

## OVERVIEW OF A DIRTY DOZEN CLUSTER MUNITIONS

Human Rights Watch believes that all inaccurate and unreliable cluster munitions should be prohibited and the types listed below are examples of some of the worst offenders. These dirty dozen are singled out not as the only objectionable types of cluster munitions, but as those among the most widely used, those that have caused the most civilian harm, and/or those that would pose the greatest threat to civilians if used due to their unreliability (high failure rates) and inaccuracy. One, or more, of these types were used in each of the 21 locations where cluster munitions are known to have been used. One, or more, of these types are also stockpiled by three-quarters of the states that currently possess cluster munitions.

	155mm Projectiles		Rockets		Bombs							Aerial Dispensers		
	M483A1 & M864	M395 & M396	M26 MLRS	M87 Orkan	Rockeye		CBU-87 CEM	RBK Series	BL-755	CB-500	CBU-58B	Beluga	KMG-U	
Synonymous names	DM-602 DM-612	CME DM-632 DM-642 DM-652	DM-662 KaG-88 KaG-90 L20A1	--	Ababeel-50	Mk.-7 Mk.-20 CBU-59	CBU-78 CBU-99 CBU-100	CBU-103	RBK-250 RBK-275 RBK-500	RBL-755	CB-130 CB-250	--	BLD-66 BLG-66	--
Producers	U.S. Pakistan Turkey Germany	Israel Germany Argentina Romania	U.S. Israel S. Korea	Bosnia-Herz Iraq Yugoslavia	U.S.	U.S.	U.S.	USSR	U.K.	Chile	U.S.	France	USSR	
Submunition number & type	88 or 72 grenades M42 M46 DM-1348	63 or 49 grenades M85 DM-1383 DM-1385	644 M77 grenades	288 KB-1 grenades	247 Mk.-118 bomblets	202 BLU-97 bomblets	Variable payload of AO-2.5, AO-1Sch, PTAB 2.5/M, OFAB 2.5, ShOAB-0.5 bomblets	147 bomblets	240 PM-1 bomblets	650 BLU-63 bomblets	152 BLG-66 bomblets	Variable payload of AO-2.5, ODS-OD, PTAB 2.5, PTAB-1M bomblets		
Reported submunition failure rate	3-14% based on testing	1.3-2.3% based on testing	5-23% based on testing	Not Known	2% based on testing; operational failure rates higher	4-6% based on testing	Not Known	average of 6.4% based on 15 years of tests	Not Known	Not Known	Not Known	Not Known		
Submunition Photo														
Locations used	Iraq Kuwait Lebanon Western Sahara	Iraq Lebanon	Iraq Kuwait Lebanon	Albania Bosnia-Herz Croatia Iraq	Iraq Kuwait Saudi Arabia Syria Yugoslavia Vietnam	Afghanistan Iraq Kuwait Saudi Arabia Yugoslavia	Afghanistan Chechnya Tajikistan	Falklands-Malvinas Iraq Kuwait Sierra Leone Yugoslavia	Eritrea Ethiopia Iraq Sudan	Cambodia Iraq Kuwait Laos Lebanon Western Sahara Vietnam	Chad Iraq Kuwait	Afghanistan Chechnya Tajikistan		
Removed from Service	Belgium Germany Netherlands U.K.	--	Netherlands	--	Australia Canada Denmark France Norway	--	Czech Rep. Poland	Belgium Germany Netherlands Portugal Switzerland	--	U.S.	France	Czech Rep. Poland		
Under Review	Canada	Denmark Norway	France Germany	--	--	--	Hungary	--	--	--	--	Hungary		
In Service	Bahrain Greece Israel Jordan S. Korea Morocco Pakistan Turkey U.S.	Argentina Austria Finland Germany Greece India Italy Israel Romania Switzerland U.K. U.S.	Bahrain Greece Israel Italy Japan S. Korea Turkey U.K. U.S.	Bosnia-Herz Croatia Iraq Serbia	Argentina Egypt Greece Honduras Indonesia Israel Jordan S. Korea Morocco Oman Pakistan Spain Thailand Turkey	Egypt Greece Italy Japan S. Korea Netherlands Oman Poland Saudi Arabia Turkey UAE	Belarus Bulgaria Croatia Cuba India Iraq N. Korea Libya Romania Slovakia Syria Ukraine	India Iran Italy Nigeria Oman Pakistan Saudi Arabia Serbia Thailand UAE U.K.	Chile Eritrea Ethiopia Iraq Sudan	Israel Morocco Saudi Arabia	Argentina Greece India	Algeria Angola Cuba India Iran Iraq N. Korea Libya Mongolia Romania Slovakia Sudan Syria Ukraine Yemen		

# ESSENTIAL ELEMENTS FOR REDUCING THE CIVILIAN HARM OF CLUSTER MUNITIONS: EXAMPLES OF POLICY AND PRACTICE

Element	Positive Policy and Practice
Steps should be taken at the national and international levels to mitigate the negative humanitarian impact of cluster munitions. A legally binding international agreement is a desirable, and necessary, future objective. But in the short term, development of model policies, practices, and regulations at the national level is essential.	<ul style="list-style-type: none"> <li>The Parliament of <b>Belgium</b> adopted legislation banning cluster munitions in 2006 and the law entered into force on June 9, 2006 after publication in the official gazette. Similar initiatives have been introduced in the parliaments of <b>Austria, France, Germany, Italy, Sweden, and Switzerland.</b></li> <li><b>Norway</b> is observing a time-limited moratorium on cluster munitions.</li> <li>The <b>Holy See</b> supported an immediate moratorium on the use of cluster munitions and called for their elimination.</li> <li><b>Denmark, Mexico, Norway, Spain, and Sweden</b> have called for work toward a legally binding international regulation of cluster munitions within the CCW.</li> <li><b>Australia</b> said in April 2003 that it does not use cluster munitions and the Australian Senate passed a motion calling for a moratorium on use.</li> <li>In December 2001, the <b>European Parliament</b> adopted a resolution calling upon CCW States Parties to declare an immediate moratorium until an international agreement has been negotiated on the regulation, restriction or banning of the use, production and transfer of cluster munitions under the CCW.</li> </ul>
Use of cluster munitions in or near populated areas should be prohibited. Because cluster munitions have a wide footprint their use in populated areas virtually guarantees civilian casualties.	<ul style="list-style-type: none"> <li><b>Norway</b> has called upon CCW States Parties to consider a more general prohibition on the use of cluster munitions against military targets located in civilian areas.</li> <li><b>Sweden</b> argued in August 2005 that a cluster munition with a large footprint might be considered to be indiscriminate if used in a populated area.</li> <li><b>Switzerland</b> noted in August 2004 that attacks with cluster munitions in densely populated areas such as inhabited cities or villages generally as highly problematic, even more so where cluster munitions with high dud rates are concerned.</li> <li><b>Germany</b> stated in August 2005 that the use of cluster munitions in attacks on military objectives located within concentrations of civilians is prohibited unless they are clearly separated and all feasible precautions are taken to minimize the effects to only the military objective.</li> </ul>
Use of cluster munitions in exacerbating circumstances should be prohibited. Use of cluster munitions in forested areas, soft ground, or from high/low altitude foreseeably increases the dud rate and/or inaccuracy of the weapon and should be prohibited.	<ul style="list-style-type: none"> <li><b>Brazil</b> suggested in September 2005 that cluster munition use should be limited depending on "weather conditions and terrain characteristics" and that "cluster bombs or submunition dispensers should not be released or launched from high altitudes" because the wide dispersal pattern is likely to "generat[e] greater risk of unnecessary harm to civilians."</li> <li><b>Poland</b> stated in July 2005 that military commanders should take "precautionary measures" to minimize civilian casualties from submunitions, "bear[ing] in mind...the manufacturer's user guidelines, such as topographic conditions affecting the correct performance of the submunitions (it could be failure-prone in marshland and woodlands)."</li> </ul>
Use of cluster munitions with high dud rates should be prohibited. The dud rate of cluster munitions should be limited to less than one percent in order to reduce the post-conflict threat from these weapons.	<ul style="list-style-type: none"> <li><b>Sweden</b> argued in August 2005 that a cluster munition with submunitions that have a high dud rate and is used in populated areas might create a disproportionate suffering for the civilian population compared with the military advantage from the use of such a weapon.</li> <li><b>Poland, South Africa,</b> and the <b>United States</b> have announced national policies for the future procurement of cluster munitions that establish a minimum submunition reliability rate.</li> <li><b>Argentina, Denmark, Germany, Norway, and Switzerland</b> have stated that they will not procure, and in some cases use, cluster munitions that have a hazardous dud rate of greater than one percent and will not use those without the capacity to self-destruct or self-neutralize. The <b>United Kingdom</b> announced that it would implement a similar policy by 2015.</li> </ul>
Stockpiles of unreliable and inaccurate submunitions should be destroyed or retrofitted. Existing stocks of "legacy" submunitions with high dud rates and/or accuracy problems should be destroyed or modified in a timely fashion, and not be eligible for transfer or use.	<ul style="list-style-type: none"> <li><b>Belgium, Germany, Netherlands, and Switzerland</b> have withdrawn from service BL-755 bombs. The <b>United Kingdom</b> acknowledged in March 2005 that the BL-755 has an unacceptably high submunition failure rate and will go out-of-service by 2010. <b>Portugal</b> reports destroying some BL-755 in 2005.</li> <li><b>Australia, Canada, Denmark,</b> and <b>Norway</b> have removed from service Rockeye bombs.</li> <li><b>France</b> announced in March 2005 that it destroyed its entire stock of BLG-66 Belouga bombs between 1996 and 2002.</li> <li><b>Poland</b> reported that its residual stockpile of cluster bombs is no longer in service.</li> <li>The <b>United Kingdom</b> has removed from service and is destroying its stockpile of M483 155mm DPICM projectiles.</li> <li>The <b>Netherlands</b> announced in October 2005 that it will destroy 70-percent of its holding of 174,000 M483A1 projectiles.</li> <li><b>Germany</b> in June 2006 announced the retirement of DM-602 and DM-612 155mm artillery projectiles.</li> <li>The <b>United States</b> is choosing to retrofit 5,000 existing M864 155mm DPICM projectiles with self-destruct submunitions at a cost of \$10.1 million.</li> <li><b>Germany and France</b> stated in March 2005 their intent not to use M26 MLRS rockets with DPICM submunitions until they are modernized. The <b>Netherlands</b> has withdrawn from service its MLRS launchers and M26 rockets citing concerns about the potential to create disproportionate collateral damage. <b>Denmark and Norway</b> decided not to purchase M26 rockets for their MLRS systems.</li> </ul>
Post-conflict measures should be strengthened. The users of cluster munitions should accept responsibility for clearance, risk education, provision of information, and victim assistance.	<ul style="list-style-type: none"> <li><b>CCW Protocol V</b> on Explosive Remnants of War (ERW) enters into force on November 12, 2006. It has been ratified by 23 states as of August 25, 2006: Albania, Bulgaria, Croatia, Czech Republic, Denmark, El Salvador, Finland, Germany, Holy See, India, Liberia, Liechtenstein, Lithuania, Luxembourg, Netherlands, Nicaragua, Norway, Sierra Leone, Slovakia, Sweden, Switzerland, Tajikistan, and Ukraine.</li> </ul>

Timeline of Cluster Munition Use		
Date	Location	Details
1943	USSR	Soviet forces use air-dropped cluster munitions against German armor.
1943	United Kingdom	German aircraft drop over 1,000 SD-2 "butterfly bombs" in an attack on the port of Grimsby.
1960s-1970s	Cambodia, Laos, Vietnam	U.S. forces make extensive use of cluster munitions in bombing campaigns. The ICRC estimates that in Laos alone, 9 to 27 million unexploded submunitions remain, and some 11,000 people have been killed or injured, of which more than 30 percent have been children. Another estimate, based on U.S. military databases, states that 9,500 sorties against tactical targets in Cambodia delivered up to 87,000 air-dropped cluster munitions.
1973	Syria	Israel uses air-dropped cluster munitions against non-state armed group (NSAG) training camps near Damascus.
1975-1988	Western Sahara	Moroccan forces use cluster munitions against NSAG.
1978	Lebanon	Israel uses cluster munitions in southern Lebanon.
1979-1989	Afghanistan	Soviet forces make use of air-dropped and rocket-delivered cluster munitions. NSAG also use rocket-delivered cluster munitions on a smaller scale.
1982	Lebanon	Israel uses cluster munitions against Syrian forces and NSAG during its invasion of Lebanon.
1982	Falkland/Malvinas Islands	UK aircraft drop cluster munitions on Argentinean infantry positions near Port Stanley and Port Howard.
1986	Chad	French air forces use air-dropped cluster munitions against a Libyan airfield at Wadi Doum.
1991	Iraq, Kuwait, Saudi Arabia	The U.S. and its allies (France, Saudi Arabia, U.K.) drop 61,000 cluster bombs, containing some 20 million submunitions. The number of cluster munitions delivered by surface-launched artillery and rocket systems during the Gulf War is not known, but one source estimates that over thirty million DPICM submunitions were used in the conflict. A total of 2,400 explosive dud cluster munitions were detected and destroyed in Kuwait in 2002.
1992-1995	Bosnia and Herzegovina	Forces of Yugoslavia and NSAG use available stocks of cluster munitions during civil war.
1992-1997	Tajikistan	Use by unknown forces in civil war.
1994-1996	Chechnya	Russian forces use cluster munitions against NSAG.
1995	Croatia	On May 2-3, 1995, an NSAG uses Orkan M-87 multiple rocket launchers to attack civilians in Zagreb.
1996-1999	Sudan	Sudanese government forces use air-dropped cluster munitions in southern Sudan.
1997	Sierra Leone	Nigerian ECOMOG peacekeepers use air-dropped cluster munitions on the eastern town of Kenema.
1998	Ethiopia / Eritrea	Ethiopia and Eritrea exchange aerial cluster munition strikes, Ethiopia attacking the Asmara airport and Eritrea attacking the Mekele airport.
1998-1999	Albania	Yugoslav forces conducted cross-border rocket attacks and six NATO aerial cluster munition strikes.
1999	Yugoslavia (including Kosovo)	The U.S., U.K., and Netherlands drop 1,765 cluster bombs, containing about 295,000 bomblets.
2001- 2002	Afghanistan	The U.S. drops about 1,228 cluster bombs containing 248,056 bomblets.
2003	Iraq	The U.S. and U.K. use nearly 13,000 cluster munitions containing an estimated 1.8 to 2 million submunitions in the three weeks of major combat.
2006	Lebanon	Israel Defense Forces make extensive use of air-dropped and surface-launched cluster munitions against Hezbollah.