

Cluster Munitions Warfare in Afghanistan:
The Public Health Implications of Operation Enduring Freedom

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Abstract

What are the long-term effects of modern warfare on public health? In 2001 U.S. Air Force B-1 bombers dropped CBU-87 cluster bomb units on Afghanistan. Intended for terrorist targets, these weapons failed to discriminate. In addition to reaching intended targets, they also rained down upon the civilian population. The full extent of public health implications remains undefined. Although the international community came together to ban the use of cluster munitions in 2008, the United States Department of Defense maintains that cluster munitions pose an insignificant risk to civilians and remain a legitimate and vitally important weapon of war.

Introduction

Cluster munitions are air delivered warheads, or dispensers, that release submunitions. Designed to detonate upon impact, submunitions are alleged to provide a tactical advantage through their wide-dispersal capabilities. Technically, cluster submunitions are not engineered to be landmines, but, when they fail to detonate, they pose the same risks to civilians as other unexploded ordnance, including landmines.¹ Landmines have been used, albeit in rudimentary terms, since the American Civil War. Cluster munitions warfare, however, first saw wide-range use during the Vietnam War.² In October of 2001, United States Air Force B-1 bombers dropped CBU-87 cluster bomb units throughout Afghanistan, enabling the infiltration of U.S. - led coalition forces into hostile areas and simultaneously launching Operation Enduring Freedom. The intent of the operation was to reduce terrorist threats to the United States following the attacks on September 11, 2001.

Conflict is not new to Afghanistan. Civil war and foreign occupation have devastated the country since 1978. By 2001 the Taliban, an extremist Islamic organization, controlled a significant portion of Afghan national territory. Conflict, nonetheless, remained in the northern and eastern regions. The start of Operation Enduring Freedom encompassed two parallel actions: a ground war between the Taliban and a Northern Alliance supported by U.S. - led coalition troops and an aerial war against the Taliban that utilized cluster munitions.³ Despite the availability of advanced precision weapons, cluster munitions were the weapon of choice.

¹ Rae McGrath, *Landmines and Unexploded Ordnance: A Resource Book* (London: Pluto Press, 2000), 1.

² *Ibid.*, 21-22.

While technology continues to produce lethal weapons, science has advanced public health in every aspect imaginable. Robotic-assisted surgery is utilized in cancer treatment; pharmacological compounds treat complex morbidities; and vaccines prevent epidemical outbreaks. While advancements in science have dramatically decreased premature death, alternative applications have perfected modern warfare. High tech weapons provide limitless means to kill and maim. Whether conflict is remotely controlled or face-to-face, war continues to affect the health and safety of civilian populations.⁴

On October 7, 2001, U.S. Secretary of Defense Donald H. Rumsfeld, via a Department of Defense news release, announced the initial execution of Operation Enduring Freedom. As described in the release, the operation's objective was to "create conditions for sustained anti-terrorist and humanitarian relief operations in Afghanistan."⁵ Afghanistan was believed to be the base of Al-Qaeda, the terrorist organization responsible for the September 11, 2001 terrorist attacks against the United States. While there is much debate as to whether or not this objective has been met, there remains a much larger issue to address. Operation Enduring Freedom primary entailed urban warfare, by which civilians became unintended targets or indirect victims of conflict. In the case of Operation Enduring Freedom, much like the civilian

³ Aldo A. Benini and Lawrence H. Moulton, "Civilian Victims in an Asymmetrical Conflict: Operation Enduring Freedom, Afghanistan," *Journal of Peace Research* 41, no. 4 (2004): 403-422.

⁴ William H. Foegen, "Arms and Public Health: A Global Perspective," in *War and Public Health*, edited by Barry S. Levy and Victor W. Sidel (Washington, DC: Oxford University Press, 1997), 3.

⁵ U.S. Department of Defense, Office of the Assistant Secretary of Defense (Public Affairs), *Statement of the Secretary of Defense*, by Donald H. Rumsfeld, News Release No. 491-01, Washington, DC: Government Printing Office, October 7, 2001.

populations victimized by the Vietnam War, civilians continue to be affected post-conflict: unexploded remnants of war continue to plague their daily lives.

Although the use of cluster munitions during Operation Enduring Freedom was not publically acknowledged by U.S. officials until October 25, 2001, Human Rights Watch, one of the world's leading human rights organizations, reported that military sources confirmed their use during the first days of the operation – in which Air Force B-1 bombers dropped fifty CBU-87 cluster bombs over five sorties. Each CBU-87 contains 202 individual submunitions capable of covering approximately 5,000 square meters. The initial campaign potentially blanketed some ten square miles. The CBU-87s, formally known as Combined Effects Munitions, have an anti-tank and anti-personnel effect in addition to incendiary capabilities.⁶

Concurrently the British Broadcasting Company (BBC) reported on October 28, 2001, that United States Psychological Operations (Psy-ops) radio had begun broadcasting a public service announcement to Afghan civilians warning them not to “confuse the cylinder-shaped bomb with the rectangular food bag” as both happened to be the same color: yellow.⁷ In a November 16, 2001 press release, Human Rights Watch reported that the U.S. Department of Defense had indeed recognized the tragic implications of confusing these two objects and announced that the color of the food packages would be changed. Yet, Human Rights Watch, while acknowledging the proposed change, stressed that simply changing the color of the food

⁶ Human Rights Watch, “Cluster Bombs in Afghanistan,” Human Rights Watch Backgrounder, October 2001, <http://www.hrw.org/legacy/backgrounder/arms/cluster-bck1031.htm> (accessed on February 16, 2009).

⁷ British Broadcasting Company (BBC), “Radio Warns Afghans over Food Parcels,” Media Reports, October 28, 2001, http://news.bbc.co.uk/2/hi/world/monitoring/media_reports/1624787.stm (accessed on January 20, 2009).

packets, as the Department of Defense stated they would do, would not resolve the ongoing threats that unexploded ordnance poses to non-combatant populations.⁸

Lasting Repercussions

In order to classify the long-term repercussions of unexploded ordnance, it is necessary to address the validity of cluster munitions by examining two parallel indicators: legitimacy and civilian impact. The U.S. Department of Defense determines the legitimacy of a weapon by weighing military gain against human suffering.⁹ In other words, in order to be considered unlawful, the suffering inflicted by a weapon must outweigh the legitimate military gain achieved by its use. This official determination presents two questions for examination: Is suffering quantifiable? What constitutes legitimate use?

Is Suffering Quantifiable?

In an attempt to quantify civilian suffering, clinical studies will serve as a basis to depict the indirect and long-term consequences of war on public health. The first study reports injuries and death from landmines and unexploded ordnance in Afghanistan from March 2001 through June 2002, while the second study examines trends of injuries and death from January 2002 through December 2006. Alternately, the psychological impact of war will be considered by examining mental health data. While these studies do not necessarily address cluster munitions independently from other remnants of war, they depict quantifiable evidence of suffering. In

⁸ Human Rights Watch, "Cluster Bomblets Litter Afghanistan," November 15, 2001, <http://www.hrw.org/en/news/2001/11/15/cluster-bomblets-litter-afghanistan> (accessed on January 20, 2009).

⁹ Thomas J. Herthel, "On the Chopping Block: Cluster Munitions and the Law of War," *The Air Force Law Review* 51 (2001): 258, <http://library2.csumb.edu:2062/ehost/pdf?vid=3&hid=22&sid=ebbf3f3c-804d-4758-986c-3f561bc5b560%40sessionmgr2> (accessed on February 2, 2009).

addition to presenting a quantitative depiction, qualitative analysis will address the state of Afghanistan's public health infrastructure, as a means to describe completely the country's inability to respond to the health care needs of its citizens.

In 2003 the *Journal of the American Medical Association* reported on surveillance data collected by the International Committee of the Red Cross (ICRC) in 390 health facilities throughout Afghanistan.¹⁰ Oleg O. Bilukha, M.D., PhD, Muireann Brennan, M.D., MPH, and Bradley A Woodruff, M.D., MPH, of the Centers for Disease Control and Prevention (CDC), analyzed data collected between March 2001 and June 2002 in order to understand the epidemiological patterns and risk factors associated with landmines and unexploded ordnance. Of the 905 health facilities the ICRC estimates to be functioning in Afghanistan, the study incorporates data from the 390 facilities the ICRC identified as most likely to see injuries.

It is important to keep in mind, however, that health facilities can only accurately report on individuals who present for care, and that many deaths and injuries go unreported for a variety of reasons, which may include lack of transportation, non-access to a health facility, or financial barriers. Additionally, individuals who die from their injuries prior to reaching a health facility are also unlikely to be reported. Analysis is based upon 1,636 acutely injured individuals, but does not address long-term physical disability or mental health concerns. Of those injured, 81 percent were civilians, 91.6 percent were men *and* boys, and 45.9 percent were under the age of sixteen.

¹⁰ Oleg O. Bilukha, Muireann Brennan, and Bradley A. Woodruff, "Death and Injury from Landmines and Unexploded Ordnance in Afghanistan," *Journal of the American Medical Association*, no. 290 (August 2003): 650-653.

Children, rather than adults, were most likely to be injured by unexploded ordnance, including grenades, bombs, mortar shells, and cluster munitions. Among children, 49 percent were injured either playing or tending animals. The similarity between undetonated cluster munitions and air-dropped food packages posed a specific concern, as children were more likely to confuse the two.¹¹ Among the conclusions generated from the data, it was determined that an increase in injuries resulting from cluster munitions began in October of 2001, but the study does note that data collection was disrupted before and during coalition strikes.

In a second study, reported in the *Journal of the American Medical Association* in 2007, Bilukha, Brennan, and Mark Anderson, M.D., MPH, of the Centers for Disease Control and Prevention, analyzed data collected from the ICRC between January 2002 and December 2006.¹² The data was collected from 490 health facilities and from volunteers in a community-based first aid program supported by the Afghan Red Crescent Society. Of the 5,471 individuals injured or killed, similar to the previous study, approximately 91 percent were male, of which 47.2 percent were children under eighteen years of age. Of those injured, 17 percent, or 930, died as a result of their injuries. The majority of children, 65.4 percent, suffered injuries as a result of unexploded ordnance. Overall, the proportion of injuries resulting from unexploded ordnance increased from 48.4 percent in 2002 to 58.8 percent in 2006. According to the study, these totals account for 70.6 percent of all injuries in children and 41.9 percent in adults in 2006.

¹¹ Ibid., 650-653.

¹² Oleg O. Bilukha, Muireann Brennan and Mark Anderson, "Death and Injury from Landmines and Unexploded Ordnance in Afghanistan, 2002-2006," *Journal of the American Medical Association* 298, no. 5 (August 1, 2007): 516-518.

While taking into account their limitations, these two studies indicate the prevalence of injuries on communities directly affected by conflict. Unexploded ordnance continues to impede the daily lives of civilians five years after the initial coalition strikes. Yet, absent from these two studies is the inclusion of mental health data, which when viewed in conjunction with physical injuries, depict the psychological impact of war. According to Afghanistan's first national Human Development Report, February 21, 2005, the World Health Organization estimated that 95 percent of Afghanistan's population has been affected psychologically as a result of war. One in five individuals suffers some type of mental health condition, including anxiety, depression, insomnia, and post-traumatic stress disorder, yet mental health services remain desperately lacking from the current health care system.¹³

Willem Scholte, M.D., of the Academic Medical Center, Department of Psychiatry, University of Amsterdam, examined, in coordination with fellow colleagues, mental health conditions among ethnic Pashtuns residing in Afghanistan's eastern province of Nangarhar during January and March 2003.¹⁴ Their objective was to determine the rate of exposure to traumatic events within a ten year time period and assess present coverage of basic health needs. Their findings suggest that mental health symptoms are present in the local population and should therefore be addressed at the primary care level. Of the 1,011 survey respondents, age fifteen and older, 43.7 percent had experienced between eight and ten traumatic events within the preceding ten years. Basic medical care was deemed insufficient; 22.6 percent of

¹³ United Nations Development Program, *Security with a Human Face – Challenges and Responsibilities*, Afghanistan National Human Development Report, 2004: 60, http://www.cphd.af/nhdr/nhdr04/download/pdfs/eng/nhdr_04_complete.pdf (accessed on March 29, 2009).

¹⁴ Willem F. Scholte, "Mental Health Symptoms Following War and Repression in Eastern Afghanistan," *Journal of the American Medical Association* 292, no. 5 (2004): 585-593.

those surveyed indicated that access was indeed a problem. High rates of depression were reported by 38.5 percent of the participants, and included symptoms of anxiety and post-traumatic stress disorder.

Afghanistan's public health infrastructure indicates an ill-functioning and highly understaffed system that relies, in part, on services implemented and administered by the ICRC. It is therefore necessary to illustrate, in a limited scope, some of the health care challenges Afghanistan faces in order to provide a contextual framework with which to understand the burden explosive remnants of war place on an already insufficient system. As trained medical professionals provide the backbone to any normal functioning health care system, the absence of physicians in Afghanistan no doubt hinders the country's progress.

Afghanistan's National Human Development Report indicated that in 2004 only 210 facilities are equipped with beds to hospitalize patients, which equals 0.32 beds per 1,000 people. An even greater disparity exists when accounting for location, as existing infrastructure favors urban areas and does not address the needs of 75 percent of Afghanistan's rural population.¹⁵ In comparison, the United States averaged 3.2 beds per 1,000 people in 2006.¹⁶ In 2005, *The Lancet*, the world's leading general medical journal, reported that logistical concerns hamper the return of expatriate health professionals, many of whom reside in the United States. Those that have returned continue to face financial roadblocks. Although they self-fund pharmaceuticals and the medical supplies necessary for treatment, these physicians'

¹⁵ United Nations Development Program, *Security with a Human Face*, 63.

¹⁶ RAND Corporation, "U.S. Health Care Today: Current Situation for Capacity," 2009, <http://www.randcompare.org/current/dimension/capacity> (accessed April 19, 2009).

salaries go unpaid, *The Lancet* reported. Continued training poses a parallel challenge, as returning physicians found the medical school at Kabul University destroyed.¹⁷

Afghanistan's Ministry of Public Health, unequipped to handle the continued care of individuals injured by landmines and other remnants of war, relies on the Ali Abad Orthopedic Center in Kabul, a rehabilitation facility operated by the ICRC. In addition to physiotherapy, which treats disease through physical exercise and massage, the center manufactures custom-made prostheses and durable medical equipment that includes leg braces, crutches, and wheelchairs. The Kabul center is one of six International Committee of the Red Cross orthopedic centers in Afghanistan, which, for the last two decades, have provided disabled Afghans with orthopedic care.¹⁸ It is dramatically evident that the toll on public health during this conflict is significant and quantifiable.

What Constitutes Legitimate Use?

The basis for legitimacy rests on detonation standards and strategic scrutiny. In order to adequately determine legitimacy, recognition has foremost been placed on military strategy. According to Air Force Major Thomas J. Herthel, cluster munitions provide an effective delivery method for operations requiring wide-dispersal and are no different from other fragmentation weapons that are designed to inflict damage.¹⁹ In order to understand the full extent of their use, it is necessary to define the tactical advantage they serve. In June 2008, U.S. Secretary of

¹⁷ Nellie Bristol, "Reconstructing Afghanistan's Health System," *The Lancet* 366 (December 17, 2005): 2075-2076.

¹⁸ International Committee of the Red Cross, "Afghan Mine Victims Brave the Odds," <http://www.icrc.org/web/eng/siteeng0.nsf/htmlall/afghanistan-feature-121107> (accessed on February 8, 2009).

¹⁹ Herthel, "On the Chopping Block."

Defense Robert M. Gates noted that cluster munitions are used to engage targets that include “massed formations of enemy forces, individual targets dispersed over a defined area, targets whose precise locations are unknown, and time-sensitive or moving targets.”²⁰ While these tactics may have been well suited to pre-Cold War conflicts, they do not translate well to modern warfare. Secretary Gates’ memorandum merely evokes blanket policy in order to legitimize the use of an unreliable and ineffective weapon. It is unfathomable that the U.S. Air Force, that can remotely operate unmanned planes in Afghanistan from a computer console in Arizona, continues to insist that cluster munitions are a reliable method of targeting enemies whose locations are unknown.²¹

While the Defense Department insists that there remains an operational need for such a weapon, it is necessary to examine and validate the weapon’s effectiveness. The Defense Department claims that cluster munitions serve, in certain circumstances, as an effective weapon. In their absence, unitary bombs may inflict more direct damage and result in greater initial civilian casualties. To illustrate this rationale, James F. Lawrence, director of the Office of Weapons Removal and Abatement of the State Department, uses the example of a simple antenna. A roof antenna, he contends, could effectively be taken out by a cluster bomb without destroying the entire building.²² Perhaps a *single* cluster submunition would prove to be more

²⁰ U.S. Department of Defense., Secretary of Defense, *DoD Policy on Cluster Munitions and Unintended Harm to Civilians*, by Robert M. Gates, Memorandum for Secretaries of the Military Departments, OSD 76224-08, Washington, DC: Government Printing Office, June 19, 2008.

²¹ Christopher Drew, “Drones Are Weapons of Choice in Fighting Qaeda,” *New York Times*, March 17, 2009, <http://www.nytimes.com/2009/03/17/business/17uav.html> (accessed March 31, 2009).

²² Walter Gibbs and Kirk Semple, “Afghanistan Agrees to Sign Bomb Treaty,” *New York Times*, Late Edition, December 14, 2008, http://www.nytimes.com/2008/12/04/world/04cluster.html?_r=1&scp=1&sq=Afghanistan%20Agrees%20to%20sign%20bomb%20treaty&st=cse (accessed on February 10, 2009).

effective than a unitary bomb in removing a roof antenna. It is important, however, not to discount the damage inflicted by the additional 201 submunitions that are released simultaneously. What are the direct and indirect costs of removing that single antenna? Of those 202 submunitions, how many failed to detonate? Can the success of removing a single antenna be justified at the expense of an entire neighborhood, which would no doubt suffer human and structural casualties?

Detonation Standards

Even when properly deployed, ammunition rarely performs at the success rate that is calculated during controlled testing. Ammunition trials often depict an inaccurate accounting of how munitions will perform in the field.²³ To place detonation standards in a historical context it is necessary to examine, in a limited scope, the use of cluster munitions during the Vietnam and Persian Gulf Wars. On March 3, 1966, an ammunition test was conducted at Nellis Air Force Base in Nevada. It provides incredible insight into documented failure rates:

In a controlled situation a F-4c released the bomb [a CBU-24/B containing BLU-26 bomblets] in a 45-degree dive at an altitude of 5,500 feet with a 5-second fuse set to function the release of the bomblets at an altitude of 1,908 feet; 663 bomblets were spread over an impact area measuring 900 x 400 feet -173 of them failed to explode. A failure rate of more than 26 percent.²⁴

This test was conducted under controlled conditions on U.S. soil; battlefield conditions certainly impact the operational ability of cluster munitions to an even greater negative extent. Despite

²³ Colin King, "Testing Times: Unrealistic Reliability Trials Disguise Cluster Munitions Failure Rates," *Jane's International Defense Review*, April 15, 2008.

²⁴ McGrath, *Landmines and Unexploded Ordnance*, 23. The F-4C is a McDonnell Douglas F-4 Phantom II, which is a two-seat, twin-engine, all-weather, long-range supersonic fighter-bomber.

technical advancements that undoubtedly occurred between 1966 and 1991, a 2002 report by the United States General Accounting Office (GAO) illustrates the documented failures of submunitions during the Persian Gulf War:

An explosive ordnance disposal commander estimated that an area occupied by the 24th Infantry Division during the war experienced at least a 15- to 20-percent dud rate for some Army submunitions....“an unknown amount was covered by sand suggesting an even higher rate.”²⁵

Air Force submunitions were estimated to have a 40 percent dud rate in one area, in which explosive ordnance disposal personnel concurred that sand hindered their detonation capabilities. Controlled testing in 1990 further implicates the extent of failure of Defense Department methods. The test identified two lots of artillery-delivered non-landmine submunitions that had duds in excess of 40 percent. Testing documentation, by the GAO, indicated that “one way to compensate for this high dud rate is to increase the quantity fired” with instructions to “make adjustments in the tactical employment plans.”²⁶

Despite documented failure rates during the Persian Gulf War, in which detonation rates were exacerbated by sandy conditions, the Defense Department chose to use cluster munitions in Afghanistan – a country composed of desert and mountainous terrain. In 2003 the journal *Military Medicine* reported that nine cluster bomb sites were assessed in Afghanistan’s Shomali Valley after Operation Enduring Freedom. The assessment concluded that submunitions

²⁵ U.S. General Accountability Office, *Military Operations Information on U.S. Use of Land Mines in the Persian Gulf War*, Report to the Honorable Lane Evans, House of Representatives, GAO-02-1003, Washington, DC: Government Printing Office, September 2002: 31.

²⁶ Ibid.

experienced a 17.4 percent failure rate, as 317 of the 1,818 cluster submunitions deployed had failed to explode. Of these 317, 33.7 percent had become buried in the ground.²⁷

Controlled testing, illustrated by these examples, is not a reliable means upon which to base safety standards, as ammunition trials cannot adequately predict field conditions. The Defense Science Board, a federal advisory committee commissioned by the U.S. Department of Defense, concurred in September 2005 when it reported that surveillance testing - normally conducted under ideal conditions - results in "an incomplete statistical image of a given munition's reliability."²⁸ Deployment in controlled and battlefield conditions both generate variable results which in turn produce inadequate predictability standards. Although controlled testing rates have significantly improved since 1966 - documented in 2004 to be between 1 and 6 percent - failure rates outside of controlled testing environments continue to be documented at between 15 and 20 percent.²⁹ Yet, according to the Defense Science Board's study, there is no comprehensive approach "to determine and document operational combat failure rates of US munitions," as the available data is "inconsistent, largely anecdotal, and often from questionable sources."³⁰

²⁷ Steve Mannion and Eddie Chaloner, "Potential Health Hazards of Cluster Bombing in Shomali Valley, Afghanistan in October-November 2001," *Military Medicine* 168, no. 9 (September 2003): 756-757.

²⁸ U.S. Department of Defense, Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, *Defense Science Board Task Force on Munitions System Reliability*, by the Defense Science Board a Federal Advisory Committee, Washington, DC: Government Printing Office, September 2005: 17.

²⁹ Doug Tuttle, "US Cluster Munitions Policy: The Policy Looks Good on Paper, but More Action is Needed from the US to Rid the World of Cluster Munitions," *Center for Defense Information*, February 25, 2008, <http://www.isn.ethz.ch/isn/Current-Affairs/Security-Watch/Detail/?ots591=4888CAA0-B3DB-1461-98B9-E20E7B9C13D4&lng=en&id=54158> (accessed February 10, 2009).

³⁰ U.S. Department of Defense, *Defense Science Board Task Force*, 17.

Department of Defense Policy

On December 3, 2008 ninety-four countries, including Afghanistan, signed the Convention on Cluster Munitions treaty that bars signatories from using, producing, selling or stockpiling cluster munitions.³¹ Defense Department documents provide contextual evidence of the evolution of U.S. policy that supports continued legitimacy of cluster munitions use and non-signage of the treaty. In light of the ban on cluster munitions proposed during the Oslo Process in Dublin, Ireland in June of 2008, the Department of Defense released what they contended to be a viable alternative.³²

To reinforce the legitimacy of their use, Gates emphasized their distinct advantages and stressed that “cluster munitions are an integral part of U.S. forces capabilities” of which the loss would “require an increase in other resources.”³³ The DoD’s viable alternative to the treaty, therefore, is the adoption of policy to take effect in 2018, in which military departments and combat commands will only deploy cluster submunitions that maintain a 99 percent detonation rate. While a 1 percent failure rate is an ambitious standard to maintain, there are no feasible means by which to ensure that a 1 percent failure rate in a controlled environment will result in an equivalent standard during unpredictable and inconsistent battlefield conditions. Nor is there a practical way to accurately document unexploded ordnance once it has been deployed.

³¹ Walter Gibbs and Kirk Semple, “Afghanistan Agrees to Sign Bomb Treaty,” *New York Times*, Late Edition, December 14, 2008, http://www.nytimes.com/2008/12/04/world/04cluster.html?_r=1&scp=1&sq=Afghanistan%20Agrees%20to%20sign%20bomb%20treaty&st=cse (accessed on February 10, 2009).

³² U.S. Department of Defense, Office of the Assistant Secretary of Defense (Public Affairs), *Cluster Munitions Policy Released*, News Release No. 577-08 (Washington, DC: Government Printing Office, July 9, 2008).

³³ U.S. Department of Defense, *DoD Policy on Cluster Munitions*.

Earlier in 2008, the Department of State, in a White Paper issued by the Bureau of Political-Military affairs, contended that cluster munitions, when compared to other explosive remnants of war, only “constitute a small portion of the total humanitarian threat presented by unexploded aerial bombs, unexploded artillery shells, and other conventional unexploded munitions.” While the State Department discredits the humanitarian impact of cluster munitions and candidly states that the “long-term impacts of other munitions have been ignored or under reported” as a result of their publicity, it emphasizes that the United States continues to assist Afghanistan in clearing *all* explosive remnants of war.³⁴

The State Department’s Office of Weapons Removal and Abatement shares this view. In June 2007 Director Richard Kidd stated that, although cluster munitions are considered a post-conflict threat, the threat is “episodic, [and] manageable within current response mechanisms.”³⁵ Furthermore, Katherine Baker, a member of the U.S. delegation to the Convention on Certain Conventional Weapons - Group of Governmental Experts, stated in January 2008 that explosive remnants of war, including those from unexploded cluster munitions, are fully covered under Protocol V of the Convention on Certain Conventional Weapons.³⁶ In doing so, Baker reinforces the Defense Department’s position that additional provisions, focused solely on one type of war remnant, are unnecessary. Protocol V addresses

³⁴ U.S. Department of State, Bureau of Political-Military Affairs, *White Paper: Putting the Impact of Cluster Munitions in Context with the Effects of All Explosive Remnants of War*, Washington, DC: February 15, 2008, archive online, <http://2001-2009.state.gov/t/pm/rls/fs/100751.htm> (accessed January 27, 2009).

³⁵ U.S. Department of State, Office of Weapons Removal and Abatement, *U.S. Intervention on Humanitarian Impacts of Cluster Munitions*, by Richard Kidd, Washington, DC: June 20, 2007, archive online, <http://2001-2009.state.gov/t/pm/rls/rm/87303.htm> (accessed on March 24, 2009).

³⁶ U.S. Department of State, U.S. Mission to the United Nations in Geneva, *U.S. Statement on Humanitarian Aspects of Cluster Munitions*, by Katherine Baker, Press Release (Washington, DC: Government Printing Office, January 16, 2008).

post-conflict humanitarian concerns, such as removal and civilian notification. While it correctly diagnoses the human impact, Protocol V merely attempts to alleviate, not prevent the symptoms.³⁷

Modifications & Advancements

Despite documented claims that cluster munitions are an effective weapon, the Defense Department continues to fund contracts intended to improve their reliability. Defense Industry Daily reported in 2005 that the DoD granted a 52.9 million dollar contract to Lockheed Martin Missile and Fire Control. The order was for 1,655 Production Phase Wind Corrected Munitions Dispenser (WCMD) Tail Kits. The relatively inexpensive tail kit, costing taxpayers a mere \$9,000 per unit, allegedly “turns ‘dumb’ cluster bombs into accurate ‘smart’ weapons” by steering deployed cluster dispensers to precise target coordinates. While the dispenser itself was capable of accuracy within 30 feet, the submunitions contained within it no doubt seriously damaged everything within their range; hence making the tail kit, and the dispenser’s 30 foot accuracy, irrelevant.³⁸

Weapons manufacturers continue to utilize advancements in technology to further U.S. military superiority. Textron Defense Systems, located in Wilmington, Massachusetts, designed and manufactured the CBU-105 which was combat dropped during Operation Iraqi Freedom in April 2003. Known as a Sensor Fuzed Weapon, the CBU-105 was the first “smart” air-to-surface

³⁷ United Nations, Convention on Certain Conventional Weapons, *The Protocol on Explosive Remnants of War (Protocol V)*, November 28, 2003, [http://www.unog.ch/80256EDD006B8954/\(httpAssets\)/5484D315570AC857C12571DE005D6498/\\$file/Protocol+on+Explosive+Remnants+of+War.pdf](http://www.unog.ch/80256EDD006B8954/(httpAssets)/5484D315570AC857C12571DE005D6498/$file/Protocol+on+Explosive+Remnants+of+War.pdf) (accessed on March 31, 2009).

³⁸ Defense Industry Daily, “52.9M in Smart Cluster Bomb Kits to Oman, USAF,” May 17, 2005, <http://www.defenseindustrydaily.com/529m-in-smart-cluster-bomb-kits-to-oman-usaf-0531/> (accessed April 15, 2009).

cluster munition to be produced for the U.S. Air Force. In production today is the BLU-108, which is equipped with passive infrared and active laser sensors.³⁹ While a sensor is capable of detecting and engaging a target, it is important to bear in mind that a sensor cannot distinguish between civilian and combatant.

Engineering a “safe” weapon would inherently contradict the nature of war. In light of this, what feasible options are available to guard against civilian harm? From a humanitarian aspect, any weapon that does not have the ability to discriminate threatens civilian welfare, both during - and in the case of cluster munitions - after conflict. Cluster munitions, from a strategic standpoint, are argued to be, in certain circumstances, an effective weapon. In remote rural locales the use of cluster munitions could be justified, yet it is quite evident that their use in urban areas poses undue harm to civilian populations.

The United States is at the forefront of advanced weapon capabilities. Despite advancements in science, war at its most basic level continues to consist of conflict between human beings. The ability to engage in conflict remotely, whether it be from an Air Force bomber miles above a city or from a computer console in the United States, does little to protect civilian populations. Modifications and advancements may attempt to reduce civilian impact, yet they cannot ensure civilian safety when urban warfare occurs.

³⁹ Textron Defense Systems, “Sensor Fuzed Weapon,” 2004, http://www.textron.com/textron_businesses/textron_systems/tds_products.jsp (accessed April 15, 2009).

Conclusions & Recommendations

On February 11, 2009, a bill was introduced into the United States Senate by Senator Diane Feinstein (D) of California, titled the Cluster Munitions Civilian Protection Act of 2009.⁴⁰ The bill, if passed, supports previously stated U.S. Defense Department policy, which limits submunitions to those that do not result in more than 1 percent unexploded ordnance. It moves beyond current policy to state that these munitions will not be used in civilian areas. The bill's inclusion of a presidential waiver in regards to submunition failure rates, however, conveys the Defense Department's intent to maintain, and continue utilization of, the same type of munitions deployed during Operation Enduring Freedom.

The United States has the capacity to persuade without force, yet it continues to dictate with military strength. Advancements in science continue to refine U.S. military strategic capabilities. The cluster munitions utilized during Operation Enduring Freedom only offer a glimpse into future weapons capabilities. The United States Air Force, for instance, is seeking to develop submunitions that would "be equipped with sensors capable of locking on to targets up to 5 kilometers away, and should have enough onboard power to chase a moving target for up to 5 minutes."⁴¹ Reality dictates that advancements in science will continue to produce weapons that fall outside of current international treaties.

Military warfare doctrine does not always discriminate between soldier and civilian.

Urban warfare, henceforth, provides no realistic means upon which to shield civilian

⁴⁰ U.S. Senate, *Cluster Munitions Civilian Protection Act of 2009*, 111th Cong., 1st Sess., S.416 (Washington, DC: Library of Congress, February 11, 2009), <http://thomas.loc.gov/cgi-bin/query/z?c111:S.416>: (accessed on March 29, 2009).

⁴¹ Paul Marks, "You Thought Cluster Bombs Were Scary? Try These...," *New Scientist* 199 (September 27, 2008):26.

populations from harm. The use of cluster munitions during Operation Enduring Freedom is, in and of itself a singular event, yet within the scope of public health it remains an issue of global significance. Historical analysis indicates that it is an operationally unsound weapon; chronologically documented since the Vietnam War. Within Afghanistan, unexploded ordnance places undue burden on an already fragile society, which has endured three decades of modern conflict.

Urban warfare affects civilian populations, unintended or not. As health is the catalyst of a productive and functional society, public health is the foundation upon which civil society exists. Explosive remnants of war continue to burden public services and chronically affect those who have already suffered as a result of it. It poses a generational threat to those who remain to carry on their lives long after violence ceases. Beyond immediate assistance to the wounded, long-term infrastructure development must adequately address civilian needs, as public health is not simply limited to the availability of a medical professional, but also encompasses the notions of welfare and wellbeing.

Why does the Defense Department cling to an operationally unsound weapon? Its reasoning remains stagnated in Cold War tactics, despite operating a 21st century war. Until the United States can pursue and ensure national security through non-conflict avenues, there will remain an operational need for defensive and offensive weapons. The goal, therefore, is to continue to refine and perfect the rules of engagement while simultaneously placing value on human welfare. The international community has deemed cluster munitions to be contrary to this standard.

The intent of public health is to first prevent, and then to cure.⁴² U.S. policy needs to shift focus away from post-conflict remedies to prevention. Ongoing discussion and analysis will continue to provide a basis upon which to measure the full extent of public health implications in Afghanistan, as subsequent clinical studies and the declassification of military warfare doctrine will no doubt provide further insight into the long-term consequences of Operation Enduring Freedom.

⁴² Maria E. Kett and Steve J. Mannion, "Managing the Health Effects of the Explosive Remnants of War," *Journal of the Royal Society for the Promotion of Health* 124, no. 6 (August 2004): 266.

Bibliography

- Beniniy, Aldo, and Lawrence Moulton. "Civilian Victims in an Asymmetrical Conflict: Operation Enduring Freedom, Afghanistan." *Journal of Peace Research* 41, no. 4 (2004): 403-422.
- Bilukha, Oleg O., Muireann Brennan, and Mark Anderson. "Death and Injury from Landmines and Unexploded Ordnance in Afghanistan, 2002-2006." *Journal of the American Medical Association* 298, no. 5 (August 1, 2007): 516-518.
- Bilukha, Oleg O., Muireann Brennan, and Bradley A. Woodruff. "Death and Injury from Landmines and Unexploded Ordnance in Afghanistan." *Journal of the American Medical Association* 290, no. 290 (August 2003): 650-653.
- Bolton, Paul, and Theresa Stichick Betancourt. "Mental Health in Postwar Afghanistan." *Journal of the American Medical Association*, 292, no. 5 (August 4, 2004): 626-628.
- Bristol, Nellie. "Reconstructing Afghanistan's Health System." *The Lancet* 366 (December 17, 2005): 2075-2076.
- British Broadcasting Company (BBC). "Radio Warns Afghans over Food Parcels." Media Reports. October 28, 2001. http://news.bbc.co.uk/2/hi/world/monitoring/media_reports/1624787.stm (accessed on January 20, 2009).
- "A Crucial Time for Afghanistan's Fledgling Health System." Editorial. *The Lancet* 365, (March 5, 2005):819-820.
- Defense Industry Daily. "52.9M in Smart Cluster Bomb Kits to Oman, USAF." May 17, 2005. <http://www.defenseindustrydaily.com/529m-in-smart-cluster-bomb-kits-to-oman-usaf-0531/> (accessed April 15, 2009).
- Drew, Christopher. "Drones Are Weapons of Choice in Fighting Qaeda." *The New York Times*, March 17, 2009. <http://www.nytimes.com/2009/03/17/business/17uav.html> (accessed March 31, 2009).
- Foegen, William. "Arms and Public Health: A Global Perspective." *War and Public Health*. Edited by Barry S. Levy, and Victor W. Sidel. Washington, DC: Oxford University Press, 1997.
- Giannou, Chris. "Antipersonnel Landmines: Facts, Fictions, and Priorities." *British Medical Journal* 315, no. 7120 (November 29, 1997). <http://www.bmj.com/archive/7120/7120ed6.htm> (accessed on February 16, 2009).

Gibbs, Walter, and Kirk Semple. "Afghanistan Agrees to Sign Bomb Treaty." *The New York Times* Late Edition, December 14, 2008.

http://www.nytimes.com/2008/12/04/world/04cluster.html?_r=1&scp=1&sq=Afghanistan%20Agrees%20to%20sign%20bomb%20treaty&st=cse (accessed on February 10, 2009).

Herold, Marc. "Counting the Dead." *The Guardian*, August 8, 2002.

<http://www.guardian.co.uk/world/2002/aug/08/afghanistan.comment> (accessed on February 18, 2009).

Herthel, Thomas J. "On the Chopping Block: Cluster Munitions and the Law of War." *The Air Force Law Review*, 51 (2001): 229-270.

<http://library2.csumb.edu:2062/ehost/pdf?vid=3&hid=22&sid=ebbf3f3c-804d-4758-986c-3f561bc5b560%40sessionmgr2> (accessed on February 2, 2009).

Human Rights Watch. "Cluster Bomblets Litter Afghanistan." November 15, 2001.

<http://www.hrw.org/en/news/2001/11/15/cluster-bomblets-litter-afghanistan> (accessed on January 20, 2009).

Human Rights Watch. "Cluster Bombs in Afghanistan." Human Rights Watch Backgrounder.

October 2001. <http://www.hrw.org/legacy/backgrounder/arms/cluster-bck1031.htm> (accessed on February 16, 2009).

International Campaign to Ban Landmines. "Afghanistan, Landmine Monitor Report 2002."

<http://www.icbl.org/lm/2002/afghanistan.html> (Accessed February 10, 2009).

International Committee of the Red Cross. "Afghan Mine Victims Brave the Odds."

<http://www.icrc.org/web/eng/siteeng0.nsf/htmlall/afghanistan-feature-121107> (accessed on February 8, 2009).

International Committee of the Red Cross. "Explosive Remnants of War: The Lethal Legacy of

Modern Armed Conflict." <http://www.icrc.org/web/eng/siteeng0.nsf/html/erw-factsheet-150807> (accessed on February 8, 2009).

King, Colin. "Testing Times: Unrealistic Reliability Trials Disguise Cluster Munitions Failure Rates." *Jane's International Defense Review*, April 15, 2008.

Kett, Maria E., and Steve J. Mannion. "Managing the Health Effects of the Explosive Remnants of War." *Journal of the Royal Society for the Promotion of Health* 124, no. 6 (August 2004): 262-267.

Mannion, Steve, and Eddie Chaloner. "Potential Health Hazards of Cluster Bombing in Shomali Valley, Afghanistan in October-November 2001." *Military Medicine* 168, no. 9 (September 2003) 756-757.

- Marks, Paul. "You Thought Cluster Bombs Were Scary? Try These..." *New Scientist* 199 (September 27, 2008):26.
- McGrath, Rae. *Landmines and Unexploded Ordnance: A Resource Book*. London: Pluto Press, 2000.
- Moszynski, Peter. "Charity Calls for Ban on Cluster Bombs." *British Medical Journal* 325 (November 2, 2002): 988.
- RAND Corporation. "U.S. Health Care Today: Current Situation for Capacity." 2009.
<http://www.randcompare.org/current/dimension/capacity> (accessed April 19, 2009).
- Scholte, Willem F. "Mental Health Symptoms Following War and Repression in Eastern Afghanistan." *Journal of the American Medical Association* 292, no. 5 (2004): 585-593.
- Textron Defense Systems. "Sensor Fuzed Weapon." 2004.
http://www.textron.com/textron_businesses/textron_systems/tds_products.jsp
(accessed April 15, 2009).
- Tuttle, Doug. "US Cluster Munitions Policy: The Policy Looks Good on Paper, but More Action is Needed From the U.S. to Rid the World of Cluster Munitions." *Center for Defense Information*, (February 25, 2008). <http://www.isn.ethz.ch/isn/Current-Affairs/Security-Watch/Detail/?ots591=4888CAA0-B3DB-1461-98B9-E20E7B9C13D4&lng=en&id=54158>
(accessed February 10, 2009).
- United Nations. Convention on Certain Conventional Weapons. *The Protocol on Explosive Remnants of War (Protocol V)*. November 28, 2003.
[http://www.unog.ch/80256EDD006B8954/\(httpAssets\)/5484D315570AC857C12571DE005D6498/\\$file/Protocol+on+Explosive+Remnants+of+War.pdf](http://www.unog.ch/80256EDD006B8954/(httpAssets)/5484D315570AC857C12571DE005D6498/$file/Protocol+on+Explosive+Remnants+of+War.pdf) (accessed on March 31, 2009).
- United Nations. Convention on Cluster Munitions. Dublin, Ireland. May 30, 2008.
[http://www.unog.ch/80256EDD006B8954/\(httpAssets\)/AE634C408642B417C12574F700500A8A/\\$file/ccm77_english.pdf](http://www.unog.ch/80256EDD006B8954/(httpAssets)/AE634C408642B417C12574F700500A8A/$file/ccm77_english.pdf) (accessed on March 31, 2009).
- United Nations Development Program. *Security with a Human Face – Challenges and Responsibilities*. Afghanistan National Human Development Report 2004.
http://www.cphd.af/nhdr/nhdr04/download/pdfs/eng/nhdr_04_complete.pdf (accessed on March 29, 2009).
- U.S. Department of Defense. Office of the Assistant Secretary of Defense (Public Affairs). *Cluster Munitions Policy Released*. News Release No. 577-08. Washington, DC: Government Printing Office, July 9, 2008.

- U.S. Department of Defense. Office of the Assistant Secretary of Defense (Public Affairs). *Statement of the Secretary of Defense*, by Donald H. Rumsfeld. News Release No. 491-01. Washington, DC: Government Printing Office, October 7, 2001.
- U.S. Department of Defense. Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics. *Defense Science Board Task Force on Munitions System Reliability*, by the Defense Science Board a Federal Advisory Committee. Washington, DC: Government Printing Office, September 2005.
- U.S. Department of Defense. Secretary of Defense. *DoD Policy on Cluster Munitions and Unintended Harm to Civilians*, by Robert M. Gates. Memorandum for Secretaries of the Military Departments. OSD 76224-08. Washington, DC: Government Printing Office, June 19, 2008.
- U.S. Department of State. Bureau of Political-Military Affairs. *White Paper: Putting the Impact of Cluster Munitions in Context with the Effects of All Explosive Remnants of War*. Washington, DC: Published by the U.S. Department of State Website, February 15, 2008. <http://2001-2009.state.gov/t/pm/rls/fs/100751.htm> (accessed on February 10, 2009).
- U.S. Department of State. Office of the Spokesman. *United States Clearance of Unexploded Cluster Munitions*. Washington, DC: Published by the U.S. Department of State Website, February 23, 2007. <http://2001-2009.state.gov/r/pa/prs/ps/2007/february/81000.htm> (accessed on February 10, 2009).
- U.S. Department of State. Office of Weapons Removal and Abatement. *U.S. Intervention on Humanitarian Impacts of Cluster Munitions*, by Richard Kidd. Washington, DC: Published by the U.S. Department of State Website, June 20, 2007. <http://2001-2009.state.gov/t/pm/rls/rm/87303.htm> (accessed on March 24, 2009).
- U.S. Department of State. Office of Weapons Removal and Abatement. *U.S. Landmine Policy and the Ottawa Convention Ban on Anti-Personnel Landmines: Similar Path*, by Richard G. Kidd. Washington, DC: Published by the U.S. Department of State Website, November 21, 2007. <http://2001-2009.state.gov/t/pm/rls/rm/95596.htm> (accessed on March 24, 2009).
- U.S. Department of State. U.S. Mission to the United Nations in Geneva. *U.S. Statement on Humanitarians Aspects of Cluster Munitions*, by Katherine Baker. Press Release. Washington, DC: Government Printing Office, January 16, 2008.
- U.S. General Accountability Office. *Military Operations Information on U.S. Use of Land Mines in the Persian Gulf War*. Report to the Honorable Lane Evans, House of Representatives. GAO-02-1003. Washington, DC: Government Printing Office, September 2002.

U.S. Senate. *Cluster Munitions Civilian Protection Act of 2009*. 111th Congress, 1st Session. S.416. Washington, DC: Library of Congress, February 11, 2009. <http://thomas.loc.gov/cgi-bin/query/z?c111:S.416>: (accessed on March 29, 2009).