













# A DIRTY DOZEN CLUSTER MUNITIONS

Human Rights Watch believes that all inaccurate and unreliable cluster munitions should be prohibited. The dirty dozen below are not the only objectionable types of cluster munitions but are singled out because they are either among the most widely used, have caused the most civilian harm, or pose the greatest threat to civilians due to their high failure rates and inaccuracy.

	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		
<b>Synonymous names</b>	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	--
<b>Producers</b>	Pakistan Turkey US	Argentina Germany India Israel	Romania Switzerland US UK	South Korea US	Bosnia & Herzegovina Iraq Yugoslavia	US	US	Former USSR	UK	Chile	US	France	Former USSR	
<b>Submunition number &amp; type</b>	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		
<b>Reported submunition failure rate</b> <small>(operational failure rates may be higher)</small>	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		
<b>Submunition Photo</b>														
<b>Locations used</b>	Iraq Kuwait Lebanon Western Sahara	Iraq Lebanon	Iraq Kuwait Lebanon	Albania Bosnia & Herzegovina Croatia Iraq	Albania Iraq Kuwait Syria Yugoslavia Vietnam	Afghanistan Albania Iraq Kuwait Yugoslavia	Afghanistan <b>Angola</b> <b>Chad</b> Chechnya <b>Nagorno-Karabakh</b> Tajikistan <b>Uganda</b>	Albania Croatia <b>DR Congo</b> Eritrea Falklands(Malvinas) Iraq Kuwait Yugoslavia	Eritrea Ethiopia Iraq Sudan	Cambodia Iraq Kuwait Laos Lebanon Western Sahara Vietnam	Chad Iraq Kuwait Sierra Leone	Afghanistan Chechnya Tajikistan		
<b>Removed from Service</b> <small>(Cluster munition stockpile amounts indicated where known)</small>	Belgium Canada Germany <b>Netherlands (174,000)</b> UK (16,871)	Denmark	Netherlands (16,000) UK (43,200)	--	Argentina Australia Canada Denmark (200) Norway	--	Czech Republic Poland	Belgium Germany (4,600) Netherlands Portugal Switzerland UK (3,650)	--	US	Argentina France	Czech Republic Poland		
<b>Under Review</b>	--	Austria Norway (53,000)	France Germany (36,972)	Bosnia & Herzegovina <b>Croatia</b>	--	--	<b>Croatia</b> Hungary	--	--	--	--	Hungary		
<b>In Service</b> <small>(Cluster munition stockpile amounts indicated where known)</small>	Bahrain (1,000) Greece Israel Jordan (28,704) South Korea Morocco Pakistan Turkey US (3.3 million)	Argentina Finland Germany (130,894) Greece India Italy Israel Romania Switzerland UK (59,364) US (5,000)	Bahrain (1,578) Egypt (2,910) Greece Israel (18,000) Italy Japan South Korea Turkey US (369,576)	Iraq Serbia	Egypt (1,300) Greece Honduras (120) Indonesia Israel Jordan (150) South Korea Morocco (800) Oman Pakistan (200) Spain Thailand (500) Turkey (3,304) US (58,762)	Egypt (760) Greece Italy Japan South Korea Netherlands Oman Poland Saudi Arabia (1,200) Turkey UAE US (109,508)	Belarus Bulgaria Cuba Guinea-Bissau India Iraq North Korea Libya Romania Slovakia Syria Ukraine	India Iran Italy Nigeria Oman Pakistan Saudi Arabia Serbia Thailand UAE	Chile Eritrea Ethiopia Iraq Sudan	Israel Morocco (1,752) Saudi Arabia (1,000)	Greece India	Algeria Angola Cuba India Iran Iraq North Korea Libya Mongolia Romania Slovakia Sudan Syria Ukraine Yemen		

NOTE: Bolded text indicates (except in titles) new information added since last edition (May 2007)

AT A GLANCE: GLOBAL OVERVIEW OF CLUSTER MUNITION POLICY AND PRACTICE									
<ul style="list-style-type: none"> <li>All states should support the Norwegian-led initiative to develop urgently a legally binding international agreement to prohibit cluster munitions that cause unacceptable humanitarian harm.</li> <li>Pending conclusion of a new treaty, states should immediately adopt a national moratorium on use, production and trade of cluster munitions and/or take other steps at the national level to mitigate the negative humanitarian impact of cluster munitions.</li> <li>Use, production and trade of unreliable and inaccurate cluster munitions should be prohibited, and existing stockpiles should be destroyed. Post-conflict measures should be strengthened. Cluster munition users should accept responsibility for clearance, risk education, provision of information, and victim assistance.</li> </ul>		<p align="center"><b>Examples of Policy and Practice</b></p> <ul style="list-style-type: none"> <li>Belgium's legislation banning cluster munitions entered into force on June 9, 2006.</li> <li>Norway (June 2006), Austria (February 2007), and <b>Hungary (May 2007)</b> are observing a moratorium on the use, production, and transfer of cluster munitions. Bosnia &amp; Herzegovina announced in February 2007 its intent to enact a moratorium. While they do not possess cluster munitions, the Holy See, Ireland, Mexico, and New Zealand have voiced their support for a moratorium and urged other states to enact one.</li> <li><b>Peru announced its initiative to create the world's first cluster munitions-free zone in Latin America.</b></li> <li>Actions to prohibit or restrict cluster munitions have been introduced in the parliaments of Australia, Austria, Denmark, France, Germany, Italy, Luxembourg, Netherlands, Sweden, Switzerland, the United Kingdom and the United States.</li> </ul>							
<p align="center"><b>Declaration Made at the Oslo Conference on Cluster Munitions, 22 – 23 February 2007</b></p> <p>"A group of States, United Nations Organisations, the International Committee of the Red Cross, the Cluster Munition Coalition and other humanitarian organizations met in Oslo on 22 – 23 February 2007 to discuss how to effectively address the humanitarian problems caused by cluster munitions.</p> <p>Recognizing the grave consequences caused by the use of cluster munitions and the need for immediate action, states commit themselves to:</p> <ol style="list-style-type: none"> <li>Conclude by 2008 a legally binding international instrument that will: <ol style="list-style-type: none"> <li>prohibit the use, production, transfer and stockpiling of cluster munitions that cause unacceptable harm to civilians, and</li> <li>establish a framework for cooperation and assistance that ensures adequate provision of care and rehabilitation to survivors and their communities, clearance of contaminated areas, risk education and destruction of stockpiles of prohibited cluster munitions.</li> </ol> </li> <li>Consider taking steps at the national level to address these problems.</li> <li>Continue to address the humanitarian challenges posed by cluster munitions within the</li> </ol>									
<p align="center"><b>CCW Protocol V on Explosive Remnants of War (ERW)</b></p> <p align="center">Entered into force on November 12, 2006.</p> <p align="center">Ratified by 32 states as of June 13, 2007:</p> <p>Albania, Australia, Bulgaria, Croatia, Czech Republic, Denmark, El Salvador, Estonia, Finland, France, Germany, Holy See, Hungary, India, Ireland, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia FYR, Malta, Netherlands, Nicaragua, Norway, Sierra Leone, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tajikistan, and Ukraine.</p>		<p align="center"><b>Cluster Munition Procurement Policies</b></p> <ul style="list-style-type: none"> <li>Germany announced in June 2006 that it will not procure any new cluster munitions and will examine whether its existing stocks can be entirely replaced by alternative munitions.</li> <li>Argentina, Canada, Denmark, Germany, Norway, and Switzerland have stated that they will not procure, and in some cases will not use, cluster munitions that have a hazardous dud rate of greater than one percent; some will not use those without the capacity to self-destruct or self-neutralize. The UK announced in March 2005 that it would implement a similar policy by 2015.</li> <li>Poland, South Africa, and the US have announced national policies for the future procurement of cluster munitions that establish a minimum submunition reliability rate.</li> </ul>							
<p align="center"><b>Countries that have Produced Cluster Munitions (34)</b></p> <table border="0"> <tr> <td>Argentina+ Belgium*+ Bosnia &amp; Herzegovina*+ Brazil Bulgaria Chile + China Egypt + France+</td> <td>Germany+ Greece+ India Iran Iraq Israel Italy+ Japan+ North Korea</td> <td>South Korea Netherlands*+ Pakistan Poland+ Romania+ Russia Serbia+ Singapore</td> <td>Slovakia+ South Africa+ Spain+ Sweden+ Switzerland+ Turkey UK+ US</td> <td></td> </tr> </table> <p>The "*" symbol denotes past producers or countries that have renounced production. The "+*" symbol denotes countries that are participating in the Oslo Process.</p> <ul style="list-style-type: none"> <li>KBC Bank in Belgium has disinvested in the following publicly-traded companies because of their involvement in the production of cluster munitions: Aerostar, Alliant Techsystems, Aselsan, BAE Systems, EADS, Finmeccanica, GenCorp, General Dynamics, Honeywell International, L-3 Communications, Lockheed Martin, Magellan Aerospace, Northrop Grumman, Poongsan, Raytheon, Rheinmetall, and Thales.</li> </ul>					Argentina+ Belgium*+ Bosnia & Herzegovina*+ Brazil Bulgaria Chile + China Egypt + France+	Germany+ Greece+ India Iran Iraq Israel Italy+ Japan+ North Korea	South Korea Netherlands*+ Pakistan Poland+ Romania+ Russia Serbia+ Singapore	Slovakia+ South Africa+ Spain+ Sweden+ Switzerland+ Turkey UK+ US	
Argentina+ Belgium*+ Bosnia & Herzegovina*+ Brazil Bulgaria Chile + China Egypt + France+	Germany+ Greece+ India Iran Iraq Israel Italy+ Japan+ North Korea	South Korea Netherlands*+ Pakistan Poland+ Romania+ Russia Serbia+ Singapore	Slovakia+ South Africa+ Spain+ Sweden+ Switzerland+ Turkey UK+ US						
<p align="center"><b>Countries that Stockpile Cluster Munitions (75)</b></p> <table border="0"> <tr> <td>Algeria Angola+ Argentina+ Austria+ Azerbaijan Bahrain Belarus Belgium+ Bosnia &amp; Herzegovina+ Brazil Bulgaria Canada+ Chile+ China Croatia+</td> <td>Cuba Czech Republic+ Denmark+ Egypt+ Eritrea Ethiopia Finland+ France+ Georgia Germany+ Greece+ Guinea Guinea Bissau+ Honduras Hungary+</td> <td>India Indonesia+ Iran Iraq Israel Italy+ Japan+ Jordan+ Kazakhstan North Korea South Korea Kuwait Libya Moldova Mongolia</td> <td>Morocco Netherlands+ Nigeria+ Norway+ Oman Pakistan Poland+ Portugal+ Romania + Russia Saudi Arabia Serbia+ Singapore Slovakia+ South Africa+</td> <td>Spain+ Sudan Sweden+ Switzerland+ Thailand+ Turkey Turkmenistan Ukraine UAE UK+ US Uzbekistan Yemen+ Zimbabwe</td> </tr> </table>		Algeria Angola+ Argentina+ Austria+ Azerbaijan Bahrain Belarus Belgium+ Bosnia & Herzegovina+ Brazil Bulgaria Canada+ Chile+ China Croatia+	Cuba Czech Republic+ Denmark+ Egypt+ Eritrea Ethiopia Finland+ France+ Georgia Germany+ Greece+ Guinea Guinea Bissau+ Honduras Hungary+	India Indonesia+ Iran Iraq Israel Italy+ Japan+ Jordan+ Kazakhstan North Korea South Korea Kuwait Libya Moldova Mongolia	Morocco Netherlands+ Nigeria+ Norway+ Oman Pakistan Poland+ Portugal+ Romania + Russia Saudi Arabia Serbia+ Singapore Slovakia+ South Africa+	Spain+ Sudan Sweden+ Switzerland+ Thailand+ Turkey Turkmenistan Ukraine UAE UK+ US Uzbekistan Yemen+ Zimbabwe	<p align="center"><b>Definitions excerpt from Article 2 of the "Draft CCW Protocol on Cluster Munitions"</b></p> <p align="center">Submitted by Germany CCW/GGE/2007/WP.1</p> <p>"Cluster munitions" means an air-carried or ground-launched dispenser that contains sub munitions with explosives. Each cluster munition is designed to eject sub munitions over a pre-defined area target. "Cluster munitions" does not mean a dispenser that contains:</p> <ol style="list-style-type: none"> <li>direct-fire sub munitions,</li> <li>flare and smoke ammunitions,</li> <li>landmines,</li> <li>sub-munitions that are inert post impact, or less than ten sub munitions with explosives.</li> </ol> <p>"Sub-munition" of cluster munitions means a munition, which contains explosives and separates from a parent munition. Sub munitions are designed to detonate on, prior to, or immediately after impact on the identified target.</p>		
Algeria Angola+ Argentina+ Austria+ Azerbaijan Bahrain Belarus Belgium+ Bosnia & Herzegovina+ Brazil Bulgaria Canada+ Chile+ China Croatia+	Cuba Czech Republic+ Denmark+ Egypt+ Eritrea Ethiopia Finland+ France+ Georgia Germany+ Greece+ Guinea Guinea Bissau+ Honduras Hungary+	India Indonesia+ Iran Iraq Israel Italy+ Japan+ Jordan+ Kazakhstan North Korea South Korea Kuwait Libya Moldova Mongolia	Morocco Netherlands+ Nigeria+ Norway+ Oman Pakistan Poland+ Portugal+ Romania + Russia Saudi Arabia Serbia+ Singapore Slovakia+ South Africa+	Spain+ Sudan Sweden+ Switzerland+ Thailand+ Turkey Turkmenistan Ukraine UAE UK+ US Uzbekistan Yemen+ Zimbabwe					

TIMELINE OF CLUSTER MUNITION USE		
Date	Location	Details
1943	USSR	Soviet forces use air-dropped cluster munitions against German armor. German forces use SD-1 and SD-2 butterfly bombs against artillery on the Kursk salient.
1943	United Kingdom	German aircraft drop more than 1,000 SD-2 butterfly bombs on the port of Grimsby.
1960s-1970s	Cambodia, Laos, Vietnam	US forces make extensive use of cluster munitions in bombing campaigns. The ICRC estimates that in Laos alone, nine to 27 million unexploded submunitions remain, and some 11,000 people have been killed or injured, more than 30 percent of them children. An estimate based on US military databases states that 9,500 sorties 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 in Lebanon.
1982	Falkland Islands (Malvinas)	UK aircraft drop cluster munitions on Argentinean infantry positions near Port Stanley, Port Howard, and Goose Green.
1986-1987	Chad	French aircraft drop cluster munitions on a Libyan airfield at Wadi Doum. <b>Libyan forces also used AO-1SCh and PTAB-2.5 submunitions.</b>
1991	Iraq, Kuwait, Saudi Arabia	The US and its allies (France, Saudi Arabia, UK) 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 an estimated 30 million or more DPICM submunitions were used in the conflict.
1992-1994	Angola	<b>PTAB submunitions found in various locations.</b>
1992-1994	Nagorno-Karabakh	<b>Submunition contamination has been identified in at least 162 locations. Submunition types cleared by deminers include PTAB-1, ShOAB-0.5, AO-2.5.</b>
1992-1995	Bosnia & Herzegovina	Forces of Yugoslavia and NSAG use available stocks of cluster munitions during civil war. <b>NATO aircraft drop two CBU-87 bombs.</b>
1992-1997	Tajikistan	Use by unknown forces in civil war. <b>ShOAB and AO-2.5RT submunitions have been found in the town of Gharm in the Rasht Valley.</b>
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. Additionally, the Croatian government claimed that Serb forces used BL-755 bombs in Sisak, Kutina, and along the Kupa River.
1996-1999	Sudan	Sudanese government forces use air-dropped cluster munitions in southern Sudan, <b>including Chilean made PM-1 submunitions.</b>
1997	Sierra Leone	Nigerian ECOMOG peacekeepers use Beluga bombs 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. Ethiopia also dropped BL-755 bombs in Gash-Barka province of western Eritrea.
1998-1999	Albania	Yugoslav forces launch cross-border rocket attacks and NATO forces carry out six aerial cluster munition strikes.
1998-2003	DR Congo	<b>BL-755 bombs used by unknown forces in Kasu village in Kabalo territory.</b>
1999	Yugoslavia (including Serbia, Montenegro, and Kosovo)	The US, UK, and Netherlands drop 1,765 cluster bombs, containing 295,000 bomblets.
2001-2002	Afghanistan	The US drops 1,228 cluster bombs containing 248,056 bomblets.
Unknown	Uganda	<b>RBK-250/275 bombs and AO-1SCh submunitions found in the northern district of Gulu.</b>
2003-2006	Iraq	The US and UK use nearly 13,000 cluster munitions containing an estimated 1.8 to 2 million submunitions in the three weeks of major combat. <b>A total of 63 CBU-87 bombs were dropped by US aircraft between May 1, 2003 and August 1, 2006.</b>
2006	Lebanon	Israeli forces use surface-launched and air-dropped cluster munitions against Hezbollah. The UN estimates that Israel used up to 4 million submunitions.
2006	Israel	Hezbollah fires more than 100 Chinese-produced Type-81 122mm cluster munition rockets into northern Israel.

In addition, unconfirmed reports cite use of cluster munitions in Colombia, Kashmir, Pakistan, **Slovenia**, Turkey, and Yemen.