....

The Services may retain "legacy" submunitions until employed or superseded by replacement systems in accordance with the above policy. The designation "legacy" would apply to submunition weapon acquisition programs reaching Milestone III prior to the First Quarter of Fiscal Year 2005.

The Services shall evaluate "legacy" submunition weapons undergoing reprocurement, product improvement, or block upgrades to determine whether modifications should be made to bring them into compliance with the above policy.

The Services shall design and procure all future submunition weapons in compliance with the above policy. A "future" submunition weapon is one that will reach Milestone III in FY 2005 and beyond.

[Secretary of Defense William Cohen, Memorandum for the Secretaries of the Military Departments, Subject: DoD Policy on Submunition Reliability (U), January 10, 2001]

The volatility of cluster bomb duds also makes them more dangerous than many other types of unexploded ordnance. Again, Human Rights Watch is not aware of specific studies comparing UXO volatility, but the testimony of clearance personnel, such as that cited above regarding Kosovo, gives an indication of the special dangers posed by cluster bomblets.

CBUs vs. Other Weapons - Department of Defense and other U.S. officials will sometimes claim that cluster bombs pose less danger to civilians than alternative weapons that might be used, noting for example that the explosive power of unitary munitions (such as bombs and artillery shells) could cause far more collateral damage. However, this argument ignores the documented inability to ensure cluster bomblets stay within the confines of the intended target area, and does not take into account the ever-greater precision (and smaller warheads) of unitary munitions, which results in less and less civilian impact.

Cluster Bombs and Landmines

While cluster bomblet duds undeniably function like antipersonnel mines, they are not covered under the 1997 Convention on the Prohibition of the Use, Stockpiling, Production, and Transfer of Anti-Personnel Landmines and on their Destruction, also known as the Mine Ban Treaty, which entered into force on March 1, 1999. There are 122 States Parties and an additional 20 signatories. The United Kingdom is a State Party; the United States has not signed.

The treaty defines antipersonnel mine as a munition "designed to be exploded by the presence, proximity or contact of a person...." That is, the mine must be designed to be victim-activated. Cluster bombs are not designed to be victim-activated; they become so when they fail to function as designed. In this way, cluster bombs are not different than other types of unexploded ordnance (failed mortar rounds, artillery shells, grenades, etc.), none of which are covered by the Mine Ban Treaty.

The indiscriminate dangers posed to civilians by explosive cluster bomb duds, however, are essentially no different than antipersonnel mines. They will in most cases explode upon contact, whether being picked up or kicked or otherwise touched. One difference is that antipersonnel mines are generally designed more to maim than to kill, with a relatively small amount of explosive, while cluster bomblets (at least in the case of CBU-87s) are more likely to kill their victims. As noted above, experience in Kosovo has also shown that cluster bombs can pose special problems and dangers for the clearance professionals as well.

Explosive Remnants of War and the Convention on Conventional Weapons

One avenue for attempting to deal with the humanitarian problems associated with use of cluster bombs is 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, also known as the Convention on Conventional Weapons (CCW). The CCW has four Protocols (and one amended protocol) that contain restrictions on the use of landmines, blinding lasers, incendiary weapons, and weapons causing injury by non-

detectable fragments. The U.S. is a party to the CCW and all of its protocols.

The second review conference of the CCW will be held in Geneva in December 2001, and a series of preparatory meetings have been held during the past year. Governments have had extensive discussions on what is being called the "Explosive Remnants of War" issue, growing out of an initiative by the International Committee of the Red Cross. The initiative began largely in response to the increased sensitivity of the international community to the use of cluster bombs. It is aimed at reducing the number of explosive remnants of war (whether caused by cluster bombs or other weapons) and establishing responsibility for clearing the detritus of war. Different governments are embracing the issue with widely varying degrees of enthusiasm, but it appears that a likely outcome of the December review conference will be the establishment of a working group with a mandate to do further work on the issue.

Recommendations

The United States and all other combatants should immediately halt the use of cluster bombs in Afghanistan. At a minimum, cluster bombs should not be used in or near populated areas.

The U.S. and others should in a timely manner provide relevant information regarding types and locations of ordnance used to appropriate clearance organizations, as requested by United Nations officials.

There should be a global moratorium on use of cluster bombs until effective measures can be put in place to lessen their impact on civilian populations. Governments should examine possible technical solutions, as well as options related to use and targeting; they should research and analyze past use of cluster bombs, including military usefulness, civilian impact, safety and overall effects; and, they should conduct a legal review of cluster bombs and their consistency with international humanitarian law.

Governments should urgently address the cluster bomb problem as part of the review process of the Convention on Conventional Weapons. At the December 2001 CCW Review Conference, an expert group should be formed to look at the Explosive Remnants of War issue, with a focus on problems caused by cluster bombs and submunitions. The group's mandate should be broad, and allow for consideration not just of technical factors, but also those related to use and targeting. The group should aim to conclude its work in no more than one year. This work should pave the way for immediate negotiations aimed at a new protocol to the CCW to be concluded in a similar period of time.

Human Rights Watch believes that any long-term approach to ameliorating the negative humanitarian impact of cluster bombs must include the following:

- Reduction of the initial failure rate of cluster bombs to a tolerable level from a humanitarian perspective. That level should be determined by humanitarian and military experts, but should certainly be less than 1 percent.
- A prohibition on use in or near populated or urban areas.
- A requirement for accurate recording and mapping of cluster bomb use to assist in post-conflict clearance and awareness efforts.
- Post-use requirements such as marking, warnings to civilians, clearance, and timely sharing of relevant information with appropriate clearance and awareness organizations.

In examining possible solutions to the cluster bomb problem, there needs to be:

- A realistic assessment of the initial failure rate of existing cluster bombs, and a determination of whether cluster bombs have a higher initial failure rate than other weapons that become unexploded ordnance, and whether unexploded cluster bomblets are more volatile or dangerous than other UXO.
- An examination of options to improve the reliability and safety of cluster bombs, and of the factors that

affect cluster bomb reliability and safety (including fuzes and secondary fuzes, number of bomblets, area coverage, dispersal pattern, method and circumstances of delivery, special features like incendiary rings, characteristics of the target area, age and design).

- An assessment of the feasibility and effectiveness of putting self-destruct, self-neutralizing and/or self-deactivating mechanisms on all cluster bombs, both new production and existing stocks.
- An assessment of the feasibility and effectiveness of various other potential restrictions on use aimed at avoiding collateral damage, including target limitations and high-altitude delivery.