EXPLOSIVE STATES
Monitoring explosive violence in 2014
Introduction

Ultimately, civilians in Syria, Gaza, Israel, Afghanistan, Libya, eastern Ukraine and other conflict hotspots pay the price when the shells aimed at military targets end up hitting homes, hospitals and schools. This simply has to stop. These explosive weapons are designed for open battlefields, not built-up urban areas [...] This is not about the weapons themselves – it’s about where and how they are used.

ICRC President Peter Maurer, October 2014

For four years AOAV has tracked the use of explosive weapons around the world. Since 2011, almost 150,000 people have been reported killed or injured by weapons like rockets, mortars and car bombs.

Year on year, the casualty toll has mounted with 2014 being the worst that AOAV has recorded so far. Civilian casualties from explosive weapons are now 52% higher than 2011 levels.

Explosive violence worsened in its spread and severity in 2014. Civilian deaths and injuries from these weapons increased by 5% from 2013. Every day in 2014 there was an average of 90 civilian casualties, including 29 civilians who died daily at the hands of these weapons.

Civilians continue to bear the burden of explosive violence. In total AOAV recorded 41,847 deaths and injuries in 2014, 78% of whom were civilians. Civilians were killed and wounded as they slept, shopped, worshipped or travelled.

In Explosive States, AOAV explores the countries and contexts where civilians were most at risk from the use of explosive weapons. More than 50 different countries saw casualties last year, places as diverse as Ukraine, India and the Central African Republic.

For the second year running, Iraq and Syria were the two countries with the highest numbers of civilian casualties from explosive violence. The suffering of civilians in these countries was compounded by new crises in 2014. Desperate humanitarian emergencies have emerged from the widespread use of explosive weapons in populated areas in Gaza, Ukraine and Nigeria.

One consistent pattern endures throughout the years AOAV has been tracking explosive violence. When these weapons are used in populated areas, they massively elevate the threat to civilians. Even when explosive weapons were targeted at a military objective in 2014, their wide-area effect often meant that bystanders were caught by the blast or hit by projected fragments. The grim reality is that civilians in countries around the world cannot feel safe even in their own homes.

Explosive weapons: Weapons that share common characteristics causing deaths, injuries, and damage by projecting explosive blast, heat and often fragmentation around a point of detonation. These weapons include a variety of munitions such as air-dropped bombs, mortars, improvised explosive devices (IEDs) and artillery shells.

The wide-area effects of some explosive weapons have been of concerning prominence in 2014. Multiple rocket launchers, a devastating feature of the Syrian war in previous years, were used by competing parties to pummel eastern villages and towns in Ukraine. These weapons, like the notorious Grad, launch a barrage of unguided munitions in the space of seconds, covering a wide area.

They clearly have no place being used in places where civilians are concentrated. Yet they, and other equally terrible weaponry, were often the drivers of civilian harm in markets, schools, neighbourhoods and places of worship in 2014.

Crucially, AOAV’s data can only ever show part of the picture of this civilian harm. It tries to capture some of the immediate effects; the deaths and the physical injuries. It cannot touch upon the destruction of homes or a lifetime of possessions. It cannot understand the psychological suffering inflicted, or the life-changing economic deprivation that can follow an explosive. Many more people are affected by explosive weapons than can possibly be hinted at in these casualty figures.

AOAV’s data is not an attempt to capture every casualty of every incident around the world. No claims are made that this sample of data, taken from English-language media reporting, can represent the total impact of explosive weapons on civilians in 2014.

The last twelve months have seen explosive weapons, both manufactured and improvised, bring appalling suffering to civilians across the world. Explosive States shows the urgent need for action to combat and reduce the harm these weapons continue to cause.

It took 40 minutes but it felt a lifetime. I lived all my life in the house my father built. It was our corner of paradise, our ‘swallow’s nest’. Now it is destroyed. I’ve no idea what will come next.

Lyuda, resident of Luhansk, eastern Ukraine, August 2014

Remnant of a direct-fire rocket-assisted projectile outside Fallujah General Hospital in Anbar Province, Iraq, 13 January 2014 (Human Rights Watch, © private)
OVERVIEW

There was a 5% rise in the number of civilian casualties and an 11% rise in incidents involving explosive weapons in 2014 compared to 2013.

- AOAV recorded 41,847 casualties (people who were killed or injured) by explosive weapons in 2,702 incidents in 2014. In 2013, AOAV had recorded 37,809 casualties from 2,430 incidents.
- Civilian casualties rose by 5% in 2014 from 2013. This is the third consecutive year in which recorded civilian casualties of explosive violence have increased.
- Of the casualties recorded in 2014, 78% were civilians (32,662 civilians killed and injured).
- Iraq, Syria, Gaza, Nigeria and Pakistan saw the highest numbers of civilian casualties in 2014.

Key findings

- Over 10,000 civilian casualties from explosive weapons were recorded in Iraq for the second year running.
- Seven countries and territories had over 1,000 civilian deaths and injuries in 2014. In 2013 there were five such countries.
- Gaza, Ukraine and Nigeria saw the biggest increases in civilian casualties from explosive weapons.
- Incidents were recorded in 58 countries and territories around the world.
- Civilian casualties from aerial explosive weapons in 2014 almost tripled from 2013 levels.
- State use of explosive weapons increased significantly in 2014. While responsibility cannot be assigned in many cases, where it was reported states caused 28% of recorded civilian casualties in 2014, up from 11% in 2013.\(^4\)

POPULATED AREAS

- In 2014, 92% of casualties in populated areas were reported as civilians. This is compared to 34% in other areas.
- On average 16 people were killed or injured in every incident of explosive weapon use in populated areas. In other areas in 2014 the average number was four.
- Markets saw 4,245 civilian casualties in 2014, a 15% increase from 2013.
- Child casualties of explosive weapons were reported in 28 countries and territories in 2014.

EXPLOSIVE WEAPON TYPES

Air-launched explosive weapons

- Air-launched explosive weapons were responsible for 18% of recorded civilian casualties (5,968 civilian deaths and injuries).
- Civilian casualties from aerial explosive weapons in 2014 almost tripled from 2013 levels (when 2,012 deaths and injuries were recorded).
- 17 countries and territories saw casualties in 2014. Almost half (43%) of civilian casualties from air-launched explosive weapons were in Syria, and 35% were in Gaza.
- AOAV recorded almost twice as many civilian casualties from barrel bombs in 2014 as in 2013.

Ground-launched explosive weapons

- Ground-launched explosive weapons were responsible for 8,088 civilian casualties in 2014 (25% of the total recorded).
- 90% of casualties were civilians. This is higher than the proportion recorded from IED attacks (85%), and aerial attacks (61%).
- Mortars caused 3,000 civilian casualties in 15 countries. This is a 53% increase from 2013.
- Six civilians were killed on average per attack with multiple rocket launchers in Ukraine.

IEDs

- IEDs were responsible for 17,098 civilian casualties, 52% of the total recorded in 2014.
- 85% of those killed and injured by IEDs were civilians.
- There was a 26% decrease in the number of civilian casualties caused by IEDs compared to 2013 (17,098 down from 22,829).
- Three of the five deadliest IED attacks in 2014 took place in Nigeria.
EXPLOSIVE VIOLENCE IN 2014

78% CIVILIAN CASUALTIES
TOTAL REPORTED CASUALTIES: 41,847
TOTAL CIVILIAN CASUALTIES: 32,662

+5%
INCREASE IN TOTAL CIVILIAN CASUALTIES (KILLED & INJURED)

29
AVERAGE NUMBER OF CIVILIAN CASUALTIES PER DAY

92% CIVILIAN CASUALTIES IN POPULATED AREAS
1,776 ATTACKS IN POPULATED AREAS

34% CIVILIAN CASUALTIES IN NON-POPULATED AREAS
926 ATTACKS IN NON-PopULATED AREAS

TOTAL REPORTED CASUALTIES: 41,847
TOTAL CIVILIAN CASUALTIES: 32,662

101-700 INCIDENTS
51-100 INCIDENTS
11-50 INCIDENTS
2-10 INCIDENTS
1 INCIDENT

58 NUMBER OF COUNTRIES AND TERRITORIES WHERE EXPLOSIVE VIOLENCE WAS REPORTED

Car Bombs
Air-Dropped Bombs
Grad Rockets

23 AVERAGE CIVILIAN CASUALTIES PER INCIDENT BY EXPLOSIVE WEAPON TYPE
16
10

CIVILIAN CASUALTIES BY WEAPON LAUNCH METHOD

52% OF RECORDED CIVILIAN CASUALTIES
25%
18%
5%

IEDs (IMPROVISED EXPLOSIVE DEVICES)
Ground-Launched
Air-Launched
Combinations or Unclear

DATA: AOAV, BASED ON ENGLISH-LANGUAGE MEDIA REPORTS
Key terms

CASUALTY:
Refers to people who were killed or physically injured.5

CIVILIAN/ARMED ACTOR OR SECURITY PERSONNEL:
Casualties were recorded as ‘armed actors’ only if they were reported as being part of the state military, members of non-state armed groups, or security personnel who AOAV considered likely to be armed. This includes police, security guards, intelligence officers, and paramilitary forces. All casualties not reported as belonging to these armed groups were recorded as civilians.

EXPLOSIVE VIOLENCE INCIDENT:
Refers to the use of explosive weapons that caused at least one casualty and took place in a 24-hour period.

POPULATED AREA:
Refers to areas likely to contain concentrations of civilians.6

EXPLOSIVE WEAPONS TYPES:
Weapons were classified by AOAV based on consistently-used language in media reporting. The categories used are deliberately broad in order to capture a range of different weapon types in light of considerable variance in the level of detail provided by news sources.

- **Multiple types:** Used to refer to incidents where a combination of different explosive weapon types were used and it was not possible to attribute casualties to each munition. These can involve any combination of air, ground-launched, or improvised explosive devices. The category most commonly includes attacks where ground-launched weapons such as rockets and artillery shells were fired together.
- **Mine:** Refers to incidents where the explosive weapon was described as a mine or landmine. These include both antipersonnel and anti-vehicle mines.7

AIR-LAUNCHED:

- **Air strike:** The broadest recording category in this grouping. It refers to incidents where explosive weapons were reported as delivered by drones, planes, helicopters, or other aircraft, and the type of munition fired was not specified in the news source.8 Where the munition used is specified in news sources it is recorded as one of the following more specific weapon categories below.
- **Air-dropped bomb:** References to areas being ‘bombed’ by military aircraft were recorded as air-dropped bomb incidents. This can include makeshift manually-deployed bombs, as well as cluster bombs.
- **Missile:** Recorded where explosive missiles delivered by air were reported in a news source, most commonly in drone attacks.9
- **Rocket:** Typically used to refer to unguided missiles, rockets were recorded wherever they are specified in a news source.10

GROUND-LAUNCHED:

- **Shelling (unspecified):** The broadest recording category in this grouping. It refers to reports of the use of explosive shells that do not specify how they were delivered (e.g. mortars, rockets, artillery, or tanks).
- **Artillery shell:** An explosive projectile fired from a gun, cannon, howitzer or recoilless gun/rifle. This refers to medium and large-calibre munitions primarily designed to fire indirectly. Artillery shells were recorded wherever specified in news sources.
- **Missile:** Recorded where reported in news sources, or where a ground-launched missile type was reported in the incident (e.g. SCUD, MANPAD). Ground-launched missiles can range from shoulder-mounted to ballistic missiles.11
- **Rocket:** Recorded where reported in news sources, or where a known ground-launched rocket type was reported in the incident (e.g. Grad, Katyusha).
- **Mortar:** Recorded where reports specified that a mortar bomb was the munition used.12
- **Tank shell:** Explosive shells fired by tanks.
- **Grenade:** Recorded where reports indicate grenades deployed an explosive blast and/or fragmentation. Grenades specified as ‘homemade’ were recorded as IEDs.
- **RPG:** Rocket-propelled grenades. Grenades which are rifle-launched were recorded as grenades rather than RPGs.

IMPROVISED EXPLOSIVE DEVICES (IEDS):

- **Non-specific IED:** The broadest recording category in this grouping. It refers to all IEDs which could not be categorised as either ‘roadside bombs’ or ‘car bombs.’
- **Car bomb:** Incidents where the IED was clearly described as a ‘car bomb,’ or other vehicles like trucks were used. IEDs which were reported as being attached to vehicles, such as a sticky bomb attached to a politician’s car or a remote control IED attached to a bicycle, were recorded as ‘Non-specific IEDs.’
- **Roadside bomb:** IEDs which were either specified as ‘roadside bombs’ or where an IED was reported to be used alongside a road and no further information was provided.
AOAV recorded **41,847 casualties** (people who were killed or injured) by explosive weapons in **2,702 incidents in 2014**.

Of the casualties recorded in 2014, **78%** were civilians (32,662 civilians killed and injured).

This meant there was a **5% increase** in civilian casualties from explosive violence in 2013 (up from 31,076).

**THE CASUALTIES**

In 2014 AOAV recorded an increase in civilian casualties (people killed and physically injured) from explosive violence for the third consecutive year. During 2014, AOAV recorded 32,662 civilian deaths and injuries from the use of explosive weapons around the world. This is an increase of 5% from 2013.

Yet again, civilians made up the majority of casualties from explosive weapon use. Civilians accounted for 78% of all recorded deaths and injuries in 2014.

This is in spite of a sharp increase in reported armed actor casualties in 2014. AOAV recorded a total of 41,847 deaths and injuries from explosive violence, an 11% increase in total casualties from 2013.

Deaths and injuries to armed actors rose by a third in 2014, compared to 34% in other areas.

As in previous years, civilians were most at risk when explosive weapons were used in populated areas. As in 2013, two-thirds of all the incidents that AOAV recorded in 2014 were reported in populated areas (1,776 or 66%). In those attacks, the proportion of casualties who were civilians reached 92%. This is compared to 34% in other areas.

This pattern of harm is consistent with the trends identified in previous years. Civilians are put at grave risk of death and injury when explosive weapons are used in populated areas.

As shown in Figure 1, the reported civilian casualties of explosive weapon use consistently and substantially outnumbered armed actors in 2014.

On average, AOAV recorded 2,721 civilian casualties a month, compared to an average of 765 armed actors. Per day, there were an average of 90 civilian casualties, against 25 armed actors.

Twenty-nine civilians died on average every day from explosive weapon use in 2014.

Figure 1 shows a significant spike in civilian casualties in July 2014. AOAV recorded more than 5,000 civilian casualties and more than 500 incidents that month for the first time since AOAV began recording the impacts of explosive violence in 2011.

The huge civilian toll in July reflects two new fronts of explosive violence that emerged in 2014. On 7 July the Israel Defense Forces (IDF) launched Operation Protective Edge in Gaza, following months of escalating tensions. Half of the global civilian impact of explosive violence in July was recorded in Gaza (52%). The full impact of explosive weapon use in this operation is discussed in further detail overleaf.

Fighting in eastern Ukraine also dramatically worsened in the summer of 2014, and on 17 July the Malaysian Airline Flight 17 (MH17) was shot down by a surface-to-air missile, killing all 298 passengers and crew on board. This attack was the single deadliest incident of explosive violence recorded by AOAV in 2014.

**A GLOBAL PROBLEM**

For the third year running, AOAV recorded a casualty from an explosive weapon attack in 58 different countries and territories (see map on page 13). Casualties from explosive weapons were reported in 15 countries and territories in 2014 that had not been impacted in the previous year, most notably Ukraine.

Despite this, AOAV recorded 6,247 civilian casualties from explosive violence in Syria. As well as the ongoing ferocious conflict between the Syrian state and multiple rebel groups, as in Iraq new and additional threats to civilians in Syria from explosive weapons emerged in 2014.

Figure 2 shows the fifteen countries with the most-reported civilian casualties. Seven countries and territories saw more than 1,000 civilian casualties in 2014. In 2013, there were five such locations.

The table shows massive increases in explosive violence in several countries, specifically Gaza and Ukraine and Nigeria. These three new hotspots of explosive violence are discussed in more detail overleaf.

Several countries dropped from the list of most-affected countries in 2014. The USA, Russia and Turkey all saw dramatic declines in explosive violence. All three countries had previously suffered big IED attacks in 2013, in Boston, Volgograd and Reyhanlı respectively, which accounted for the previous prominence of these countries.

As Figure 2 shows, the two countries with the most civilian casualties in 2014 were again Iraq and Syria.

In Iraq AOAV recorded more than 10,000 civilian deaths and injuries from explosive weapons for the second consecutive year. There was a 16% decrease in the number of civilian casualties that AOAV were able to record in Iraq. This does not mean that Iraq became a less violent place in 2014. On the contrary, security conditions collapsed in several areas of the country. In 2013 AOAV had recorded a dramatic increase in the use of IEDs in populated areas in Iraq. The full severity of this pattern of violence was not fully replicated in 2014, but the rise of Islamic State (referred to throughout in this report as ISIS), the Iraqi government’s military response, and the intervention of international coalition forces have all contributed to Iraq remaining the worst country in the world for explosive violence (see Iraq graphic on page 16).

The civil war in Syria is now in its fifth year. As in recent years, the intensity of the explosive violence in some conflict conditions presents serious challenges to AOAV’s incident-based methodology, and the impact of explosive weapons on the ground in Syria in 2014 could not be fully represented in this dataset.
The United States is appalled by today’s disgraceful shelling outside an UNRWA school in Rafah sheltering some 3,000 displaced persons, in which at least ten more Palestinian civilians were tragically killed [...] We once again stress that Israel must do more to meet its own standards and avoid civilian casualties. U.S. Department of State, 3 August 2014

In the last decade there have periodically been severe outbreaks of explosive violence in hostilities between Israel and Gaza-based militants. The previous outbreak, known as Operation Pillar of Defense, took place in November 2012. AOAV recorded 641 civilian casualties in 2012’s fighting. Almost six times as many civilian casualties were recorded in Gaza in 2014.

Israel also saw a dramatic increase in civilian casualties of explosive violence in 2014, as militants launched rockets and mortars from Gaza. AOAV recorded 133 civilian casualties in Israel during 2014, up from 14 the previous year. Mortar and rocket fire caused 87% of these (six civilian deaths and 113 injuries).

Ukraine

Conflict in eastern Ukraine in 2014 saw the use of heavy explosive weapons in Europe for the first time since AOAV began recording explosive violence in 2011. On 2 May 2014 two Ukrainian airmen were killed in a missile attack over the city of Sloviansk. This attack heralded a new escalation in the crisis of sovereignty in eastern Ukraine.

The use of heavy explosive weapons like large-calibre artillery and multiple rocket launchers in populated areas meant that Ukraine was the seventh most-affected country in 2014.

Much of the bombing and shelling by both sides took place in populated areas (77% of incidents). The city of Donetsk was the focus of the most intense shelling, and 38% of attacks in Ukraine were reported in the city.

Responsibility for many of the attacks was disputed and shrouded in uncertainty, but Ukrainian armed forces were reported to have caused 31% of civilian casualties of explosive violence in 2014, and separatist rebel fighters 24%.

The use of explosive weapons with a wide-area effect in eastern Ukraine included the use of banned cluster munitions.

Ceasefires negotiated in September explicitly referenced heavy weapons in populated areas, in recognition of the severe harm seen in the summer months of fighting in eastern Ukraine.

The ‘Minsk Agreement’ required all weapons with a bigger than 100mm calibre (which includes large mortars, rockets and artillery systems) to be pulled back from residential areas to a distance of their maximum range of fire.

The ceasefire helped to reduce the casualty toll in the final months of 2014, before another escalation of explosive violence in early 2015.

Nigeria

AOAV recorded 2,407 civilian casualties in Nigeria in 2014, as militant group Boko Haram carried out a series of incredibly deadly attacks. This is a huge increase from the 140 that were recorded in 2013. Almost all the casualties in Nigeria were a result of IED use (97%). A third of the casualties were caused by suicide bombings, which hit markets, bus stops and places of worship across the country.

Some of the most destructive attacks globally in 2014 occurred in Nigeria. There was an average of 49 civilian casualties per attack, twice as many as the next country on the list (South Sudan, with 20). The single incident in 2014 in which AOAV recorded the most civilian casualties took place in the Nigerian city of Kano on 26 November. Multiple explosions targeted the city’s central mosque, killing and injuring at least 390 people.

Explosive violence has become a growing threat to civilians in Nigeria as the militant group Boko Haram has increasingly used IEDs to cause death and destruction, primarily in the north of the country. Nigeria had previously suffered a spate of large IED attacks in 2012, killing and injuring more than 1,000 civilians.

The severity of the bombings in 2014 however exceeded previously seen levels in the country, and the pattern of devastating suicide attacks in populated areas has continued into early 2015.

The majority of civilian casualties from explosive violence in Gaza will likely have been the result of heavy explosive weapon use. Although AOAV’s incident-based methodology restricts the ability to reflect the full scale of impacts of explosive weapons in Gaza in 2014, AOAV recorded 1,081 civilian deaths in the operation, as well as 2,669 civilian injuries.

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who is behind the bombings?

As in previous years, many of the explosive violence incidents recorded by AOAV in 2014 went unclaimed and could not be attributed to a specific actor. In 48% of incidents it was unclear from reporting who was responsible.

However, state forces have caused far more civilian casualties through their use of explosive weapons in 2014 than in previous years. Civilian casualties reportedly caused by states almost tripled in 2014. AOAV recorded 9,128 civilian casualties caused by state actors in 2014. This number stood at 3,410 in 2013. State forces had previously been responsible for 11% of civilian casualties in 2013. As Figure 3 shows, that proportion now stands at 28%. This increase is driven primarily by newly-recorded state use in Gaza, Ukraine and Iraq.

Figure 3  Civilian casualties by reported user

More state forces reportedly used explosive weapons in 2014 than in previous years. Twenty-two different state forces used explosive weapons in 2014. This is in addition to three distinct coalitions (NATO ISAF in Afghanistan, AMISOM in Somalia, and the multilateral intervention in Iraq and Syria dubbed ‘Operation Inherent Resolve’). Twenty-one states were active in 2013 and 19 in 2012.

States

<table>
<thead>
<tr>
<th>States</th>
<th>% of incidents</th>
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<tbody>
<tr>
<td>1</td>
<td>Israel 44%</td>
</tr>
<tr>
<td>2</td>
<td>Syria 16%</td>
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<tr>
<td>3</td>
<td>Iraq 10%</td>
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<tr>
<td>4</td>
<td>Pakistan 8%</td>
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<tr>
<td>5</td>
<td>Ukraine 5%</td>
</tr>
<tr>
<td>6</td>
<td>US 3%</td>
</tr>
</tbody>
</table>

The IDF’s operation in Gaza meant that Israel was the individual state actor that caused the most reported civilian casualties in 2014 (3,756 civilian casualties, 41% of those attributable to states).

Collectively, non-state actors caused 9,223 casualties in 2014, of whom 80% were civilians (7,338). As in previous years, the majority of incidents in which the perpetrator was unknown involved the use of IEDs (69%), which makes it probable that non-state actors caused more incidents of explosive violence than can be attributed.

AOAV recorded 51 different named non-state actors using explosive weapons in 21 countries. The most prolific non-state actors in 2014 are listed in Figure 5.

For the second year running, the three non-state groups who were most active were the multiple rebel forces active in Syria, Islamic State in Iraq and Syria (ISIS), and the Taliban in Afghanistan.

Figure 5  Biggest non-state users of explosive weapons in 2014

<table>
<thead>
<tr>
<th>Non-state</th>
<th>% of incidents</th>
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<tbody>
<tr>
<td>1</td>
<td>Syrian rebels 18%</td>
</tr>
<tr>
<td>2</td>
<td>ISIS 12%</td>
</tr>
<tr>
<td>3</td>
<td>Taliban 12%</td>
</tr>
<tr>
<td>4</td>
<td>Hamas-linked militants 10%</td>
</tr>
<tr>
<td>5</td>
<td>Separatist rebels (Ukraine) 4%</td>
</tr>
<tr>
<td>6</td>
<td>Tehrik-i-Taliban Pakistan 4%</td>
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</table>

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State use of explosive weapons caused 13,259 casualties in 2014, of whom 69% (9,128) were reported to be civilians. The most prolific state users of explosive weapons are listed in Figure 4. It should be noted that the impacts of the international coalition aerial bombing campaign in Syria and Iraq were very poorly reported in 2014. This is explored further on page 24.

Figure 4  Biggest state users of explosive weapons in 2014

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</table>

AOAV recorded explosive violence in 58 countries and territories across the world. Explosive violence was particularly intense in several contexts.

Countries and territories with between 100 and 600 incidents

- Iraq 610, Gaza 416, Syria 354, Pakistan 321, Afghanistan 213, Ukraine 155

- India 81, Israel 57, Egypt 50

Countries with between 10 and 50 incidents


Countries with between 2 and 10 incidents

- Bahrain 9, Colombia 8, Tanzania 7, Russia 6, Turkey 6, Central African Republic 6, Cambodia 5, USA 4, China 4, Burma 4, Chile 4, Bosnia and Herzegovina 3, Rwanda 3, Nepal 3, South Sudan 3, Iran 2, Tunisia 2, Azerbaijan 2, Sweden 2, West Bank 2, Bangladesh 2, South Africa 2

Countries and territories with 1 incident

- Algeria 1, Uganda 1, Malta 1, Western Sahara 1, Macedonia 1, Czech Republic 1, Guinea-Bissau 1, Malaysia 1, DR Congo 1, Austria 1, Kazakhstan 1, Armenia 1, Senegal 1, Djibouti 1, Germany 1, Madagascar 1, South Korea 1

Incidents of explosive violence recorded by AOAV in 2014

AOAV recorded explosive violence in 58 countries and territories across the world. Explosive violence was particularly intense in several contexts.

- Israel 44% of incidents
- Syria 16%
- Iraq 10%
- Pakistan 8%
- Ukraine 5%
- US 3%

AOAV recorded 51 different named non-state actors using explosive weapons in 21 countries. The most prolific non-state actors in 2014 are listed in Figure 5.

For the second year running, the three non-state groups who were most active were the multiple rebel forces active in Syria, Islamic State in Iraq and Syria (ISIS), and the Taliban in Afghanistan.
In 2014, 92% of casualties in populated areas were reported as civilians. This is compared to 34% in other areas.

On average 16 people were killed or injured in every incident of explosive weapon use in populated areas. In other areas in 2014 the average number was four.

4,245 civilians were killed or injured in markets; a 15% increase from 2013.

Child casualties were reported in 28 countries and territories in 2014.

**Populated Areas**

As Figure 6 shows, in 2014 when explosive weapons were used in populated areas, 92% of the casualties (people killed and physically injured) were reported to be civilians. This compares to 34% in other areas.

Year on year the use of explosive weapons in populated areas has consistently presented an elevated threat of death and injury to civilians. From 2011, where 84% of casualties in populated areas were civilians to 2012 and 2013, where the figures rose to 91% and 93% respectively, civilians have continually suffered the vast majority of direct harm caused by explosive weapons in populated areas.

This is clearly a predictable pattern of harm. It is therefore preventable, and yet state and non-state actors alike repeatedly deployed explosive weapons in populated areas.

Two-thirds of the total incidents that AOAV recorded in 2014 were in areas reported to be populated (1,776 incidents, or 66%). The percentage of civilian casualties taking place in populated incidents was, however, 88% (29,242 civilian deaths and injuries), demonstrating the heightened impact of explosive weapon incidents in populated areas.

AOAV recorded an average of 16 civilian casualties per incident of explosive weapon use in populated areas, compared to just four in other areas.
Simply targeting armed actors with explosive weapons did not prevent civilians from being killed or injured. Civilians still made up 38% of casualties in incidents where armed actors were the clearly reported targets in 2014. In populated areas this rose to 68%, while in non-populated areas like agricultural and rural land civilians made up only 12% of recorded casualties. The use of explosive weapons that impact on a wide area particularly endangers civilians, even if these weapons are directed at a military objective.

The danger posed to civilians can be clearly seen in the targeting of ISIS. On 2 July, Iraq government helicopters targeted a municipal building in the town of Shirqat that had been taken over by militant fighters. The air strikes hit not only the intended target but also nearby houses. At least 18 civilians were killed, including eight people from a single family. The bombings completely destroyed five civilian homes.41 In this strike no armed actor casualties were reported to have occurred.

It is not only airstrikes targeting non-state armed actors which impacted civilians in 2014. IEDs targeting armed actors in populated areas also pose a threat to civilians. The United Nations in Afghanistan documented a 38% rise in civilian casualties from IED attacks that were targeted at the Afghan National Army.42 On 11 May, five civilians were killed and 40 injured when a Taliban suicide bomber targeted an army vehicle in front of a hospital in Kandahar.43

**WARNING**

A resident of Donetsk, Ukraine looks out of her home which was damaged by an unguided Grad rocket on 19 July (HRW)

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**WARNING**

A resident of Donetsk, Ukraine looks out of her home which was damaged by an unguided Grad rocket on 19 July (HRW)
AOAV records information on the explosive weapon used in any incident. The full list of the recording types used can be found on pages 7-8. These are kept deliberately broad in order to reflect the language commonly used in source reporting (i.e. ‘shelling’, which can cover several types of ground-launched weapons). More specific weapon types are used where such information is available in the source material.

The total number of civilian casualties recorded by AOAV from each explosive weapon type is shown in Figure 8. There are different ways of evaluating the threat that various explosive weapons have had for civilians in 2014. These are explored over the following sections.

In order to better understand how these different explosive weapons have endangered civilians in 2014, AOAV has split them into three different groups based on their launch method.

Air-launched weapons include any explosive munition dropped from an aircraft. If a bomb, missile or rocket is specified in the reporting of an incident (e.g. ‘Hellfire’ missile, FAB aircraft bomb) it is recorded under these more narrow categories.49 Other explosive attacks from the air are coded more generally as ‘Air strike’.

Ground-launched weapons are manufactured conventional ordnance that range from small hand grenades to heavy artillery and multiple rocket launchers. They can be fired from a variety of platforms, but all are launched from surface level.

IEds are improvised explosive devices. These cover any explosive weapon not manufactured through a commercial process, although they can include conventional ordnance. IEDs vary greatly in purpose, size and power, and in their mode of detonation. The broadest recording type is ‘Non-specific IED’, which encompasses anything from a magnetic bomb attached to a car to a vest of explosives detonated in a market square.

In addition to these three categories, AOAV records casualties from attacks where multiple launch methods are used to deploy explosive weapons. AOAV also records reported casualties of landmines. These are excluded from analysis in the following sections.50

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**Figure 8** Civilian casualties by weapon type in 2014

<table>
<thead>
<tr>
<th>Weapon type</th>
<th>Civilian casualties</th>
<th>Average civilian per incident</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEDs</td>
<td>17,098</td>
<td>16</td>
</tr>
<tr>
<td>Car bomb</td>
<td>8,024</td>
<td>23</td>
</tr>
<tr>
<td>Non-specific IEDs</td>
<td>7,357</td>
<td>15</td>
</tr>
<tr>
<td>Roadside bomb</td>
<td>927</td>
<td>4</td>
</tr>
<tr>
<td>Multiple IED types</td>
<td>790</td>
<td>56</td>
</tr>
<tr>
<td>Ground-launched</td>
<td>8,088</td>
<td>10</td>
</tr>
<tr>
<td>Mortar</td>
<td>3,000</td>
<td>12</td>
</tr>
<tr>
<td>Grenade</td>
<td>1,136</td>
<td>6</td>
</tr>
<tr>
<td>Shelling</td>
<td>1,123</td>
<td>9</td>
</tr>
<tr>
<td>Artillery shell</td>
<td>811</td>
<td>12</td>
</tr>
<tr>
<td>Multiple ground-launched types</td>
<td>734</td>
<td>18</td>
</tr>
<tr>
<td>Rocket</td>
<td>608</td>
<td>7</td>
</tr>
<tr>
<td>Missile</td>
<td>341</td>
<td>23</td>
</tr>
<tr>
<td>Tank shell</td>
<td>335</td>
<td>15</td>
</tr>
<tr>
<td>RPG</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Air-launched</td>
<td>5,868</td>
<td>8</td>
</tr>
<tr>
<td>Air strike</td>
<td>3,000</td>
<td>8</td>
</tr>
<tr>
<td>Air-dropped bomb</td>
<td>1,688</td>
<td>16</td>
</tr>
<tr>
<td>Missile</td>
<td>1,061</td>
<td>4</td>
</tr>
<tr>
<td>Multiple air-launched types</td>
<td>73</td>
<td>24</td>
</tr>
<tr>
<td>Rocket</td>
<td>66</td>
<td>6</td>
</tr>
<tr>
<td>Mines</td>
<td>76</td>
<td>2</td>
</tr>
<tr>
<td>Combination or unclear launch methods</td>
<td>1532</td>
<td>29</td>
</tr>
</tbody>
</table>
Air-launched explosive weapons

CASUALTIES
Air-launched explosive weapons include a wide variety of ordnance, from bombs dropped out of planes or helicopters to missiles fired by unmanned drones. There was a significant increase in the use and impact of aerial attacks with explosive weapons in 2014. AOAV recorded 5,868 civilian casualties (deaths and injuries) from 735 incidents where aircraft deployed explosive weapons.

This was a near three-fold increase in civilian casualties from 2013 (up 192%).51

Air-launched explosive weapons caused 18% of civilian casualties recorded in 2014, up from 6% in 2013.

AOAV recorded 9,638 total deaths and injuries from aerial explosive weapons in 2014. Civilians accounted for 61% of these casualties, a similar share to previous years.52

When used in populated areas, the percentage of civilian casualties from weapons launched from the sky increased significantly in 2014. Civilians made up 84% of casualties when aerial explosive weapons were deployed into populated areas. This compares to 20% in other areas.

Almost two-thirds of all incidents involving air-launched explosive weapons were reported in populated areas (63%). This is up notably from 2013 (45%), and from 2012 (47%) and is an important consideration in explaining the tripling of civilian casualties reported globally from aerial attacks with explosive weapons in the last year.

COUNTRIES
The majority of civilian casualties from air-launched explosive weapons in 2014 were recorded in Syria, Gaza, and Iraq respectively (see Figure 9). High-profile aerial campaigns were launched in the summer of 2014 by Israeli forces in Gaza, and by an international coalition of states, led by the US, against ISIS fighters in Iraq and later Syria.

In total AOAV recorded casualties from aerial explosive weapons in 17 countries and territories (14 of which saw civilian casualties).53 This is an increase from 2013, when AOAV recorded 13 affected countries (nine of which saw at least one civilian casualty). Despite the sharp increases in Gaza and Iraq in particular, the country with the most civilian casualties was Syria, where 43% of civilian casualties from air-launched explosive weapons were recorded.

In total AOAV recorded casualties from air-launched explosive weapons in 17 countries and territories (14 of which saw civilian casualties).53 This is an increase from 2013, when AOAV recorded 13 affected countries (nine of which saw at least one civilian casualty). Despite the sharp increases in Gaza and Iraq in particular, the country with the most civilian casualties was Syria, where 43% of civilian casualties from air-launched explosive weapons were recorded.

USERS
Syria (46%), Israel (35%) and Iraq (8%) were the forces responsible for the most civilian casualties recorded from aerial explosive weapons in 2014.

One particularly notable trend in aerial explosive violence in 2014 was the conduct of airstrikes by state forces in territory outside of their own direct sovereignty.

Only in six of the 17 affected countries in 2014 was the governing state the sole recorded actor to have launched explosive weapons from aircraft.54

In Iraq for example civilian casualties were reported from air strikes carried out by the Iraqi armed forces, Syrian jets and coalition actors as part of ‘Operation Inherent Resolve.’ Iran also reportedly bombed targets in the country.55

For the first time since AOAV’s monitor began in 2011, explosive weapons were deployed by aircraft not formally in the control of a state. Multiple groups carried out deadly air strikes in Libya in 2014, including militant groups and armed actors not-affiliated with an internationally-recognised government.56

BARREL BOMBS
In 2014 AOAV recorded a sizeable increase in the use and impact of ‘barrel bombs’. These are improvised weapons comprised of containers filled with fuel, high explosive and chunks of jagged metal. They are usually dropped manually out of helicopters.57

AOAV recorded 1,068 civilian casualties from barrel bombs in 2014.Civilian casualties increased by 8% from 2013 when 571 civilians were reportedly killed and injured.

While almost all barrel bomb attacks took place in Syria, the Iraq government was also reported to have used these weapons in 2014.58 On 11 September for example, hospital workers in the city of Fallujah claimed that 14 barrel bombs were dropped on the city. Twenty-two civilians were reportedly killed in the attack.59 AOAV recorded 126 civilian casualties during 2014 in Iraq from barrel bombs.

It was something really extraordinary. The dust and the smoke. It looked like a nuclear bomb. We ran like hell.
Abu Hammed, Fallujah resident who witnessed a barrel bomb strike, May 201462

However, barrel bombs remain synonymous with Syrian state use, particularly in the northern city of Aleppo. Three-quarters of civilian casualties from barrel bombs in Syria took place in Aleppo governorate. AOAV data suggests an increasing reliance on barrel bombs by Syrian government forces. In 2014, 40% of all aerial attacks recorded in Syria involved reported use of barrel bombs. In 2013, that percentage was 20%.

Figure 9  Countries and territories with the most civilian casualties from aerial explosive weapons in 2014

<table>
<thead>
<tr>
<th>Country</th>
<th>Civilians</th>
<th>Armed actors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syria</td>
<td>2,504</td>
<td>1,068</td>
</tr>
<tr>
<td>Gaza</td>
<td>1,000</td>
<td>432</td>
</tr>
<tr>
<td>Iraq</td>
<td>1,000</td>
<td>538</td>
</tr>
<tr>
<td>Afghanistan</td>
<td>500</td>
<td>224</td>
</tr>
<tr>
<td>Pakistan</td>
<td>500</td>
<td>224</td>
</tr>
</tbody>
</table>

Inherent Resolve. Iran also reportedly bombed targets in the country.
Three-quarters of all civilian casualties from barrel bombs were fatalities (75%), compared to 51% of civilian casualties in other aerial bombing incidents. On average, 17 civilians were killed and injured per barrel bombing strike. This again is higher than for other types of air-dropped bombs, which caused an average of seven civilian casualties per incident. This reflects the wide-area impact of barrel bombs, which are often destructive and powerful weapons, and are completely unguided.61 It also reflects the nature of the incidents themselves. Most barrel bombing attacks in 2014 (85%) took place in populated areas, and often involved a large number of bombs being dropped in a short period of time. On 20 April for example, a Syrian government helicopter dropped four barrel bombs “in close sequence” on a civilian neighbourhood in Aleppo city. Many buildings collapsed and at least 40 people were killed.62

**DRONES**

Drones, or unmanned aerial vehicles (UAVs), were far more frequently reported in 2014 than in previous years. This is because of the extensive use of both armed and unarmed unmanned vehicles by Israeli forces in Gaza.64 Drones were reported in 43% of the aerial attacks that AOAV recorded in Gaza in 2014 (150 out of 347). These attacks were responsible for 29% of civilian casualties that AOAV documented from aerial attacks in Gaza.

On average four civilian casualties were reported per drone attack in Gaza. This was lower than the average for attacks where drones were not reported as responsible (seven). This suggests that the higher average impact of non-drone attacks in Gaza in 2014 was a result of the wider-area effects of the explosive weapons deployed by other types of aircraft.65

Beyond Gaza, reported use of drones seemed to decrease in 2014 from 2013. In 2014 AOAV recorded 47 drone attacks in six countries (Afghanistan, Mali, Pakistan, Somalia, Syria and Yemen). This is a 30% drop in incidents from 2013 levels, when AOAV recorded 67 drone attacks. Casualty numbers fell by 29%, from 472 in 2013 to 335 in 2014, largely due to a five-month lull in strikes in Pakistan.66 As in previous years, the impact of drone strikes on civilians in 2014 was unclear. Just 6% of casualties from drone strikes outside of Gaza were reported to be civilians.

As drone strikes in Pakistan and Yemen largely occur in remote locations where independent access is restricted, the full impact on civilians could be higher than is reported.

**OPERATION INHERENT RESOLVE: AIR STRIKES IN SYRIA AND IRAQ**

Three multinational coalitions of states carried out air strikes in 2014. These were AMISOM (in Somalia), NATO ISAF (in Afghanistan), and ‘Operation Inherent Resolve’, a US-led campaign targeting ISIS fighters in Iraq and Syria.67 At least 12 different states have carried out air strikes as part of this operation.68

The US launched its first air strike in Iraq in 2014 on 8 August.69 A month later, on 22 September, the first coalition air strike was launched in Syria.70 By the end of 2014 a total of 5,886 weapons had been launched in 1,411 sorties.71 AOAV recorded only 26 casualty-causing air strikes resulting from coalition bombing in 2014. These resulted in 541 casualties, 88% (474) of which were fatalities. Civilians made up 19% of reported casualties from these air strikes (83 deaths and 20 injuries), 87% of which were documented in Syria.

In one incident, at least nine civilians, including women and children, were reportedly killed when coalition air strikes targeted militant compounds in Kfar Derian village in Idlib, Syria, on 23 September.72 Seven militant deaths were also reported in the overnight attacks.73 The air strikes triggered secondary explosions, causing residential buildings nearby to collapse.74

Fifteen percent of the incidents recorded by AOAV took place in populated areas.41 While this may signify a marked effort by coalition forces to avoid the use of explosive weapons in populated areas, there were several contexts where this pattern did not bear out in 2014. In the northern flashpoint town of Kobani, on the Turkish border, more than 700 coalition air strikes reportedly destroyed almost 80% of the city’s buildings.75

It’s impossible for us to know definitively if civilians are killed in a strike. We do everything we can to investigate. We don’t do strikes if we think civilians could be there. But we can’t have a perfect picture on what’s going on.


It is extremely difficult to draw effective assessments of the impacts of the international coalition’s use of explosive weapons on civilians in Syria and Iraq in 2014. Security conditions on the ground and a lack of access in areas outside of government control make it challenging for independent agencies to evaluate the impact of air strikes.

Moreover while the number of individual attacks is publicly recorded by the coalition, there is a lack of transparency surrounding the impacts of these strikes in terms of casualty figures.76 Public officials have only acknowledged civilian casualties from one air strike in 2014 to date, while simultaneously claiming that thousands of ISIS fighters have died.77 These claims are convincing without supporting evidence, and there is a duty for coalition actors to fully investigate and acknowledge any civilian harm that may arise from their campaign, and work towards the fulfilment of the rights of any such victims.

Users of explosive weapons should recognise their responsibility to collect and publish data on the impacts of their use on civilians. Accurate and aggregated data is necessary in order to develop effective programs of redress for civilian harm.66
Ground-launched explosive weapons were responsible for 8,088 civilian casualties in 2014 (25% of the total recorded).

90% of casualties were civilians. This is higher than the proportion recorded from IED attacks (85%) or air-launched explosive weapons (61%).

Mortars caused 3,000 civilian casualties in 15 countries. This is a 53% increase from 2013.

Six civilians were killed on average per incident in multiple rocket launcher attacks in Ukraine.

Figure 10 Casualties by ground-launched weapon type

Ground-launched weapons were manufactured conventionally ordnance that range from small hand grenades to heavy artillery and multiple rocket launchers. They can be fired from a variety of platforms, but all are launched from surface level.

In 2014 these weapons were responsible for 25% of all civilian casualties (people killed and physically injured) recorded by AOAV up from 16% in 2013.

In total, these weapons killed and injured 9,026 people, including 8,088 civilians. Civilians made up 90% of the total casualties from ground-launched weapons. This was a higher proportion than the impact of air-launched weapons (61%) or IEDs (85%). The same trend was identified by AOAV in 2013 and suggestive of a particular concern with these weapons and how they are used.

Another consistent pattern from previous years is that ground-launched explosive weapons were more likely than any other launch method to be reported in populated areas. In 2014, 76% of incidents involving ground-launched explosive weapons were reported in populated areas. This compares to 63% of air-launched attacks and 62% of IED incidents.

As in previous years, mortars caused extremely high levels of civilian harm in 2014. In this section AOAV explores some of the most concerning weapon types.

MORTARS

As in previous years, mortars caused extremely high levels of civilian harm in 2014, see Figure 10.

AOAV recorded 3,169 total deaths and injuries from mortar use. Exactly 3,000 of these were civilians. This is a 53% increase in civilian casualties from mortars, and the third year running that an increase was recorded.

Globally, civilians made up 95% of the recorded casualties from mortars in 2014. This was higher than any other explosive weapon type. Mortars can be guided or unguided, but are commonly fired in large numbers into populated areas. In 2014, 74% of incidents of mortar use recorded by AOAV took place in populated areas.

AOAV recorded nine mortar attacks that hit schools in Syria, causing 254 civilian deaths and injuries.

GRAD ROCKETS

AOAV recorded evidence of multiple rocket launchers (MLRS) in use in several countries in 2014. These are weapons which saturate a wide area with salvo of large, often unguided, rockets, as well as sometimes warheads which contain banned cluster munitions.

One such system is the notorious Grad rocket, which was widely used in Eastern Ukraine.

Grad rockets are notoriously imprecise weapons that shouldn’t be used in populated areas. If insurgent and Ukrainian government forces are serious about limiting harm to civilians, they should both immediately stop using these weapons in populated areas.

Ole Solvang, senior emergencies researcher, Human Rights Watch
Grads (‘Hail’ in Russian) can fire up to 40 rockets in 20 seconds. Each individual rocket is nearly three metres long, weighing 66kg. They can be fired as far as 20km, and as the individual munitions are unguided each rocket could land within an approximate rectangle of 54,000 square meters.87

These weapons were used by both Ukraine government forces and separatist insurgents in 2014.88 AOAV recorded 14 separate incidents of MLRS use in Ukraine.89 These attacks killed and injured 279 people.

Of these total casualties, 177 were civilians (57%). Almost half of civilian casualties from MLRS in Ukraine were deaths (78 people, 49%). Globally this percentage was 47% as Figure 17 shows. This fatality percentage was higher than for any other ground-launched explosive weapon type in 2014 other than ground-launched missiles, which was distorted by the attack on Flight MH17 where all 298 passengers and crew were killed by a surface-to-air missile system.

On 12 July, at least 19 Grad rockets rained down on a residential area of the eastern city of Donetsk. An entire family were killed when one of these rockets fell on a civilian home. Human Rights Watch investigators on the ground uncovered impact craters covering an area about 600 meters wide.90

Six civilians were killed per MLRS attack in Ukraine.91 Across all explosive weapon types this average stood at four civilians killed per attack in 2014. The high fatality rate from MLRS is indicative of the wide-area effect of Grad rockets and similarly powerful, imprecise weapons systems.

It was a nightmare. Only five out of fifty homes in my neighbourhood are undamaged [...] I know a couple in their 50s. We used to buy milk from them; they had a cow. A shell fell on their house and they choked to death in the basement.

They were buried in their own vegetable patch. The cemetery was on fire and you could barely poke your nose out of the house so there was no question of going there.

Irina, resident of Krasny Yar in eastern Ukraine, August 201492

ARTILLERY SHELling

Civilian casualties from the use of artillery shells increased to 811 deaths and injuries in 2014 from 131 in 2013 (a 519% increase). Artillery shelling is commonly reported under more general descriptions in media sources, and so the civilian toll from these weapons is assumed to be far higher than recorded.93

Artillery shelling caused civilian casualties in 11 different countries and territories. AOAV recorded the majority of civilian deaths and injuries from artillery in Gaza (43%), Ukraine (26%), and Iraq (13%). Artillery shells are commonly indirect-fire weapons (explosive weapons which can be launched without the user having a clear line of sight to the target).

On 30 July 2014, at least ten 155mm artillery shells landed in and around a UN-run school for girls in the town of Jabaliya in northern Gaza.94 The school was sheltering over 3,000 displaced people and more than a hundred civilians, including children, were killed and injured.95

AOAV has raised concerns with the rules of engagement which regulate how artillery shells are fired in populated areas.96 The United Nations condemned the military’s policy towards Fallujah, and “urged[ed] the Iraqi Armed Forces to stop shelling populated neighbourhoods [...].”97 In September, Iraqi Prime Minister Haidar al-Abadi issued a statement in which he “ordered the Iraqi Air Force to halt the shelling of civilian areas, even in those towns controlled by ISIS.”98

Figh ters are all outside the city, they are not inside. Why is the Iraqi army continuing to shell residential areas? Who would accept that?

Dr Ahmed Ammar, doctor at Fallujah General Hospital99

Iraq government forces also used indirect-fire weapons like artillery during fighting in the country in 2014. In particular, shelling with artillery and mortars was commonly reported in the cities of Fallujah and Ramadi, to the west of the capital Baghdad in Anbar province.

AOAV recorded 849 civilian casualties in Anbar province from ground-launched explosive weapons including artillery. When artillery and mortars were launched into populated areas, all the casualties reported were civilians. Civilians made up only a third of casualties from attacks with the same weapons away from populated areas.96 The United Nations condemned the military’s policy towards Fallujah, and “urged[ed] the Iraqi Armed Forces to stop shelling populated neighbourhoods [...].”97 In September, Iraqi Prime Minister Haidar al-Abadi issued a statement in which he “ordered the Iraqi Air Force to halt the shelling of civilian areas, even in those towns controlled by ISIS.”98

Figure 11 Percentage of civilian casualties from ground-launched weapons were deaths

* Outside of the attack on Flight MH17, 33% of civilian casualties from ground-launched missiles were deaths.
Improvised explosive devices (IEDs)

IEDs were responsible for 17,098 civilian casualties (52% of the total recorded in 2014).

85% of those killed and injured by IEDs were civilians.

There was a 26% decrease in the number of civilian casualties caused by IEDs compared to 2013 (17,098 down from 22,829).

Three of the five deadliest IED attacks in 2014 took place in Nigeria.

Figure 12 shows the five countries which saw the most civilian casualties from IEDs in 2014. While four of the top five are the same as in 2013, Nigeria experienced a massive rise in IED attacks (see page 12).

As in 2013, Iraq had by far the most civilian casualties from IEDs. Almost half of the global civilian casualties from IEDs were recorded in Iraq (48%). Despite this, the total number of recorded civilian casualties from IEDs in Iraq dropped by 32% from 2013. There were also notable decreases in civilian casualties in Pakistan (41%), Lebanon (83%) and India (41%). This is not to say that the spread of IED impacts diminished significantly in 2014. AOAV recorded significant rises not only in Nigeria but also China, Egypt and Yemen among others.

Users

IEDs were exclusively used by non-state actors in 2014. While in the vast majority of attacks (900 of 1100) the perpetrator was not known, where responsibility was reported ISIS (26%), Boko Haram in Nigeria (21%) and the Taliban (13%) were recorded as causing the most civilian casualties of IEDs.
Globally, IED attacks in markets caused the highest number of civilian casualties in 2014, with 109 incidents resulting in 3,304 civilian deaths and injuries. Nine countries had an IED attack in a market but Iraq and Nigeria were most impacted, with 1,250 civilian casualties in Iraq and 738 in Nigeria.

One of the worst IED attacks came on 1 July when a car bomb exploded in a market in the northern Nigerian city of Maiduguri. It killed 56 civilians, most of whom were elderly women selling peanuts and lemon juice, and injured another 68.\textsuperscript{104} Markets are often heavily populated with men, women and children buying food and clothes, and are places which should be safe from direct attack or incidental harm.

While IED attacks in Iraq caused the most civilian casualties in 2014, three of the five deadliest global incidents occurred in Nigeria (see Figure 13). The country was plagued with IED attacks, often attributed to Boko Haram, with civilian casualties increasing from 140 in 2013 to 2,345 in 2014. Nearly all (94%) IED incidents in Nigeria took place in populated areas such as mosques and markets. Attacks taking place in such areas caused an average of 53 civilian casualties per incident.

As Figure 14 shows, IED attacks that involved multiple types and a combination of detonation methods unsurprisingly caused the highest levels of civilian harm.

However these attacks were relatively rare in 2014, and made up less than 1% of IED incidents recorded by AOAV. The next section explores the impacts of other IED detonation types.

### IED DETONATION TYPES

**Timer-operated IEDs**

Timer-operated IEDs are ordinarily detonated by a fuse, clock or a kitchen timer. Left in a populated area, such as a market, they can be particularly dangerous to civilians; they detonate the moment the clock runs out, regardless of who is in their vicinity. While timer-operated IEDs were the least reported mode of IED detonation in 2014, where they were used, an average of 14 civilians were killed or injured in each incident (see Figure 14).\textsuperscript{106} On 16 January nine people were killed when a timer-activated IED exploded in the main preaching centre in the Pakistani city of Peshawar, where 800 people had been praying.\textsuperscript{107}

**Remote-detonated IEDs**

Remote-detonated IEDs can be particularly harmful in populated areas without sufficient control. Command-operated IEDs should technically provide the greatest level of control for a user. However, this is not necessarily an assurance of higher protection standards for civilians from incidental harm. AOAV still recorded an average of six civilian casualties per remote-detonated IED attack in 2014. Even where they are used to target armed actors, civilians were often killed or injured by these IEDs in 2014, either because of their large inherent blast effects, deliberate attempts to target civilians, or the deployment of these weapons in populated areas without sufficient control.

**Victim-activated IEDs**

Victim-activated devices are detonated when a person or animal stands on them, or when they are driven over.\textsuperscript{108} IEDs detonated in this fashion are considered to be de facto antipersonnel mines under the Mine Ban Treaty and are therefore prohibited under international humanitarian law.\textsuperscript{109} Their nature means that they cannot distinguish between armed actors and civilians, and as such are inherently indiscriminate.

For example, two children aged 8 and 10 were killed when they stepped on a roadside bomb in Wardak, Afghanistan on 19 January 2014.\textsuperscript{106} Over a third (39%) of global victim-activated IED incidents in 2014 occurred on roads.

In 2014, victim-activated IEDs resulted in the lowest average civilian casualties per incident, with four civilians being killed or injured in each attack compared to six per each remote detonation, and 14 where a timer was used.

<table>
<thead>
<tr>
<th>Incident</th>
<th>Country</th>
<th>Civilian casualties</th>
</tr>
</thead>
<tbody>
<tr>
<td>28 November</td>
<td>Nigeria</td>
<td>120 killed 270 injured</td>
</tr>
<tr>
<td>20 May</td>
<td>Nigeria</td>
<td>118 killed 45 injured</td>
</tr>
<tr>
<td>15 July</td>
<td>Afghanistan</td>
<td>89 killed 42 injured</td>
</tr>
<tr>
<td>14 April</td>
<td>Nigeria</td>
<td>75 killed 41 injured</td>
</tr>
<tr>
<td>22 August</td>
<td>Iraq</td>
<td>64 killed 60 injured</td>
</tr>
</tbody>
</table>
One concerning development in recent years is the increase in suicide bombings in Africa. While countries like Iraq and Afghanistan consistently see higher numbers of civilian casualties from this detonation method, there has been a steady increase in the use of such IEDs across Africa since the 1980s. According to the Suicide Attack Database, the number of suicide attacks in 2014 in Africa was higher than any previous year before records began in 1981.

AOAV data reveals a similar pattern of concern. Six African countries reported casualties from suicide attacks in 2014; Egypt, Kenya, Libya, Mali, Nigeria and Somalia. Libya, which recorded its first ever suicide bombing in December 2013, saw five suicide attacks in 2014.

For example, at least 58 people were killed and 110 injured in a suicide blast in Lahore, Pakistan, when a bomber targeted a parade near the Indian border. An unexploded jacket discovered at the site was found to contain 13kg of explosive and 2,500 ball-bearings.

In 2014, some of the most destructive suicide attacks were against places of worship, where AOAV recorded an average of 51 civilian casualties per attack. All such incidents occurred in Iraq. On 27 May, 19 people were killed and 34 injured when a bomber detonated explosives inside a Shia mosque. Most of the victims were reported to be merchants and shopkeepers who were praying at the mosque.

Fourteen people were killed and a further 42 injured when a command-operated IED was detonated on a bus in the Philippines. Many of those killed and injured were students.

Suicide bombings

Suicide bombings, including car bombs operated by suicide bombers, are a form of command-operated IEDs. In total AOAV recorded 248 incidents of IEDs being detonated by suicide bombers in 2014.

Suicide attacks killed and injured 5,501 civilians in 2014, with an average of 22 civilian casualties in each bombing. Of the total civilian casualties of IEDs in 2014, 32% were caused by suicide bombings.

AOAV recorded suicide attacks in 17 countries. The countries most affected by suicide attacks in 2014 were: Iraq (2,345 civilian casualties), Afghanistan (805), Nigeria (751), Pakistan (496), and Yemen (359).

This form of IED attack can have a particularly devastating impact when triggered among crowded populated areas. On average, as Figure 14 shows, suicide bombs caused 22 civilians casualties per incident. The toll had the capacity to be far higher. On 2 November for example, at least 58 people were killed and 110 injured in a suicide blast in Lahore, Pakistan, when a bomber targeted a parade near the Indian border.

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Nigeria saw more civilian casualties from suicide bombings than any other country in 2014 bar Iraq and Afghanistan. Half of all incidents in Nigeria (51%) involved a suicide bomber. This can be contrasted with the global statistics, where 23% of IED incidents were suicide attacks. Since 2011, AOAV has recorded 1,915 civilian casualties from 52 incidents of suicide bombings in Nigeria. Almost half the incidents (46%) and 39% of civilian casualties in the country took place in 2014.

This indiscriminate attack in an area crowded with civilians demonstrates a complete disregard for civilian lives. Deliberately and indiscriminately causing death and injury to such a large number of civilians is an atrocity.

Nicholas Haysom, United Nations Assistance Mission to Afghanistan (UNAMA), after a suicide bombing killed 47 civilians at a volleyball game in Paktika, 23 November 2014

More civilian casualties, from more incidents of explosive violence, were recorded in 2014 than in any of the three previous years that AOAV has been monitoring explosive weapon use.

2014 is the third consecutive year in which there has been a reported rise in civilian casualties from explosive weapons, up 5% from 2013 and up 52% since 2011, the year when AOAV first began recording.

Over four years, AOAV has now recorded 144,545 casualties of explosive violence. Three-quarters of all of these were civilians (112,262 deaths and injuries, 78%). Year on year, civilians have borne the burden of reported explosive violence.

Every year, no matter which country tops AOAV’s list, civilians are the most at risk from explosive weapons when they are used in populated areas. This was true again in 2014, when civilians made up 92% of casualties in populated areas, compared to 34% in other areas.

It is clear from this body of data that while the threat to civilians from explosive weapons is not reducing, the most effective measure that could be taken to dramatically improve civilian protection is to change how they are used.

This distinct and predictable pattern of harm is now recognised by more than 40 states around the world who have spoken out against the use of explosive weapons in populated areas. In February 2014, the Economic and Social Council of the General Assembly recommended all Member States to work towards developing practical and political measures to address the humanitarian impact of the use of wide-area effect explosive weapons in populated areas.

The UN has brought together nations and civil society actors aiming to reduce the humanitarian harm that these weapons cause.

In July 2014 the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), together with the Norwegian Ministry of Foreign Affairs, held a meeting of experts on strengthening the protection of civilians from the use of explosive weapons in populated areas.

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Recommendations

- States and other actors should stop using explosive weapons with wide area effects in populated areas.
- Previous AOAV reports have shown the impact that strong, progressive rules of engagement can have in limiting the impact of explosive weapons on civilians. States should review their policies and practices on the use of explosive weapons in populated areas, particularly those which may be expected to impact a wide area.
- States, international organisations and civil society should work together to further a process to develop an international political commitment to reduce the impact on civilians of the use of explosive weapons in populated areas, in line with the recommendations of the UN Security-General.124

Methodology

AOAV uses a methodology adapted from an incident-based methodology used by Landmine Action and Medact in 2009 which in turn was based on the Rob1 Coupland and Nathan Taback model.127 Data on explosive violence incidents is gathered from English-language media reports on the following factors: the date, time, and location of the incident; the number and circumstances of people killed and injured; the weapon type; the reported user and target; the detonation method and whether displacement or damage to the location was reported. AOAV does not attempt to comprehensively capture all incidents of explosive violence around the world but to serve as a useful indicator of the scale and pattern of harm. No claims are made that this data captures every incident or casualty of explosive violence in 2014.

SELECTING INCIDENTS

An RSS reader is used to scan Google News for key terms which relate to explosive weapon use: air strike* artillery* bomb* bombing* cluster bomb* cluster munitions* explosion* explosive* grenade* IED* mine* missile* mortar* rocket* shell.* At least one casualty from an explosive weapon must be reported in order for an incident to be recorded. Incidents with no clear date or which merely give a location as a country are excluded, as are incidents which occur over a period of more than 24 hours (e.g. 150 people killed by shelling over the last week). Casualty numbers must be clearly stated; reports which only describe "several" or "numerous" cannot be recorded. When there are multiple sources for the same incident, those which provide the most detail or most recent casualty information are selected.

SOURCES

AOAV uses a wide range of English-language news sources, many of which are translated by the publisher. In total there were 474 different sources used in 2014, with the ten most used being The Associated Press (501), Reuters (349), Agence France-Press (349), PCHR (344), Xinhua (221), Ma’an News (184), Al Jazeera (139), Press TV (135), The Express Tribune (132), NINA (105).

RECORDDING GUIDELINES

Civilian/armed actor or security personnel: All casualties are assumed to be civilians unless otherwise stated. Casualties are recorded as ‘armed actors’ if they are reported as being members of the military, members of non-state armed groups, or security personnel who are likely to be armed, for example, police, security guards, intelligence officers, and paramilitary forces.

Intended target: The target for an attack is only recorded if one of the three conditions below are met:

- The target is declared by the user.
- It is clearly reported in the source.
- The specific contextual conditions of use clearly indicate a target (e.g. if an IED is attached to the car of a police officer or soldier, ‘State armed’ is recorded as the target).

Populated area: Incidents are designated as occurring in populated areas likely to contain concentrations of civilians if: a) It is stated in the source (e.g. a busy street, a crowded market); b) If an incident occurs in or near a pre-defined location which is likely to contain concentrations of civilians (e.g. commercial premises, entertainment venues, hospitals, hotels, encampments containing IDPs, refugees, nomads), markets, places of worship, public gatherings, public buildings, public transport, schools, town centres, urban residential neighbourhoods, villages/ compounds. This definition of a populated area is based on Protocol III of the 1980 Convention on Certain Conventional Weapons (CCW) which defines concentrations of civilians as: “any concentrations of civilians, be it permanent or temporary, such as in inhabited parts of cities, or inhabited towns or villages, or as in camps or columns of refugees or evacuees, or groups of nomads.”128

User status: Responsibility for the use of explosive weapons is assigned where any of the following conditions are met:

- The group or actor responsible has claimed responsibility.
- The user of the explosive weapon is clearly stated in the report.
- If the user of the explosive weapon has employed technology clearly associated only with that user in the context in question.
On a number of occasions firearms were also reported to be a factor that should be assessed when considering the likelihood that the actual numbers of fatalities of explosives victims was likely to be far higher. 

LIMITATIONS

This methodology is subject to a number of limitations and biases, many relating to the nature of the source material on which it is dependent and the lack of a mechanism to follow up reports with in-depth investigation. It is recognised that there are very different levels of reporting across regions and countries so that under-reporting is likely in some contexts. In addition, only English-language media reports are used, which does not provide a comprehensive picture of definitive explosive weapon use around the world.

The methodology is designed to capture distinct incidents of explosive violence with a clear date and location. In some contexts of explosive violence, particularly during intense armed conflict, casualties cannot be assigned to specific incidents but a total number is reported as the result of a period of days. These casualties cannot be included in the dataset.

As the methodology relies on reports which are filed shortly after an incident took place, there is no mechanism for assessing whether people reported as wounded in the immediate aftermath of an incident subsequently died from their injuries. This is another factor that should be assessed when considering the likelihood that the actual numbers of fatalities of explosive violence are higher than the numbers recorded by AOAV. There is no systematic base-line for determining what constitutes an injury, and AOAV is therefore subject to the assessment of the news source.

On a number of occasions firearms were also reported as having been used alongside explosive weapons. While AOAV always tries to determine the casualties specifically caused by explosive weapons, in these incidents new sources are not always able to clarify which casualties were caused by which weapon type, particularly in incidents that involved large numbers of casualties. It is therefore possible that some casualties in these incidents may not have been caused by explosive weapons.

AOAV is focused on capturing the harm caused by explosive weapons at the time of use. Explosive weapons that fail to explode as intended can linger in the form of explosive remnants of war (ERW) for years, if not decades, to come. In 2014 AOAV recorded 143 civilian casualties from unexploded or abandoned ordnance. These casualties occurred in 21 different countries and territories. The actual number of casualties from ERW is likely to be far higher.

Media reports used by AOAV are a valuable resource for better understanding the scale and patterns of explosive violence use. However, these reports are less helpful for capturing other types of harm known to be characteristic of explosive weapons in populated areas. Damage to infrastructure, the risk of ERW, long-term health effects, and displacement are all aspects of the pattern of harm caused by explosive weapons which are not fully represented in the data set. However, reporting on these effects is often limited, with news sources focusing on the immediate aftermath of an incident. For instance, only 396 incidents out of 2,702 reported damage to a location. Effects which are the result of cumulative levels of explosive violence, for instance communities displaced by heavy shelling or continued insecurity, cannot be fully represented by this research.

If none of these conditions are met then the user is recorded as unknown. Users are recorded as ‘state and non-state’ when both users are identified but it is not possible to establish which one was responsible for the particular incident.


4 AOAV recorded 9,128 civilian casualties caused by state forces out of 32,862 reported in 2014. This is up from 4,987 out of 31,076 reported in 2013.

5 The people injured by explosive weapons may include casualties who were treated for psychological harm. These are rarely clearly described in news sources as distinct from physical wounds, but may have been included where, for example, news sources quote hospital sources and do not provide further detail regarding the types of injuries. AOAV cannot determine what criteria are used by each media source to determine how severe an injury must be to be reported as a casualty, and is therefore subject to the assessment of its sources.

6 The definition of a populated area used by AOAV is based on Protocol III of the 1980 Convention on Certain Conventional Weapons (CCW) which defines concentrations of civilians as: “any concentrations of civilians, be it permanent or temporary, such as in inhabited parts of cities, or inhabited towns or villages, or as in camps or columns of refugees or evacuees, or group of nomads.” The full definition is available at: “Protocol on Prohibitions or Restriictions on the Use of Incendiary Weapons (Protocol III),” CCW, Geneva, 10 October 1980, posted by U.S. Department of State. www.state.gov/documents/organization/195579.pdf (accessed 10 March 2015). AOAV’s guidelines for recording an area as populated are included in the Methodology.

7 The category of ‘mines’ includes both antipersonnel landmines and antivehicle mines. In many incidents, news sources often report what were likely actually victim-activated IEDs as ‘mines’ or in ambiguous language and it is not clear in many incidents whether these incidents involve manufactured or improvised explosive weapons. For detailed information on the incidents of antipersonnel and other types of mine use around the world see International Campaign to Ban Landmines and Anti-Personnel Mines and their Impact on Civilians: An Update (2015), www.icbl.org/our-research-products/lmm14(accessed 14 May 2015).

8 Attacks described as air strikes can combine the firing of explosive missiles, the dropping of aerial bombs, and/or strafing using automatic weapons. There is often a lack of detail in media and official statements as to which specific weapons were used. On this basis incidents reported as air strikes were recorded as the use of an explosive weapon unless it is clear that only non-explosive weapons were used.


10 Rockets, both air and ground-launched, are defined as “munitions consisting of a rocket motor, payload, which may be an explosive warhead or other device. The term often includes both guided and unguided missiles, although it traditionally referred to unguided International Ammunition Technical Guideline, “Glossary of terms, definitions and abbreviations.” United Nations Office for Disarmament Affairs, IATG 01-40/2011(2) 1st Edition (2001-10-01), www.un.org/disarmament/conarms/Ammunition/ IATG/docs/IATG01-40-Glossary_and_Definitions(V1).pdf (accessed 7 March 2014).

11 “Ballistic missiles are powered initially by a rocket, or several rockets in stages. After burn out of the last stage, the missile follows a high-arched, unpowered, parabolic trajectory to the target.” Definition taken from The Center for Arms Control and Non-Proliferation, Fact Sheet: U.S. Ballistic Missile Defense, July 2012, http://armscontrolcenter.org/issues/missiledefense/articles/fact_sheet_us_ballistic_missile_defense(accessed 11 April 2016).


13 AOAV recorded 9,185 armed actor deaths and injuries in 2014, up from 6,733 in 2013.

14 A populated area is one that is likely to contain concentrations of civilians. It is based on Protocol III of the 1980 Convenion on Certain Conventional Weapons (CCW) which defines concentrations of civilians as “any concentrations of civilians, be it permanent or temporary, such as in inhabited parts of cities, or inhabited towns or villages, or as in camps or columns of refugees or evacuees, or group of nomads.” The full definition is available at: “Protocol on Prohibitions or Restriictions on the Use of Incendiary Weapons (Protocol III),” CCW, Geneva, 10 October 1980, posted by U.S. Department of State. www.state.gov/documents/organization/195579.pdf (accessed 10 March 2015). AOAV’s guidelines for recording an area as populated is detailed on pages 36-37.

15 Between 2011-2013, civilians made up 90% of the casualties from explosive weapon use in populated areas, compared to 34% in other areas. More information can be found at “The Impact of Explosive Weapons: three years of data, 2011-2013,” Action on Armed Violence (AOAV), 1 December 2014, https://aoav.org.uk/2014/three-years-explosive-weapons/ (accessed on 36 April 2015).

16 In 2011 AOAV recorded an average of 16 civilian deaths per day; an average of 22 in 2012, and 25 in 2013.


18 These only include casualties from an explosive weapon at its time of use. AOAV also recorded impacts of unexploded ordnance on civilians, and from unattended or mismanaged stockpiles. These casualties are excluded from the primary analysis in this report, but are documented on pages 36-37.
In alphabetical order these were; Austria, Azerbaijan, Burma, Colombia, Egypt, France, India, Iran, Iraq, Israel, Kenya, Libya, Nigeria, Pakistan, Philippines, South Korea, Sudan, Syria, Ukraine, United Arab Emirates, USA and Yemen. 36 U.S. Department of Defense, “Operation Inherent Resolve,” https://defenselink.mil/afprl/20141110/OperationInherentResolve.html (accessed 29 May 2015).


41 Barrel bombs, which are improvised missiles weapons that comprise fuel, explosive content and often metal fragments, are included under the air-dropped bomb recording type. It is often unclear in media reporting whether descripts of ‘barrel bombs’ in fact designate improvised weapons or conventional aircraft bombs with similar wide-area effects.

42 The category of ‘mines’ includes both antipersonnel mines and antitank mines. In many incidents, news sources report that “a group of militants” or “militants” can be attacked, or that “ultras” may be killed in attacks. For detailed information on the incidence of antipersonal and other types of mine use around the world see International Campaign to Ban Landmines and Clusters Munitions Campaign, Landmine Monitor 2014, December and Cluster Munition Monitor 2014, December.


45 Barrel bombs are often cited by activists and witnesses but it is not always clear from these statements and from media reporting which incidents did involve the use of makeshift, as opposed to conventional, bombs.


51 For the sake of framing a debate, AOAV defines a state as full member states of the United Nations.

52 In alphabetical order these states were; Afghanistan, Azerbaijan, Burma, Colombia, Egypt, France, India, Iran, Iraq, Israel, Kenya, Libya, Nigeria, Pakistan, Philippines, South Korea, Sudan, Syria, United Arab Emirates, USA and Yemen.


56 barrel bombs are often cited by activists and witnesses but it is not always clear from these statements and from media reporting which incidents did involve the use of makeshift, as opposed to conventional, bombs.


indicated that drones were active throughout Israel’s operation in Gaza and assisted with almost all air strikes, including those carried out by manned fighter jets. See for example Testimonies 94 in “This Is How We Fight in Gaza: Soldiers’ testimonies and photographs from Operation ‘Protective Edge’ (2014),” Breaking the Silence (hhttps://www.breakingsilence.org/lo/p/protective-edge/). (accessed 18 May 2015).

While drones typically fire missiles, manned aircraft dropped heavy bombs in cities in Gaza that included the Mi-8. The Mi-8 weighs 2000 lb and is said to be able to kill anyone up to 400 yards from the point of detonation. For more information see Robert Perkins, “Under Fire: Israel’s artillery policies scrutinised,” Action on Armed Violence (AAOV), December 2014, http://aaoa.org/wp-content/uploads/2015/03/AAOV-Under-Fire-Israels-artillery-policies-scrutinised.pdf, p. 15.


As Chris Woods noted, what that term ‘airstrike’ can be misleading, however. U.S. defense officials concede that what they report as a single incident might involve the targeting of numerous location at the same time.


24% - Non-state actors caused 27% of incidents with ground-launched weapons. A user could not be determined for the remaining incidents from media reporting.


91 Globally, the average stood at five civilians killed on average per aerial attack, and 10 civilians injured on average.


98 803 out of 804 casualties from ground-launched explosive weapons in populated areas of Arab provinces in Iraq were civil- ians, and only 46 out of 141 casualties in areas not reported as populated.


102 AOAV recorded 12,256 civilian casualties from IEDs in Iraq in 2013.
127 For more information see www.insecurityinsight.org.