

EXPLOSIVE STATES

Monitoring explosive violence
in 2014



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Men run from an explosion after an Israeli air strike hits a house in Gaza City, 23 August 2014. (© Roberto Schmidt/AFP/Getty Images)

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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 2014¹

For four years AOA 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 AOA 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 AOA 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*, AOA 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 AOA 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, AOA'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.³

AOA'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 2014²



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

Key findings

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.

- AOVAV recorded 41,847 casualties (people who were killed or injured) by explosive weapons in 2,702 incidents in 2014. In 2013, AOVAV 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.
- 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 (5,868 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.
- AOVAV recorded almost twice as many civilian casualties from barrel bombs in 2014 as in 2013.

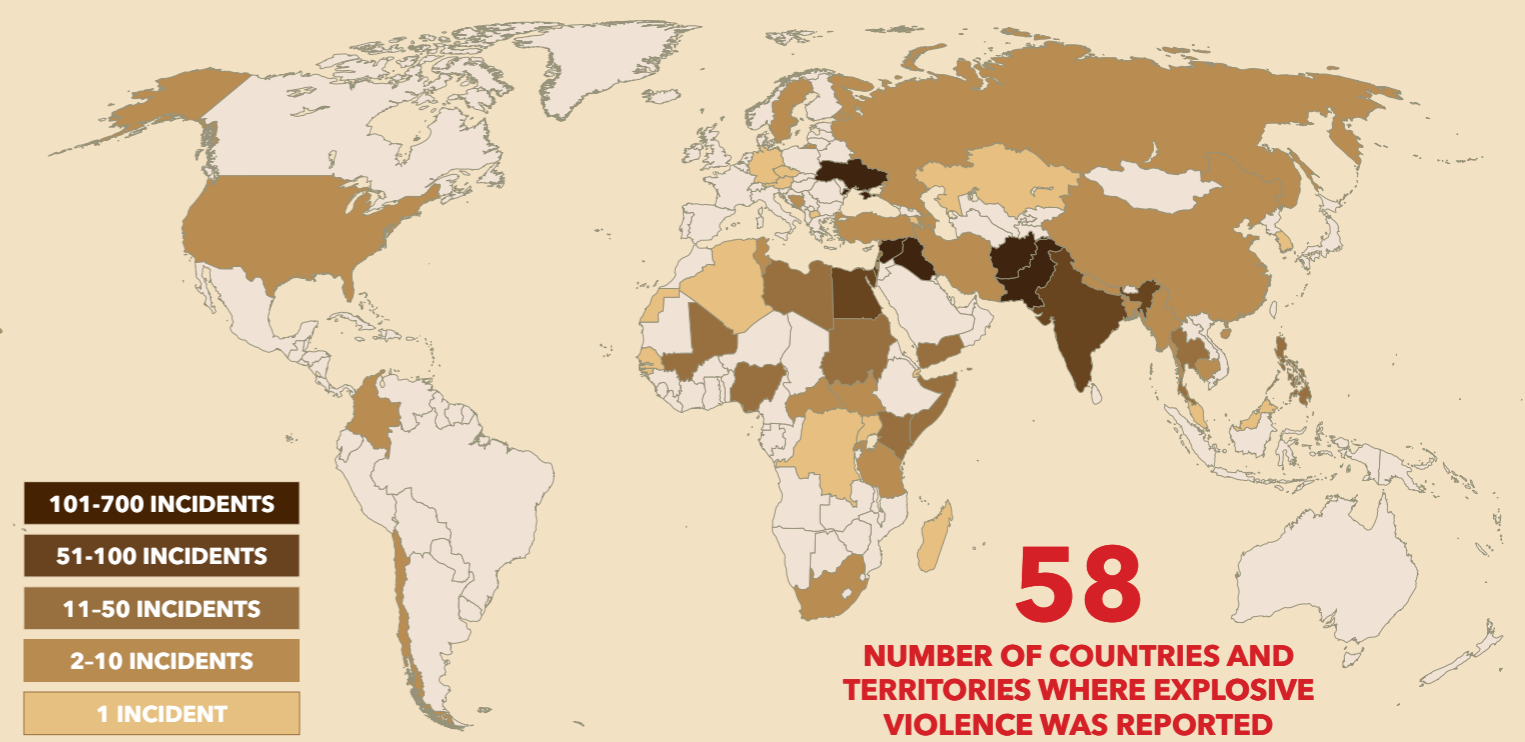
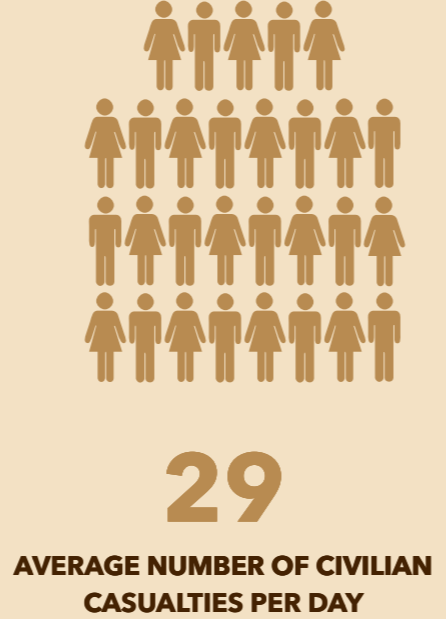
Ground-launched explosive weapons

- 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



TARGETED AREAS



- MARKETS**
- URBAN RESIDENTIAL**
- COMMERCIAL PREMISES**

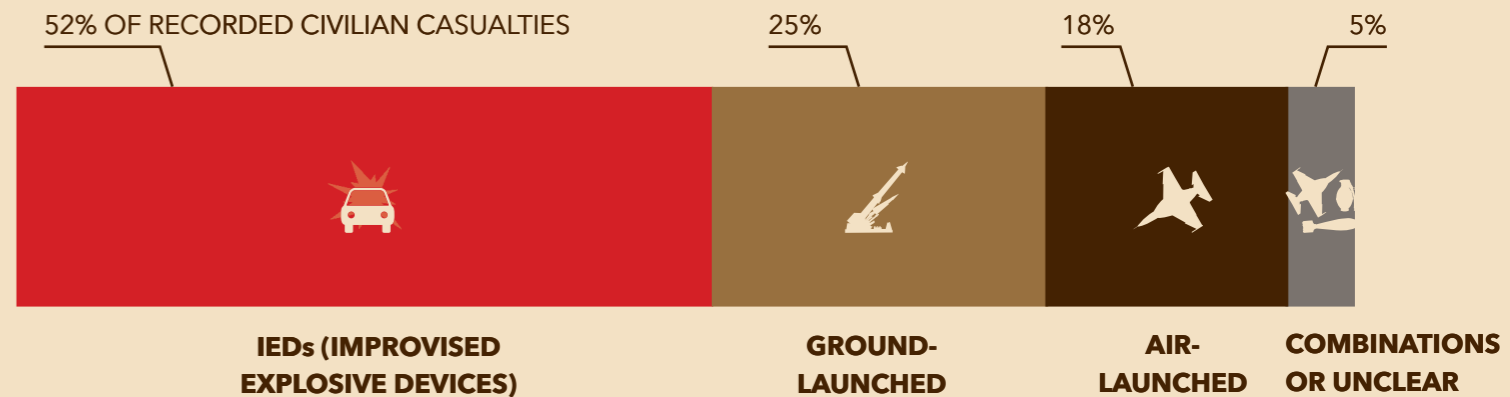
4,245 TOTAL CASUALTIES	98% CIVILIAN CASUALTIES	30 AVERAGE CIVILIAN CASUALTIES PER ATTACK
3,921 TOTAL CASUALTIES	90% CIVILIAN CASUALTIES	9 AVERAGE CIVILIAN CASUALTIES PER ATTACK
1,963 TOTAL CASUALTIES	95% CIVILIAN CASUALTIES	19 AVERAGE CIVILIAN CASUALTIES PER ATTACK

DEADLY WEAPONS

AVERAGE CIVILIAN CASUALTIES PER INCIDENT BY EXPLOSIVE WEAPON TYPE



CIVILIAN CASUALTIES BY WEAPON LAUNCH METHOD



DATA: AOV, 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 AOVAV 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 AOVAV 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 specifically reported as ‘roadside bombs’ or where an IED was reported to be used alongside a road and no further information was provided.

2014 Overview

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 AOA V recorded an increase in civilian casualties (people killed and physically injured) from explosive violence for the third consecutive year. During 2014, AOA V 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. AOA V 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 from 2013.¹³

As in previous years, civilians were most at risk when explosive weapons were used in populated areas.¹⁴ As in 2013, two-thirds of all the incidents that AOA V 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.¹⁵ 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, AOA V 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 2014.¹⁶

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

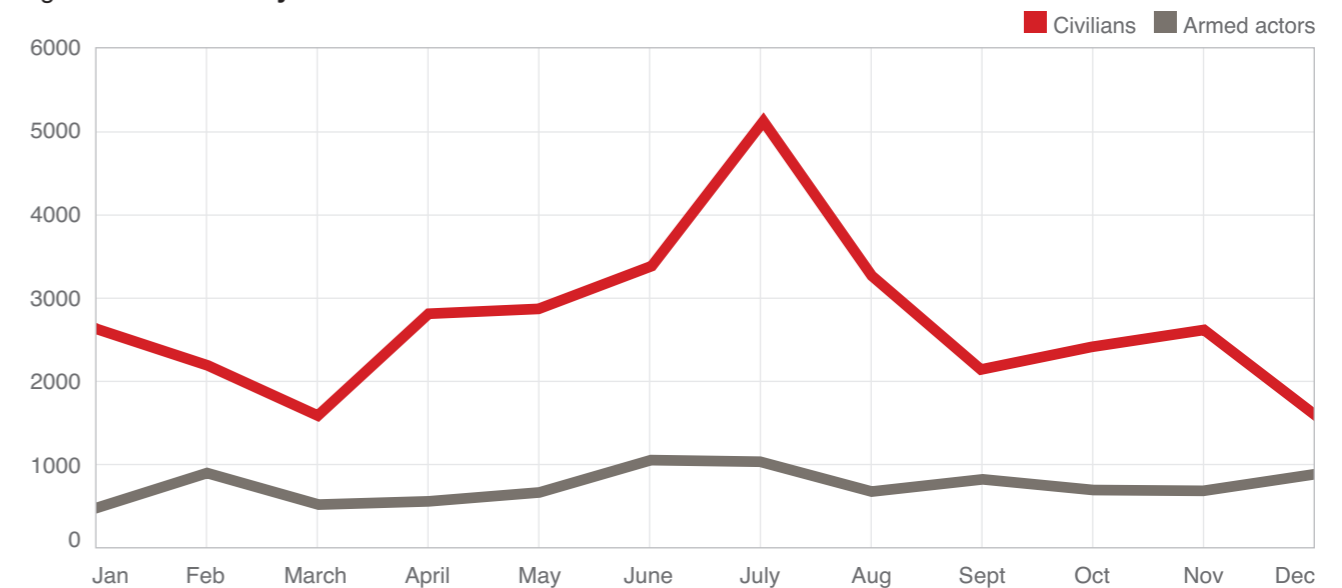
The huge civilian toll in July reflects two new fronts of explosive violence that emerged in 2014. On 7 July the Israel Defense Forces (IDF) launched Operation Protective Edge in Gaza, following months of escalating tensions. Half of the global civilian impact of explosive violence in July was recorded 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 AOA V in 2014.¹⁷

A GLOBAL PROBLEM

For the third year running, AOA V recorded a casualty from an explosive weapon attack in 58 different countries and territories (see map on page 13).¹⁸ 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.¹⁹

Figure 1 Casualties by month in 2014



As *Figure 2* shows, the two countries with the most civilian casualties in 2014 were again Iraq and Syria.²⁰

In Iraq AOA V 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 AOA V 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.²¹ In 2013 AOA V 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 AOA V'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.²²

Despite this, AOA V 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.²³

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 Reyhanli respectively, which accounted for the previous prominence of these countries.²⁴

Figure 2 Most affected countries and territories in 2014

Position	Country/Territory	Civilian casualties	All casualties	Number of recorded incidents	Average civilian casualties per incident	Percentage of casualties who were civilians	Global ranking in 2013
1	Iraq	10,735	13,364	610	18	80%	1
2	Syria	6,247	7,705	354	18	81%	2
3	Gaza	3,813	4,022	416	9	95%	32
4	Nigeria	2,407	2,477	49	49	97%	16
5	Pakistan	2,211	3,903	321	7	57%	3
6	Afghanistan	1,850	2,657	213	9	70%	4
7	Ukraine	1,428	1,848	155	9	77%	New
8	Lebanon	484	607	42	12	80%	5
9	Yemen	482	857	46	10	56%	8
10	India	340	446	81	4	76%	6
11	Libya	306	549	36	9	56%	9
12	Somalia	287	620	44	7	46%	7
13	Thailand	273	300	32	9	91%	15
14	Kenya	259	265	18	14	98%	20
15	Philippines	247	327	42	6	76%	14

HOTSPOTS: 2014'S BIGGEST ESCALATIONS

Gaza

AOAV recorded 3,813 civilian death and injuries from explosive weapons in Gaza in 2014. Almost all of these (98%) occurred between 7 July and 26 August, in what has been termed 'Operation Protective Edge'. The United Nations documented 2,131 total deaths in Gaza, of whom 1,473 were civilians (69%).²⁵

The majority of casualties 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 1,091 civilian deaths in the operation, as well as 2,669 civilian injuries.

The majority of civilian casualties from explosive violence in Gaza in 2014 (53%) were caused by the use of aerial weapons, like air-dropped bombs or missiles.

The remaining 47% were caused either by ground and naval shelling, or by attacks that involved a combination of launch methods.

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 2014²⁶

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 2011.²⁷

On 2 May 2014 two Ukrainian airmen were killed in a missile attack over the city of Sloviansk.²⁸ 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%.²⁹

The use of explosive weapons with a wide-area effect in eastern Ukraine included the use of banned cluster munitions.³⁰

Ceasefire attempts 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.³¹

The ceasefire helped to reduce the casualty toll in the final months of 2014, before another escalation of explosive violence in early 2015.³²

Nina, my godmother, was blown into pieces right in front of the apartment. They were only able to identify her by her dressing gown.

Yevgeny Isayev
Donetsk resident, 8 August 2014³²

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.

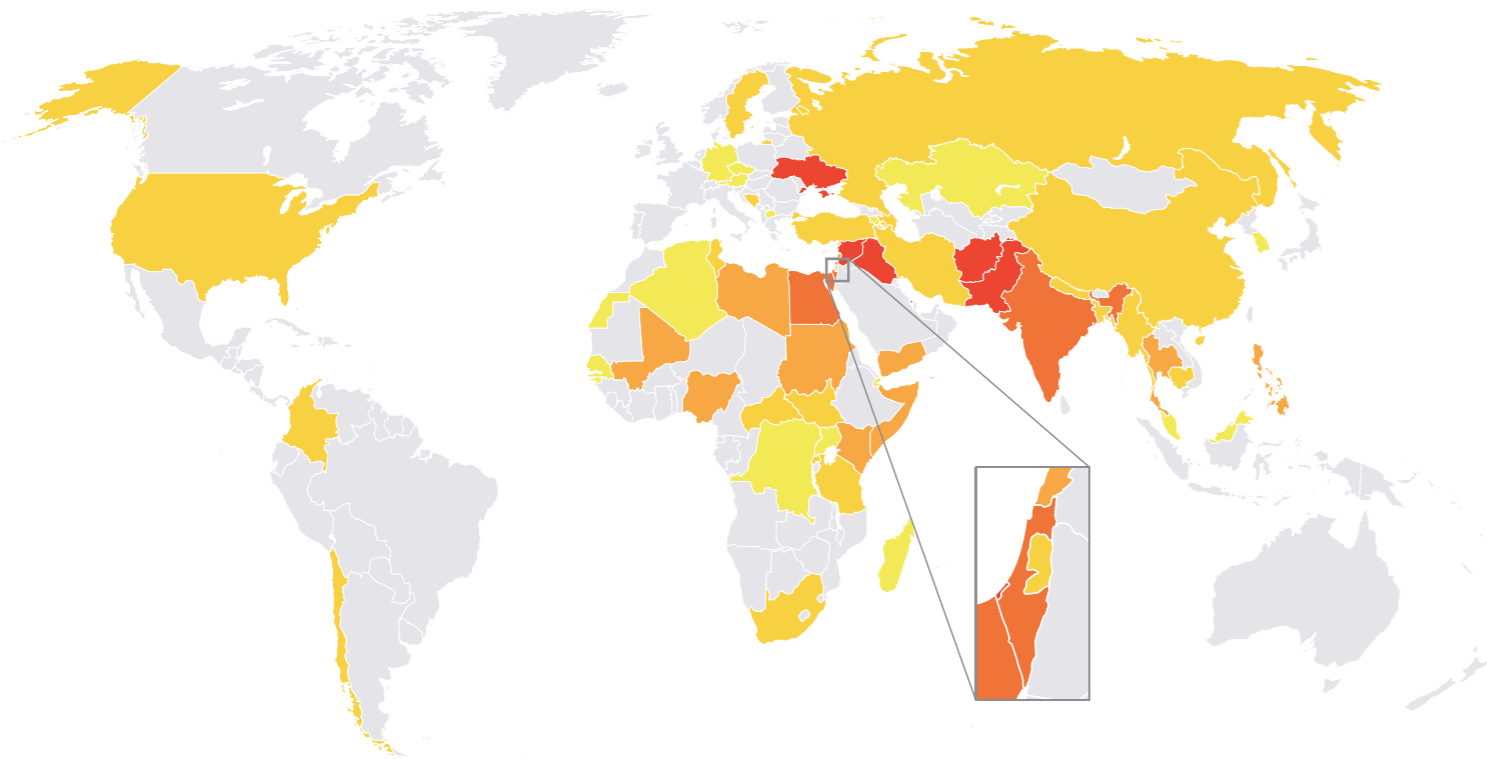
Some of the most destructive attacks globally in 2014 occurred in Nigeria. There was an average of 49 civilian casualties per attack, twice as many as the next country on the list (South Sudan, with 20). The single incident in 2014 in which AOAV recorded the most civilian casualties took place in the Nigerian city of Kano on 28 November. Multiple explosions targeted the city's central mosque, killing and injuring at least 390 people.³³

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.

Incidents of explosive violence recorded by AOVAV in 2014

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
- **Countries with between 50 and 100 incidents**
India 81, Israel 57, Egypt 50
- **Countries with between 10 and 50 incidents**
Nigeria 49, Yemen 46, Somalia 44, Philippines 42, Lebanon 42, Libya 36, Thailand 32, Kenya 18, Mali 17, Sudan 13,
- **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, DRC 1, Austria 1, Kazakhstan 1, Armenia 1, Senegal 1, Djibouti 1, Germany 1, Madagascar 1, South Korea 1

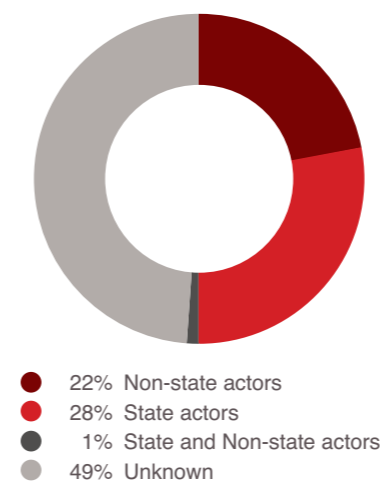
WHO IS BEHIND THE BOMBINGS?

As in previous years, many of the explosive violence incidents recorded by AOVAV 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.³⁴ Civilian casualties reportedly caused by states almost tripled in 2014. AOVAV 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 2014.³⁵ 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').³⁶ Twenty-one states were active in 2013 and 19 in 2012.

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

States		
1	Israel	44% of incidents
2	Syria	16%
3	Iraq	10%
4	Pakistan	8%
5	Ukraine	5%
6	US	3%

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 (68%), 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.³⁷ 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

Non-state		
1	Syrian rebels	18% of incidents
2	ISIS	12%
3	Taliban	12%
4	Hamas-linked militants	10%
5	Separatist rebels (Ukraine)	4%
6	Tehrik-i-Taliban Pakistan	4%

Explosive weapons in 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**.

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.

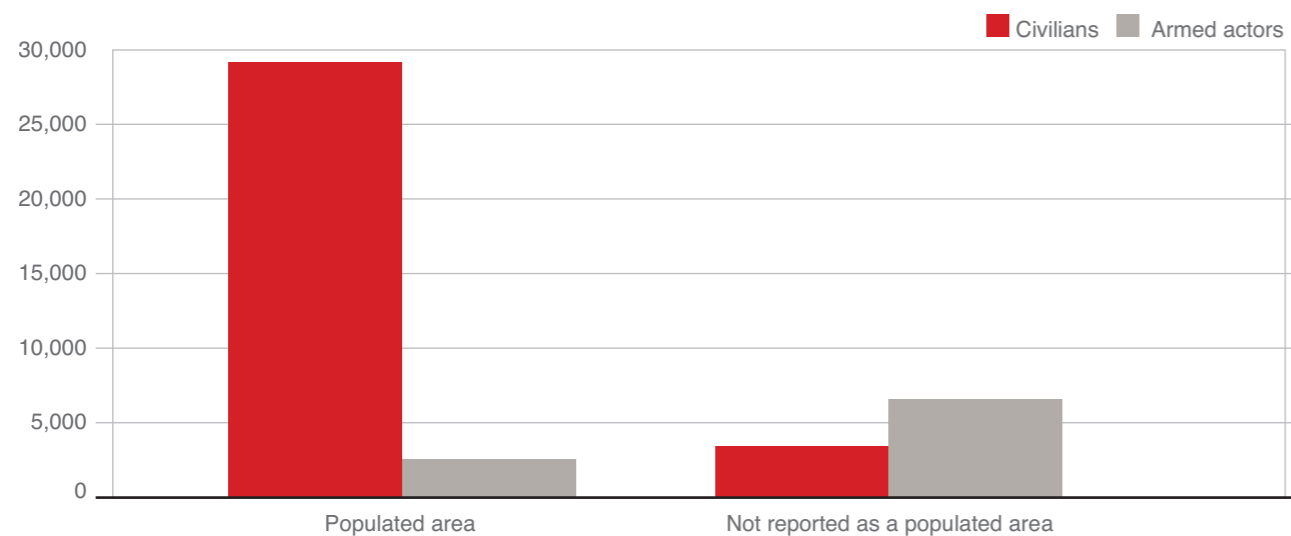
Year on year the use of explosive weapons in populated areas has consistently presented an elevated threat of death and injury to civilians. From 2011, where 84% of casualties in populated areas were civilians to 2012 and 2013, where the figures rose to 91% and 93% respectively, civilians have continually 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 during 2014.

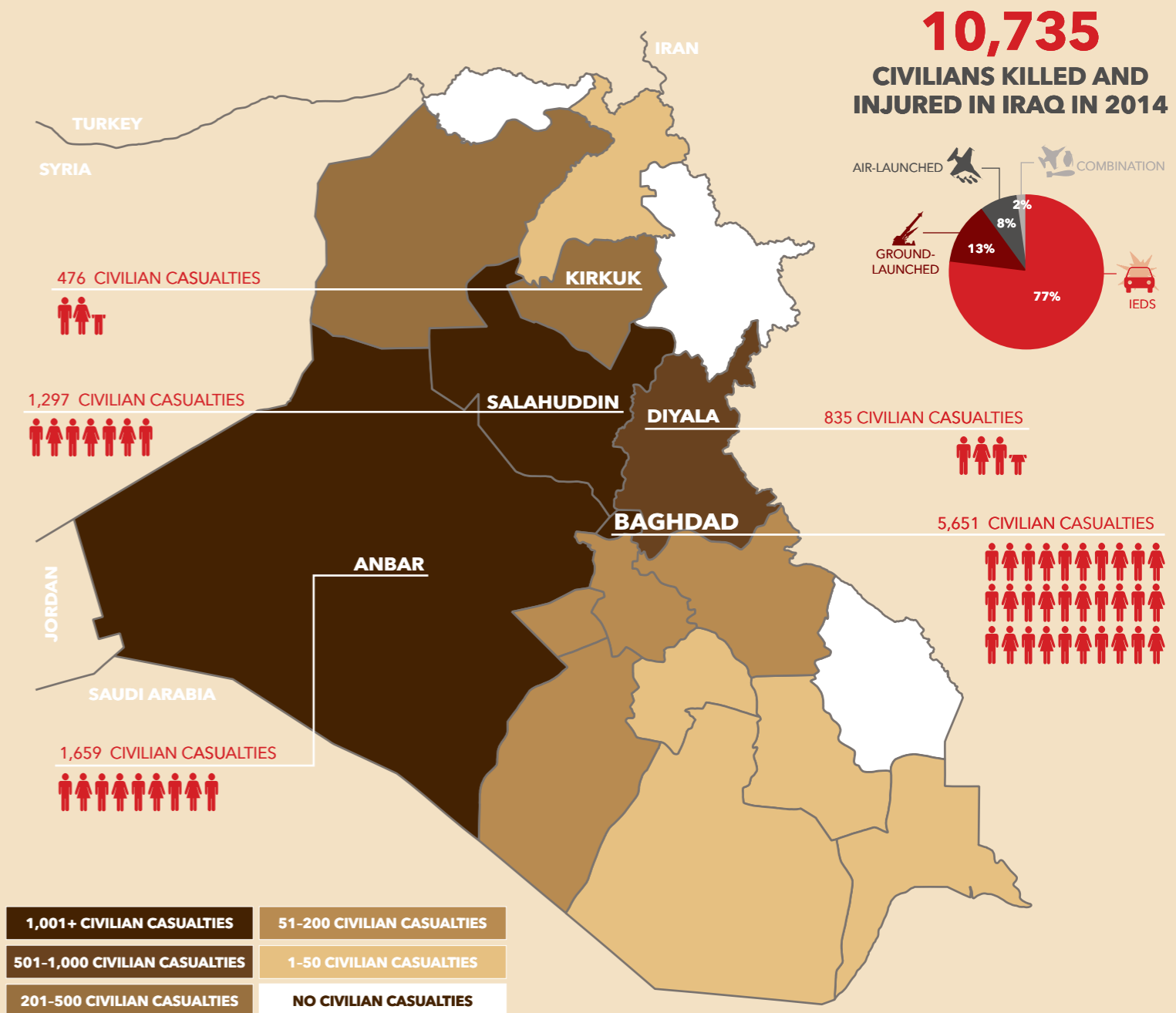
Two-thirds of the total incidents that AOAV recorded in 2014 were in areas reported to be populated (1,776 incidents, or 66%). The percentage of civilian casualties taking place in populated incidents was, however, 88% (29,242 civilian deaths and injuries), demonstrating the heightened impact of explosive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

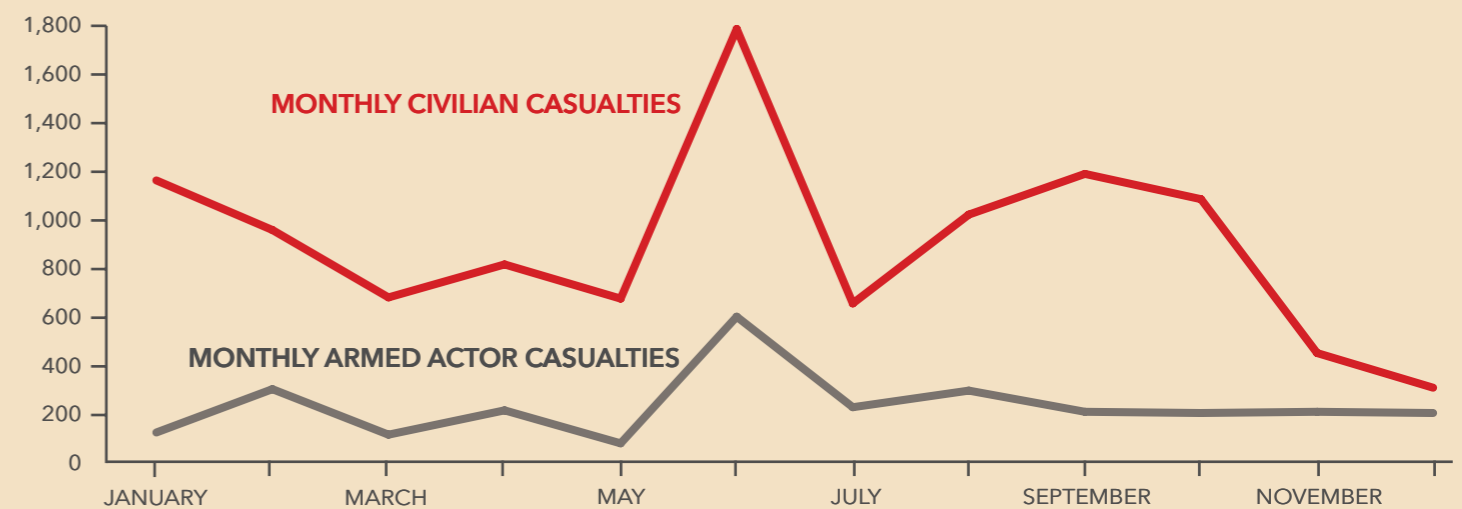
Figure 6 Total casualties by populated area / non-populated area



THE HARDEST-HIT PROVINCES IN IRAQ IN 2014

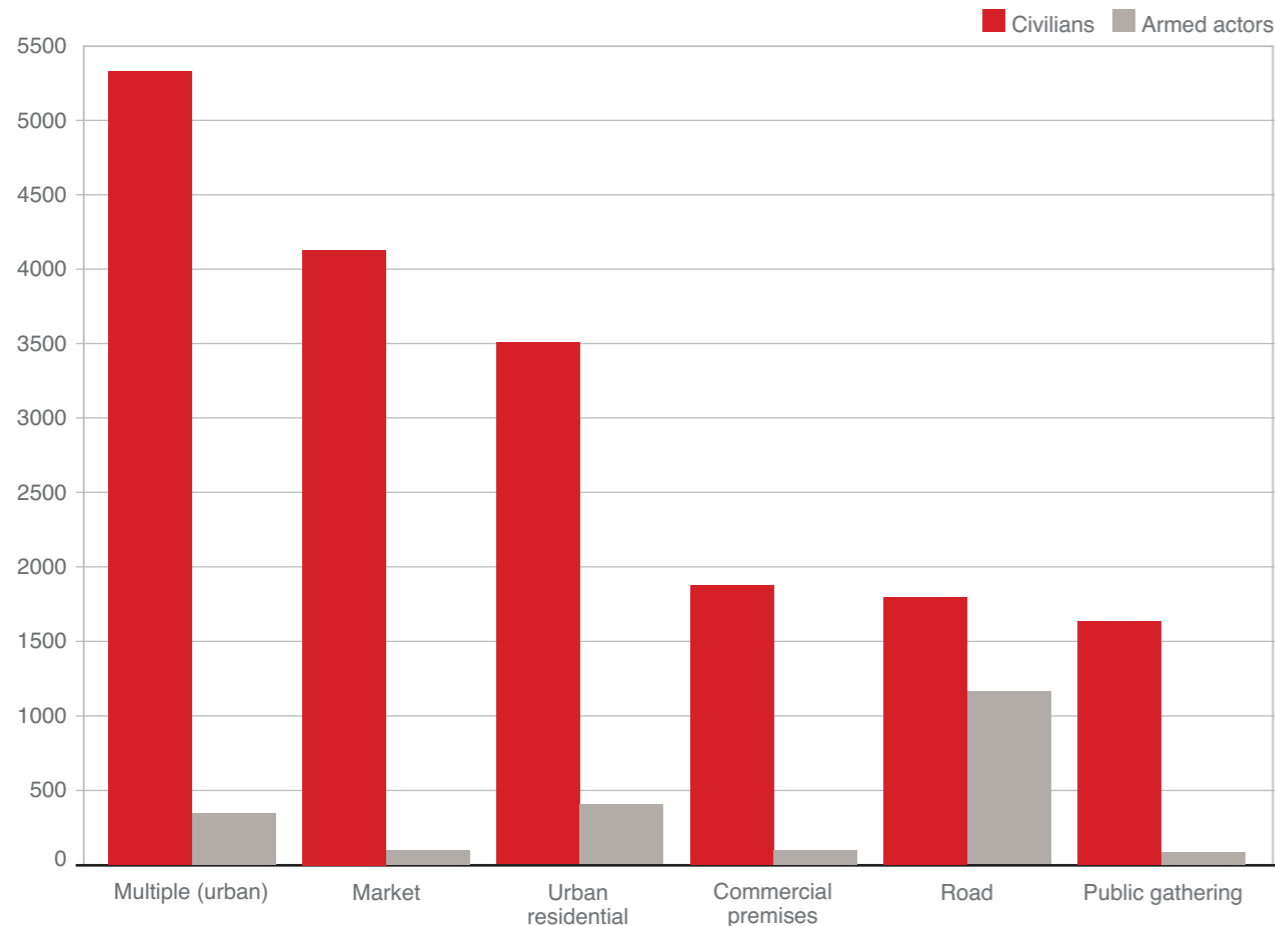


MONTHLY CASUALTIES OF EXPLOSIVE VIOLENCE IN 2014



LOCATIONS

Figure 7 Locations with the most civilian casualties



BOMBED AS THEY SHOP

As Figure 7 shows, aside from incidents where multiple urban locations were attacked, at once, markets were the most dangerous place for civilians to be in 2014. AOV documented 4,147 civilian deaths and injuries in markets, an increase of 15% from 2013. Civilians made up 98% of all the casualties that were reported in markets, souks and bazaars around the world. Markets were bombed in 14 countries. Half the attacks recorded in markets took place in Iraq, where 1,862 civilian casualties were reported.

AOV recorded 138 attacks in markets, and while these attacks accounted for 5% of global incidents of explosive violence, they resulted in a particularly high number of civilian casualties. An average of 30 civilian casualties occurred in each attack on a market, the highest of any location type other than public gatherings (33).

One of the worst market attacks took place on 9 April, when a powerful IED exploded in a crowded market in the Pakistani capital city Islamabad. At least 23 people died and another 120 were wounded. Police said around 2,000 people had been in the fruit and vegetable market at the time of the attack.³⁸

BOMBED IN THEIR HOMES

Civilians were not safe from explosive weapons in their own homes last year. The number of attacks recorded among civilian houses and residential neighbourhoods increased by 94% in 2014.³⁹ Civilian casualties also dramatically increased by 43%, from 2,468 deaths and injuries in 2013 to 3,521. While Gaza, Syria, and Iraq were the most impacted by these incidents, an attack on an urban residential location occurred in 28 countries across the globe.⁴⁰ In contrast to markets, nearly all incidents and casualties in residential neighbourhoods were caused by weapons launched from the air (87%).

TARGETING

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

WOMEN AND CHILDREN

The majority of media sources did not include reporting of the age or gender of any victims in 2014.

Women were reported among the casualties in 15% of incidents of explosive violence.⁴⁴ Adult female casualties were recorded in 32 countries in 2014, with a total of 982 women being reported as killed or injured.⁴⁵

In 2014 AOV recorded 1,942 child casualties from explosive weapons, a 33% increase from 2013. Most of these were simply reported as 'children,' specifying no gender. Of the 1,942 child casualties, 132 were reported to be boys and 148 were girls. The rest were

reported with no gender mentioned. Additionally, often where attacks result in child casualties, reports do not mention a specific number of casualties.⁴⁶ From the sample of incidents where the age of at least one casualty was reported, children made up 17% of explosive violence casualties in 2014.

Of the attacks where a child casualty was reported, 86% (435 of 506 incidents) took place in a populated area. AOV recorded 166 separate incidents where children were killed or injured by explosive weapons in their family homes. Air strikes were particularly dangerous for children, with 44% of all deaths and injuries being reported as caused by air launched explosive weapons.

One such attack came on 29 July in Gaza. At least 18 children died and another four were critically injured when a single 2,000lb aerial bomb fell on an apartment block in the city of Khan Younis. The building, which was completely destroyed, had been home to three families.⁴⁷

AOV recorded child casualties of explosive violence in 28 different countries and territories in 2014. Of the total reported child casualties, 40% were killed or injured in Gaza and 25% in Syria.

Beyond the threat of immediate death and injury, explosive violence has particular long-term impacts on women and children.⁴⁸ More research is needed to understand and respond to these negative effects of explosive weapons.



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



AIR-LAUNCHED EXPLOSIVE WEAPONS

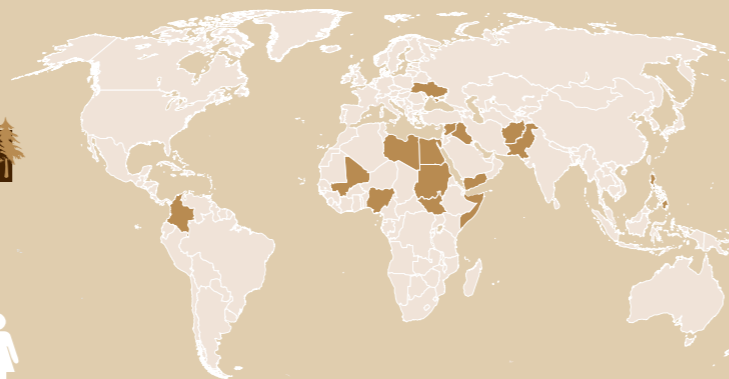
5,868
CIVILIANS KILLED
& INJURED IN 2014



6 IN 10 INCIDENTS OCCURRED IN POPULATED AREAS



84% OF CASUALTIES IN POPULATED AREAS WERE CIVILIANS



INCIDENTS WERE RECORDED IN 17 COUNTRIES AND TERRITORIES IN 2014



GROUND-LAUNCHED EXPLOSIVE WEAPONS

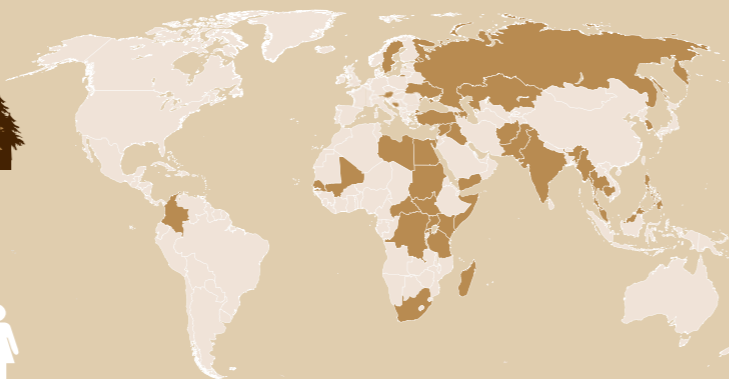
8,088
CIVILIANS KILLED
& INJURED IN 2014



8 IN 10 INCIDENTS OCCURRED IN POPULATED AREAS



90% OF CASUALTIES IN POPULATED AREAS WERE CIVILIANS



INCIDENTS WERE RECORDED IN 40 COUNTRIES AND TERRITORIES IN 2014



IMPROVISED EXPLOSIVE DEVICES (IEDs)

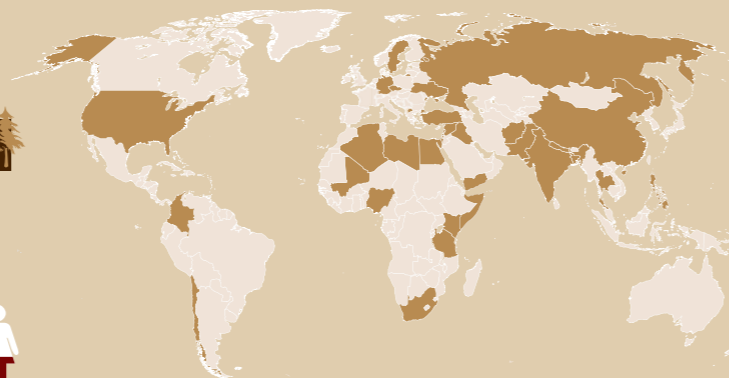
17,098
CIVILIANS KILLED
& INJURED IN 2014



6 IN 10 INCIDENTS OCCURRED IN POPULATED AREAS



93% OF CASUALTIES IN POPULATED AREAS WERE CIVILIANS



INCIDENTS WERE RECORDED IN 36 COUNTRIES AND TERRITORIES IN 2014

Explosive weapons types

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

Figure 8 Civilian casualties by weapon type in 2014

Weapon type	Civilian casualties	Average civilian per incident
IEDs	17,098	16
Car bomb	8,024	23
Non-specific IEDs	7,357	15
Roadside bomb	927	4
Multiple IED types	790	56
Ground-launched	8,088	10
Mortar	3,000	12
Grenade	1,136	6
Shelling	1,123	9
Artillery shell	811	12
Multiple ground-launched types	734	18
Rocket	608	7
Missile	341	23
Tank shell	335	15
RPG	0	0
Air-launched	5,868	8
Air strike	3,000	8
Air-dropped bomb	1,668	16
Missile	1,061	4
Multiple air-launched types	73	24
Rocket	66	6
Mines	76	2
Combination or unclear launch methods	1532	29

Air-launched explosive weapons

Air-launched explosive weapons killed and injured **5,868** civilians in 2014 (18% of all recorded).

Civilian casualties from aerial explosive weapons in 2014 **almost tripled** from 2013 levels.

17 countries and territories saw casualties in 2014. Almost half (43%, 2,504 people) of civilian casualties from air-launched explosive weapons were in Syria, and 35% were in Gaza.

AOAV recorded twice as many casualties from barrel bombs in 2014 as in 2013. Barrel bombs caused an **average of 17** civilian casualties per incident.

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. AOA V 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 launched 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 AOA V 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 AOA V 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 AOA V'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 AOA V 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 87% from 2013 when 571 civilians were reportedly killed and injured.

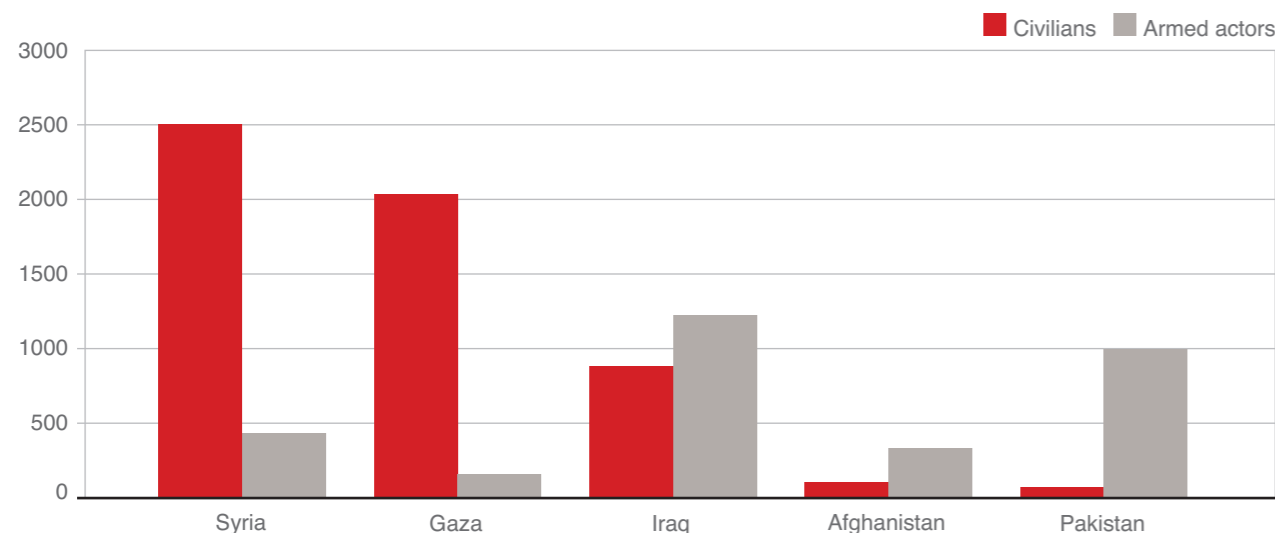
While almost all barrel bomb attacks took place in Syria, the Iraq government was also reported to have used these weapons in 2014.⁵⁸ On 11 September for example, hospital workers in the city of Fallujah claimed that 14 barrel bombs were dropped on the city. Twenty-two civilians were reportedly killed in the attack.⁵⁹ AOA V 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 Hamed,
Fallujah resident who witnessed a barrel bomb strike, May 2014⁶⁰

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. AOA V 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



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

Barrel bombs are highly imprecise, with an extensive impact zone. Flying at high altitudes further reduces their accuracy.

The use of barrel bombs in that manner is indiscriminate [...] The use of barrel bombs [in densely populated areas] amounts to area bombardment, prohibited under international law as a tactic that spreads terror among the civilian population.

**UN Human Rights Council,
13 August 2014⁶³**

DRONES

Drones, or unmanned aerial vehicles (UAV), 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 AOA V recorded in Gaza in 2014 (150 out of 347). These attacks were responsible for 29% of civilian casualties that AOA V 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 AOA V 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 AOA V recorded 67 drone strikes. 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

AOA V 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 AOA V took place in populated areas.⁶⁵ 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.⁷⁶

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.

**Anonymous U.S. Defense Official,
January 2015⁸¹**

Please, please tell them to focus their strikes on their [ISIS] bases, not to hit civilian areas.

**Syrian resident of Tal Abyad,
September 2014⁷⁷**

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.⁷⁸

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.⁷⁹

These claims are unconvincing 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 disaggregated data is necessary in order to develop effective programs of redress for civilian harm.⁸⁰

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%) 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.

CASUALTIES

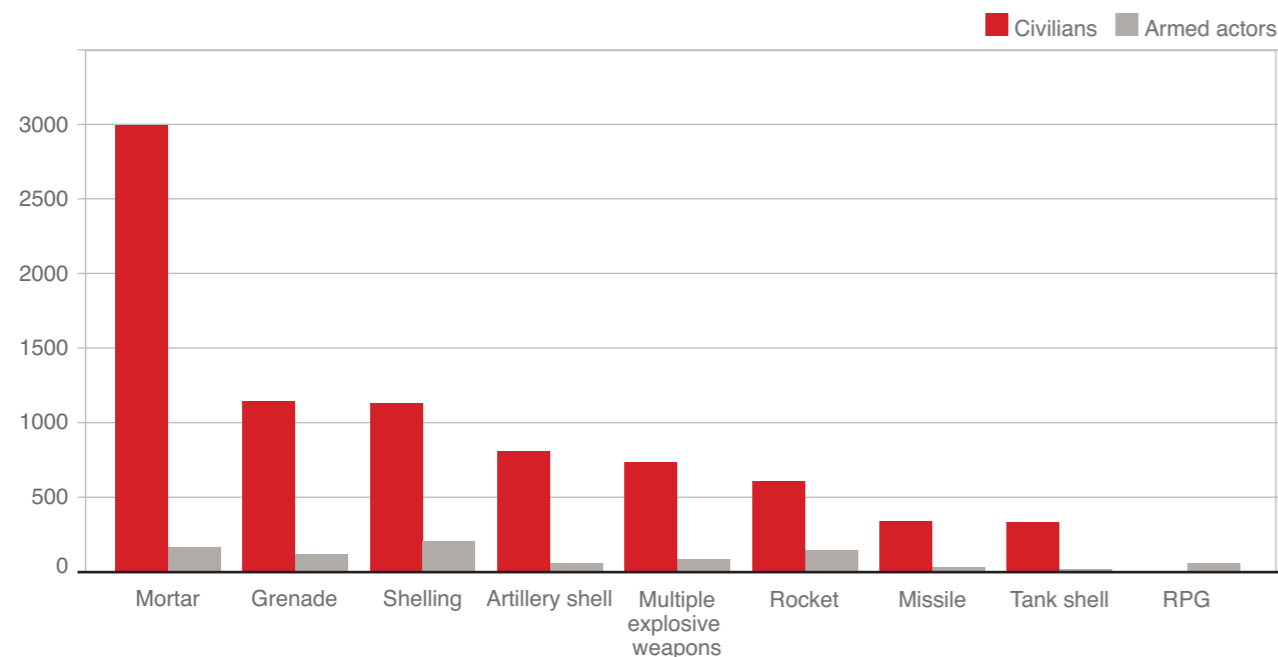
Ground-launched weapons are manufactured conventional ordnance that range from small hand grenades to heavy artillery and multiple rocket launchers. They can be fired from a variety of platforms, but all are launched from surface level.

In 2014 these weapons were responsible for 25% of all civilian casualties (people killed and physically injured) recorded by AOVAV, 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 AOVAV 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.

Figure 10 Casualties by ground-launched weapon type



COUNTRIES

AOAV recorded casualties from ground-launched explosive weapons in 40 countries and territories in 2014. Almost a third (31%) of civilian casualties from these weapons were recorded in Syria. Other countries that saw a high percentage of civilian casualties were Ukraine (17%) and Iraq (17%).

Ground-launched explosive weapons were widely used by both state forces and non-state actors in 2014. As in 2013, a quarter of all attacks with these weapons were attributed in media reporting to state actors.⁸²

Figure 10 illustrates the range of ground-launched weapon types that AOVAV tracks and their respective impact on civilians in 2014. With the exception of rocket-propelled grenades (RPGs), all ground-launched types had a markedly higher impact on civilians in 2014. In this section AOVAV 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 AOVAV took place in populated areas.

Mortars caused casualties in 15 different countries and territories, in 2014 including Iraq, Ukraine, Afghanistan and India.

As in 2013, the majority of civilian casualties from mortar use were in Syria (64%). AOVAV recorded 1,910 civilian casualties from 115 mortar incidents in Syria in 2014. The deadliest mortar attack in Syria came on 22 May. Thirty-nine people were killed and 205 wounded when a mortar round hit an electoral rally event for President Bashar al-Assad.⁸³ The attack was condemned by UN Secretary-General Ban Ki-moon.⁸⁴

Non-state actors were regularly reported to use mortars in attacks across Syria. A third of civilian casualties from mortars in the country came from rebel groups.

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.⁸⁵ 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 Watch⁸⁶

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 metres.⁸⁷

These weapons were used by both Ukraine government forces and separatist insurgents in 2014.⁸⁸ AOVAV 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 11 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

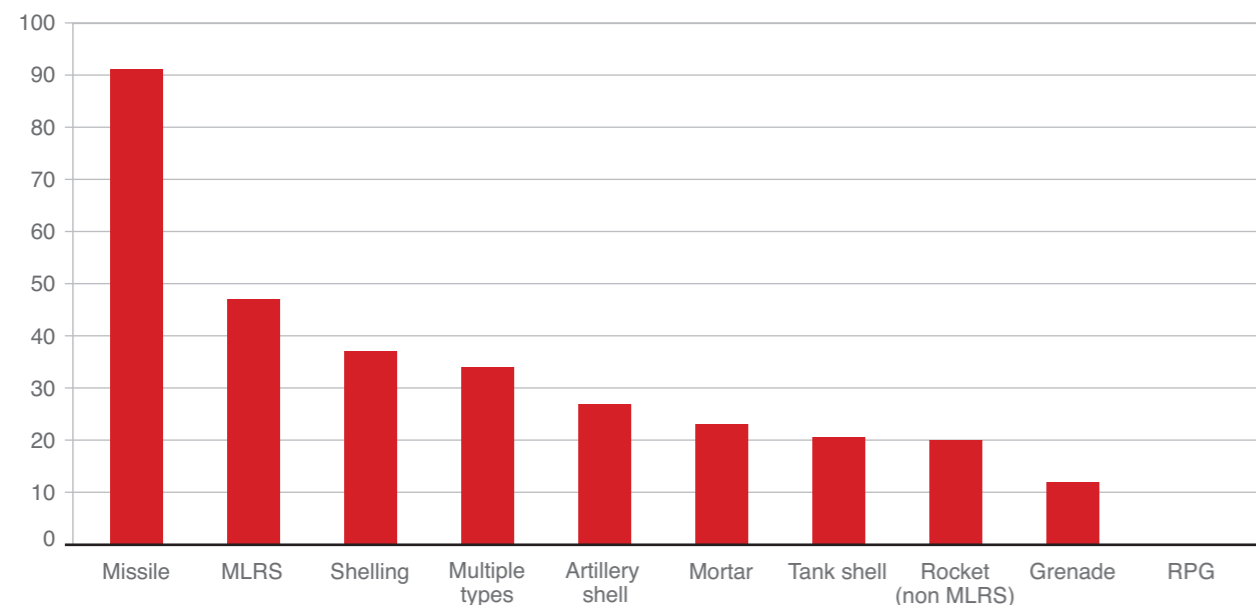
Six civilians were killed per MLRS attack in Ukraine.⁹¹ Across all explosive weapon types this average stood at four civilians killed per attack in 2014. The high fatality rate from MLRS is indicative of the wide-area effect of Grad rockets and similarly powerful, imprecise weapons systems.

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

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.

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. AOVAV 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

AOVAV has raised concerns with the rules of engagement which regulate how artillery shells are fired in or near densely-populated areas.⁹⁶ During Operation Protective Edge, Israel's Artillery Corps launched 19,000 high-explosive artillery shells into Gaza.⁹⁷

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.

AOVAV 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.⁹⁸ The United Nations condemned the military's policy towards Fallujah, and "urge[d] the Iraqi Armed Forces to stop shelling populated neighbourhoods [...]".⁹⁹ 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."¹⁰⁰

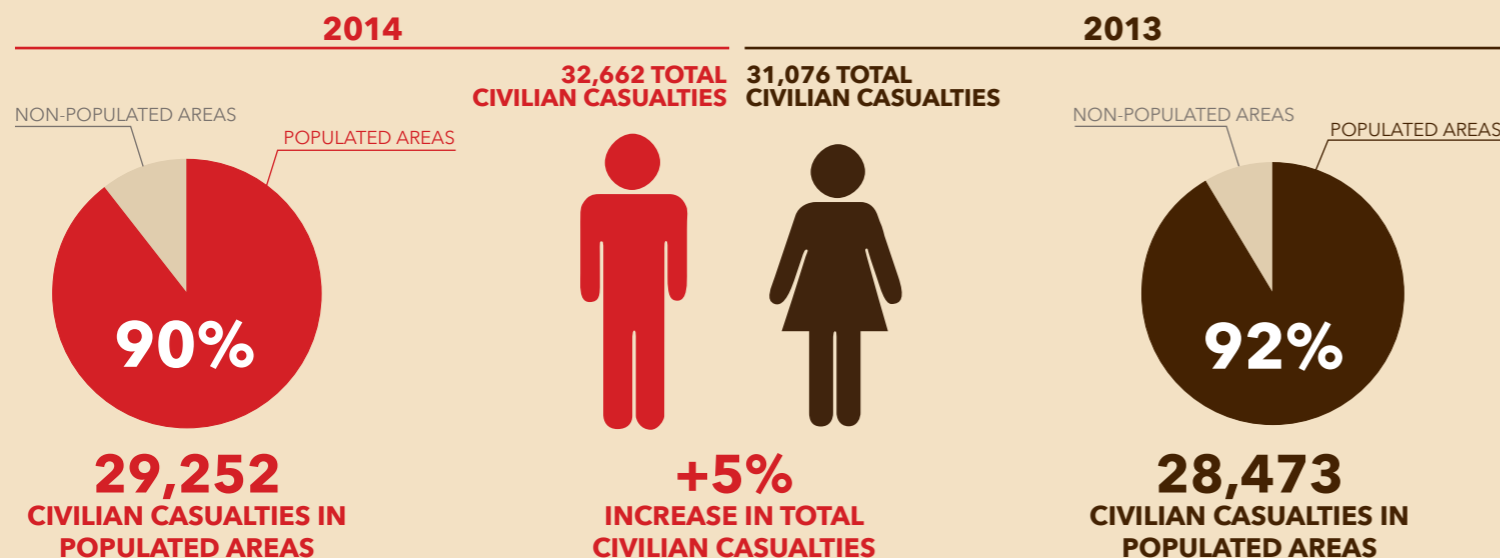
Fighters are all outside the city, they are not inside. Why is the Iraqi army continuing to shell residential areas? Who would accept that?

Dr Ahmed Ammar,
doctor at Fallujah General Hospital¹⁰¹



Destroyed houses in Beit Hanoun, northern Gaza, after the end of Operation Protective Edge (Muhammad Sabah, B'Tselem)

CIVILIANS KILLED & INJURED: 2014 v 2013



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**.

CASUALTIES

Even with a surge in state use of explosive weapons the majority of all explosive weapon casualties (people killed and physically injured) recorded by AOVAV in 2014 were caused by improvised explosive devices (IEDs) like roadside bombs and car bombs. AOVAV recorded 20,645 casualties, of which 17,098 (85%) were civilians.

IEDs caused death and destruction globally, particularly when they were used in populated areas. Where this was the case (in 62% of all IED incidents), civilians made up 93% of the reported casualties, with an average of 22 civilians being killed or injured in each IED attack in a populated area. In contrast, where IED attacks occurred in non-populated areas in 2014 the percentage of civilian casualties fell to 47%.

COUNTRIES

IEDs resulted in at least one casualty in 36 different countries and territories, including countries facing such diverse security threats as Kenya, Thailand and Libya.

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 2013.¹⁰² There were also notable decreases in civilian casualties in Pakistan (41%), Lebanon (63%) and India (41%). This is not to say that the spread of IED impacts diminished significantly in 2014. AOVAV 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 2014.¹⁰³ 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.

THE MOST DANGEROUS PLACES TO BE A CIVILIAN

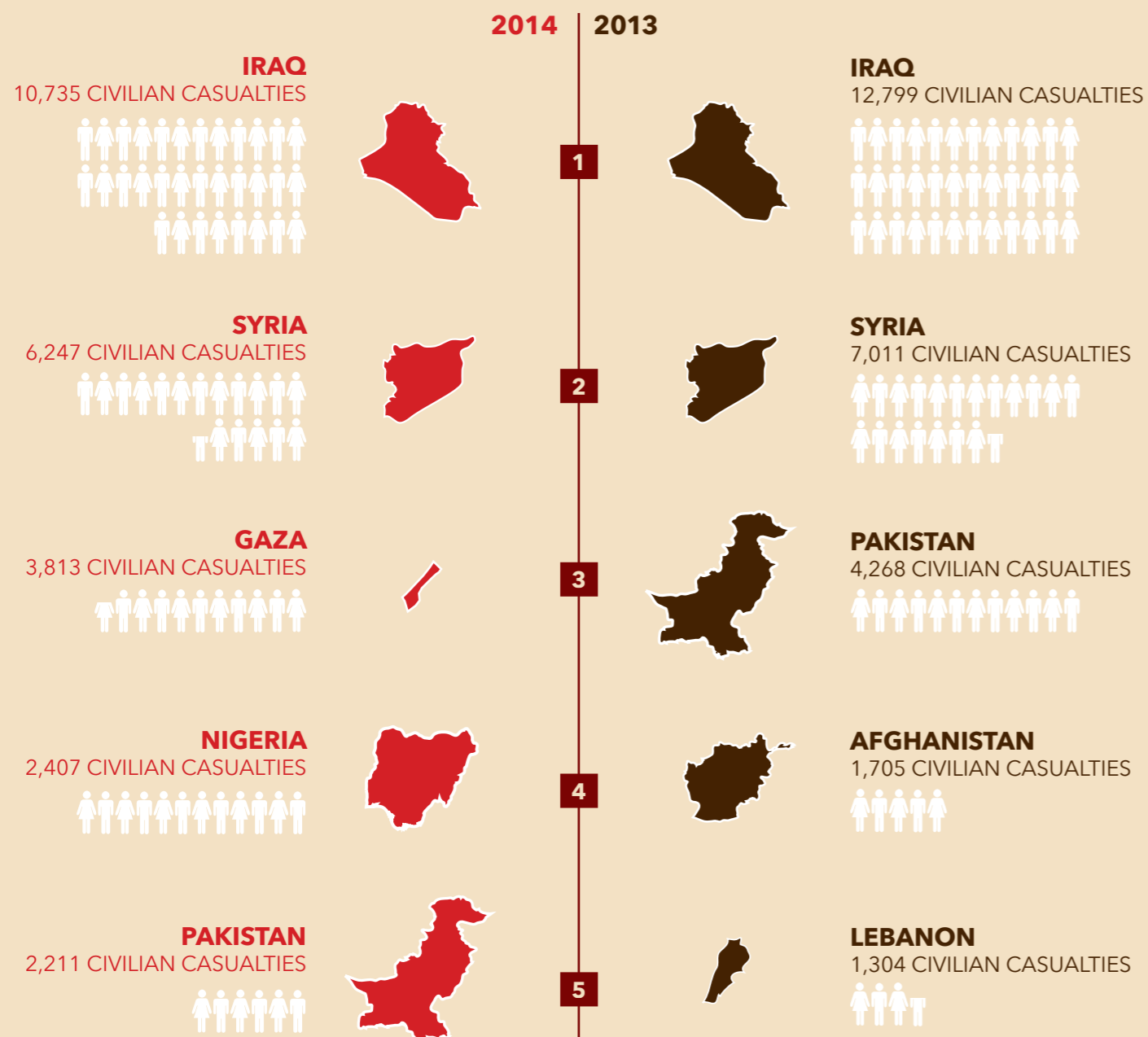
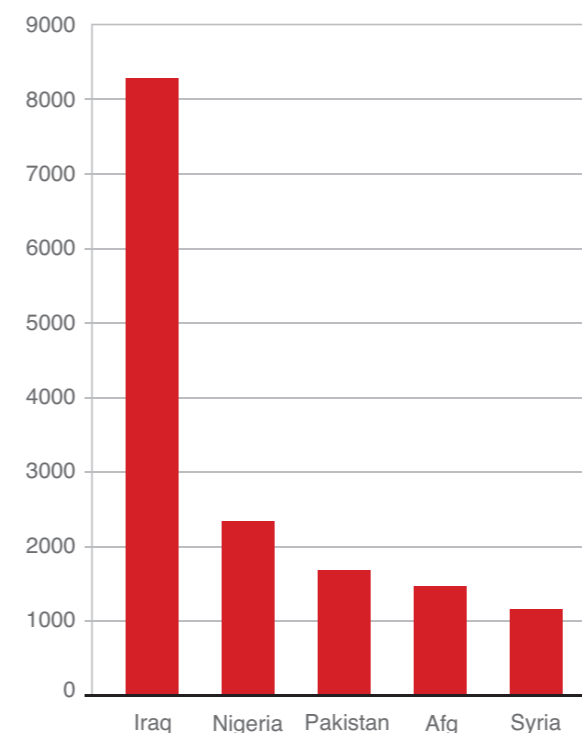


Figure 12 Top five countries for civilian IED casualties in 2014



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 68.¹⁰⁴ 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.

Figure 13 The deadliest IED incidents in 2014

Incident	Country	Civilian casualties
28 November Suicide bombers attack a mosque in Kano.	Nigeria	120 killed 270 injured
20 May Two bombs in a business park in Jos housing a hospital, shops and offices.	Nigeria	118 killed 45 injured
15 July Suicide bomber detonates explosives in a car at a market near a mosque in Paktika.	Afghanistan	89 killed 42 injured
14 April Boko Haram attack a busy bus station during rush hour.	Nigeria	75 killed 41 injured
22 August Suicide bombing at a mosque during Friday prayers.	Iraq	64 killed 60 injured

I was about 6-7 meters from the second explosion. All I could see was smoke and fire. I have shrapnel injuries all over my body. Some are serious...I saw limbs from other victims...some people even 70 meters away were injured.

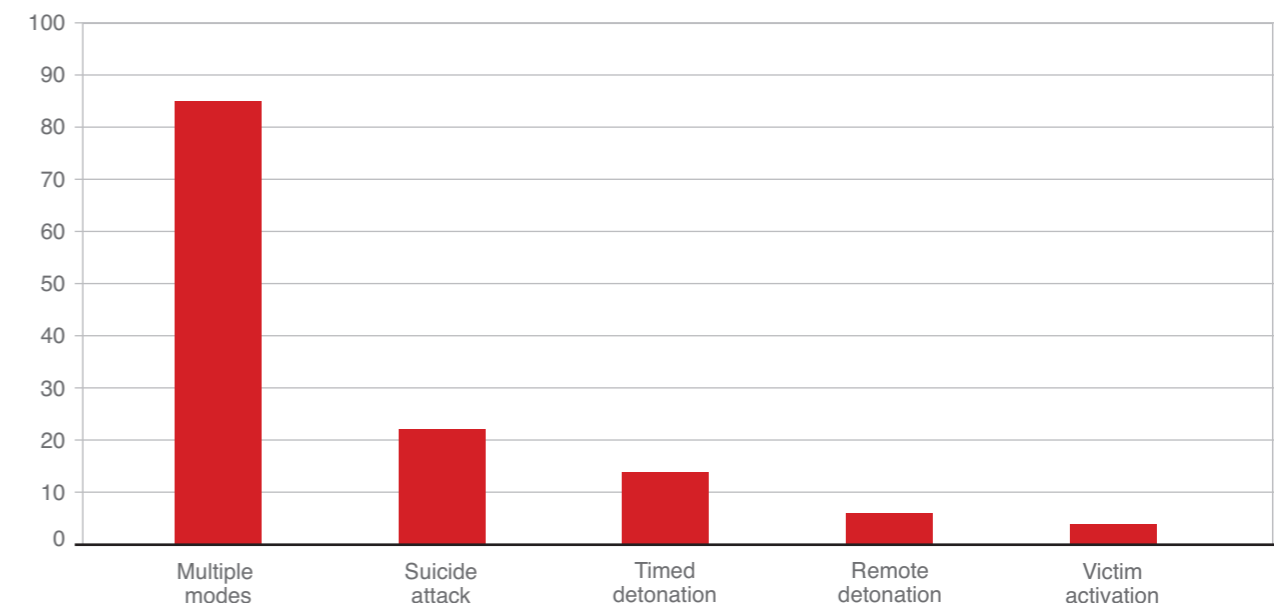
Some people that were watching on their balconies, children, were killed...

Male resident of Homs, Syria
injured in a double car bombing in May 2014¹⁰⁵

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

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

Figure 14 Average civilian casualties by IED detonation method



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).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.¹⁰⁷

Victim-activated IEDs

Victim-activated devices are detonated when a person or animal stands on them, or when they are driven over.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.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 2014.¹¹⁰ 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.

Command-operated IEDs

These are detonated generally by radio signals or command wire. AOVAV divides these IEDs between those detonated by remote-control or command, and those that involved the suicide of the perpetrator.

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. AOVAV 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.

Remotely-detonated IEDs can be particularly harmful to civilians when used in populated areas. In those

attacks 71% of the casualties were civilians, compared to 38% in non-populated areas. On 9 December 2014, ten 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.¹¹¹

Suicide bombings

Suicide bombings, including car bombs operated by suicide bombers, are a form of command-operated IEDs. In total AOA V 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 civilian 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.¹¹² An unexploded jacket discovered at the site was found to contain 10kg of explosive and 2,500 ball-bearings.¹¹³

In 2014, some of the most destructive suicide attacks were against places of worship, where AOA V 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.¹¹⁴

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 1981.¹¹⁵

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.

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, AOA V 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 2014¹¹⁶

Conclusion

More civilian casualties, from more incidents of explosive violence, were recorded in 2014 than in any of the three previous years that AOA V 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 AOA V first began recording.

Over four years, AOA V 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 AOA V'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.¹¹⁷ In February 2014, UN Security Council resolution 2139 demanded an immediate end to "the indiscriminate employment of weapons in populated areas, including and aerial bombardment [...]" in the fighting in Syria.¹¹⁸ In April 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.¹¹⁹ The UN has brought together nations and civil society actors aiming to reduce the humanitarian harm that these weapons cause.¹²⁰

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.¹²¹ This was the second such meeting, and demonstrates increased commitment towards the development of a political commitment. AOA V also convened a meeting of experts to address the humanitarian impact of improvised explosive devices (IEDs) in September 2014.¹²²

AOAV is a member of the International Network on Explosive Weapons (INEW). We urge states and all users of explosive weapons to:

- Acknowledge that use of explosive weapons in populated areas tends to cause severe harm to individuals and communities and furthers suffering by damaging vital infrastructure;
- Strive to avoid such harm and suffering in any situation, review and strengthen national policies and practices on use of explosive weapons and gather and make available relevant data;
- Work for full realisation of the rights of victims and survivors;
- Develop stronger international standards, including certain prohibitions and restrictions on the use of explosive weapons in populated areas.

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.¹²³ 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 Secretary-General.¹²⁴
- The UN Security Council should call upon all parties to refrain from using explosive weapons in populated areas. Whenever relevant Security Council resolutions should include specific recommendations for civilian protection from such use of these weapons, building on recent examples in Syria, Libya and Cote d'Ivoire.¹²⁵
- States and international organisations should publically condemn any use of explosive weapons in populated areas.
- Recognising the large number of civilian casualties caused by IEDs, all parties should work on measures which address the high level of humanitarian harm caused by these weapons. This includes measures to address the security of stockpiled ammunition and munitions, coordinated efforts towards the control of source materials, and more systematic data collection.¹²⁶
- States and users of explosive weapons should work towards the full realisation of the rights of victims, including those killed and injured, their families, and affected communities. They should strive to ensure the timely and adequate provision of needed services for the recovery, rehabilitation, and inclusion of victims of explosive violence, without discrimination.
- States, international organisations, and non-governmental organisations should gather and make available data on the impacts of explosive weapons. Data on the casualties of explosive violence should be disaggregated so that stakeholders can accurately assess the impact of explosive weapons. More should also be done to protect and support people and organisations who gather such data, including providing access to journalists on the ground.
- More research is needed to better understand the long-term harm from explosive weapons, including the impact of these weapons on vital infrastructure and services, public health, economic livelihoods, and environmental contamination. More funding support for NGOs working on data collection, investigations and victim assistance is necessary to advance collective understanding of the impacts of explosive weapons in populated areas.
- AOAV has demonstrated over four years the importance of systematic and continuing monitoring of explosive violence and its impacts in populated areas. This monitoring must continue in order to assess whether recommendations are put into effect.

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 Robin 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).

RECORDING 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.

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.

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 AOA. There is no systematic base-line for determining what constitutes an injury, and AOA 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 AOA 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.¹²⁹

AOA 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 AOA 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.¹³⁰

Poorly secured or stockpiled explosive weapons can also cause unintended harm to civilians. AOA recorded two stockpile explosions in 2014.¹³¹

Media reports used by AOA are a valuable resource for better understanding the scale and pattern 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.

Notes

1 "ICRC alarmed over unacceptable use of explosive weapons in urban areas," International Committee of the Red Cross, 13 October 2014, www.icrc.org/en/document/weapons (accessed 22 May 2015).

2 "Residents of besieged Ukrainian city bury dead in yards and gardens," *The Telegraph*, 12 August 2014, www.telegraph.co.uk/news/worldnews/europe/ukraine/11027588/Residents-of-besieged-Ukrainian-city-bury-dead-in-yards-and-gardens.html (accessed 26 May 2015).

3 For more on the longer-lasting impacts of explosive weapons see, among others, Jane Hunter, "Blood on the streets of Boston," Action on Armed Violence, December 2014, https://aoav.org.uk/wp-content/uploads/2015/03/blood_on_the_streets_of_boston2-2.pdf (accessed 26 May 2015), Robert Perkins, "Syria's shockwaves," Action on Armed Violence, December 2013, <http://aoav.org.uk/wp-content/uploads/2014/04/Syrias-shockwaves-the-consequences-of-explosive-violence-for-Syrian-refugees.pdf> (accessed 26 May 2014).

4 AOA recorded 9,128 civilian casualties caused by state forces out of 32,662 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. AOA 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 AOA 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 Restrictions on the Use of Incendiary Weapons (Protocol III)," ICRC, Geneva, 10 October 1980, posted by U.S. Department of State, www.state.gov/documents/organization/190579.pdf (accessed 10 March 2015). AOA'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 Cluster Munition Coalition, *The Landmine and Cluster Munition Monitor 2014*, December 2014, <http://the-monitor.org/index.php/LM/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.

9 Missiles are defined as "an armament store designed to be released from an aircraft or discharged from a gun or launcher towards a selected point usually to cause damage at that point." International Ammunition Technical Guideline, "Glossary of terms, definitions and abbreviations," *United Nations Office for Disarmament Affairs*, IATG 01.40:2011(E) 1st Edition (2001-10-01), [www.un.org/disarmament/convarms/Ammunition/IATG/docs/IATG01.40-Glossary_and_Definitions\(V.1\).pdf](http://www.un.org/disarmament/convarms/Ammunition/IATG/docs/IATG01.40-Glossary_and_Definitions(V.1).pdf) (accessed 11 March 2014).

10 Rockets, both air and ground-launched, are defined as "munitions consisting of a rocket motor and a 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 missiles." International Ammunition Technical Guideline, "Glossary of terms, definitions and abbreviations," *United Nations Office for Disarmament Affairs*, IATG 01.40:2011(E) 1st Edition (2001-10-01), [www.un.org/disarmament/convarms/Ammunition/IATG/docs/IATG01.40-Glossary_and_Definitions\(V.1\).pdf](http://www.un.org/disarmament/convarms/Ammunition/IATG/docs/IATG01.40-Glossary_and_Definitions(V.1).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 2014).

12 Mortars are generally indirect-fire weapons which fire projectiles over a high-trajectory and do not depend on a line-of-sight. Erich G. Berman, Pierre Gobinet and Jonah Leff, "Mortars," *Small Arms Survey*, Research Notes - Number 2, February 2011, www.smallarmssurvey.org/fileadmin/docs/H-Research_Notes/SAS-Research-Note-2.pdf (accessed 26 March 2015).

13 AOA 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 Convention on Certain Conventional Weapons (CCW). The full definition and guidelines for recording an area as being 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 (AOA), 1 December 2014, <https://aoav.org.uk/2014/three-years-explosive-weapons/> (accessed on 30 April 2015).

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

17 Dylan Stableford, "Malaysia Airlines plane carrying 298 people shot down in missile strike near Ukraine-Russia border: U.S. official," *Yahoo News*, 17 July 2014, <http://news.yahoo.com/malaysian-plane-crash-ukraine-russia-153426322.html> (accessed 28 May 2015).

18 These only include casualties from an explosive weapon at its time of use. AOA also recorded impacts of unexploded ordnance (UXO) and abandoned ordnance (AXO), and from unattended or mismanaged stockpiles. These casualties are excluded from the primary analysis in this report, but are documented on pages 36-37.

19 In alphabetical order these were; Austria, Azerbaijan, Central African Republic, Czech Republic, Djibouti, Germany, Guinea-Bissau, Kazakhstan, Madagascar, Macedonia, Malta, Sweden, Ukraine, West Bank, Western Sahara.

20 In 2013 and 2012 these were also the two countries that had the most reported civilian casualties. To access the reports from these years go to www.aov.org/explosive-weapon-survey.

21 AOV's data reflects the changing nature of violence in Iraq in 2014, and the increasing prominence of alternative weapon types. Iraq Body Count (IBC) documented 17,049 violent civilian deaths in Iraq in 2014, roughly double the number of deaths the recorded in 2013. IBC data does not fully disaggregate deaths by weapon type. Iraq Body Count, "Iraq 2014: Civilian deaths almost doubling year on year," 1 January 2015, www.iraqbody-count.org/analysis/numbers/2014/ (accessed 28 May 2015).

22 The Violations Documentation Center (VDC) is a Syrian casualty-recording organisation which disaggregates fatalities in the Syrian conflict by cause and weapon type. In 2014, the VDC recorded 17,379 total civilian deaths in Syria (a 34% decrease from 2013, when 26,269 total civilian deaths were recorded by VDC). AOV analysis in April 2015 revealed that 11,651 of these (64%) were caused by explosive weapons. The Violations Documentation Center (VDC), www.vdc-sy.info. All data accurate as of 28 April 2015.

23 Iraq, Syria, Pakistan, Afghanistan and Lebanon.

24 The USA saw a 98% decline in civilian casualties of explosive violence, Russia an 88% fall, and Turkey a decline of 95%. These were the three biggest declines recorded by AOV in 2014. To read more about the impact and response to the Boston Bombing, in which three civilians died and 264 injured at the 2013 Boston Marathon, see Jane Hunter, "Blood on the Streets of Boston: Reviewing the response to the April 2013 Marathon bombings," Action on Armed Violence (AOV), December 2014, https://aov.org.uk/wp-content/uploads/2015/03/blood_on_the_streets_of_boston2-2.pdf.

25 UNOCHA, "Occupied Palestinian Territory: Gaza Emergency Situation Report (as of 4 September 2014, 08:00 hrs)," https://www.ochaopt.org/documents/ocha_opt_sitrep_04_09_2014.pdf (accessed on 30 April 2015).

26 U.S. Department of State, "UNWRA School Shelling, Press Statement," Reference 26: 3 August 2014, www.state.gov/r/pa/prs/ps/2014/230160.htm (accessed 9 June 2015).

27 Explosive violence casualties were recorded in Ukraine in 2012, when 29 civilian injuries were reported in four incidents, most occurring in a sequence of IED attacks in the town of Dnipopetrovsk on 27 April 2012.

28 Jacob Parakilas and Robert Perkins, "Ukraine crisis: AOV warns against further use of explosive weapons," Action on Armed Violence, 2 May 2014, <https://aov.org.uk/2014/ukraine-explosive-weapons/> (accessed 30 April 2015).

29 In the remainder of incidents it was unclear who was responsible from the reporting. While there is documented evidence of Russian state forces firing artillery and other explosive weapons into Ukraine, AOV were not able to identify any incidents or casualties from any use of explosive weapons. Igor Sutyagin, "Russian Forces in Ukraine," Royal United Services Institute (RUSI), March 2015, https://www.rusi.org/downloads/assets/201503_BP-Russian_Forces_in_Ukraine_FINAL.pdf (accessed 28 May 2015).

30 Ukraine has denied the use of these weapons by its state forces. Cluster Munition Coalition, "Use of cluster bombs," www.stopclustermunitions.org/en-gb/cluster-bombs/use-of-cluster-bombs/cluster-munition-use-in-ukraine.aspx (accessed 1 May 2015).

31 "Protocol on the results of consultations of the Bilateral Contact Group, signed in Minsk, 5 September 2014," Organization for Security and Co-operation in Europe, 5 September 2014, www.osce.org/home/123257 (accessed 16 June 2015).

32 Only 24% of civilian casualties of explosive weapon use in Ukraine were recorded after the agreement of the Minsk Protocol in September.

33 Ibrahim Garba, "Death Toll In Nigeria Mosque Bombing," *The Associated Press*, posted by *The Huffington Post*, 29 November 2014, www.huffingtonpost.com/2014/11/29/nigeria-mosque-bombing_n_6240554.html (accessed 28 May 2015). 34 For the sake of framing a debate, AOV defines a state as full member states of the United Nations.

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37 Non-state actors named as causing casualties with explosive weapons included; Afghanistan (Hizb-i-Islami, the Taliban), Bangladesh (Jamaat-ul-Mujahideen Bangladesh), Central African Republic (anti-Balaka, Seleka), China (Turkistan Islamic Party), Colombia (FARC), Egypt (Ajnad Masr, Ansar Bayt al-Maqdis, Muslim Brotherhood), Gaza (Hamas-linked militants), India (Garo National Liberation Army, NDFB(S), People's Liberation Front of India, ULFA, UNLF) Iraq (ISIS, Mosul Brigades), Israel (Hezbollah, Hamas-linked militants), Kenya (Al Shabaab), Lebanon (Abdullah Azzam Brigades, Al-Nusra Front, ISIS, Liwa Ahrar al-Sunna), Libya (Ansar al-Sharia, Forces affiliated with renegade General Haftar (Operation Dignity), Fajr Libya (Libya Dawn), Misrata and Zintan militia groups), Nigeria (Boko Haram), Pakistan (Ahrarul Hind, Ansar-ul Mujahedin, Baloch Liberation Tigers, Jaish al Islam, Jamaatul Ahrar, Lashkar-I-Jhangvi, Mast Gul, Tehrik-i-Taliban Pakistan, United Baloch Army), Philippines (Abu Sayyaf, Bangsamoro Islamic Freedom Fighters, Moro rebels, NPA), Somalia (Al-Shabaab), Sudan (SPLA-N), Syria (Ajnad al-Sham, Al-Nusra Front, Popular Front for the Liberation of Palestine, Arab Tawhid Party, ISIS, Islamic Front, Jund al-Aqsa, Kurdish fighters, Syrian rebels), Ukraine (Luhansk People's Republic, Separatist rebels), Yemen (Al-Qaeda in the Arab Peninsula, Houthi Shiite separatists). In addition there were multiple incidents in 2014 that were caused by unknown 'militants', rebels, or unaffiliated individuals.

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40 AOV recorded 1,351 civilian casualties in urban residential areas in Gaza, 1,044 in Syria and 428 in Iraq in 2014.

41 "Security forces fight Sunni insurgents across Iraq," *Xinhua*, 2 July 2014, http://news.xinhuanet.com/english/world/2014-07/02/c_126702932.htm (accessed 29 May 2015);

Ahmed Rasheed, "Iraq PM hopes for deal on new government," *Reuters*, posted by *The Daily Star*, 2 July 2014, www.dailystar.com.lb/News/Middle-East/2014/Jul-02/262392-iraq-pm-hopes-for-deal-on-new-government.ashx#axzz37AgrP9X (accessed 29 May 2015).

42 United Nations Assistance Mission in Afghanistan, "Afghanistan: Annual Report 2014, Protection of Civilians in Armed Conflict," February 2015, <http://unama.unmissions.org/Portals/UNAMA/human%20rights/2015/2014-Annual-Report-on-Protection-of-Civilians-Final.pdf#> (accessed 29 May 2015).

43 Ayaz Gul, "Bombing kills 5 During Afghan Runoff Campaign," *Voice of America*, 11 May 2014, www.voanews.com/content/bombing-kills-5-during-afghan-runoff-campaign/1912423.html (accessed 29 May 2015); Qadir Sediqi and Ralph Ellis, "Car bomb kills 4, injures 22 in Afghanistan," *CNN*, 11 May 2014, <http://edition.cnn.com/2014/05/11/world/asia/afghanistan-car-bomb/> (accessed 29 May 2015).

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46 In 53 incidents in 2014 children were reported as among the casualties, but no number was provided.

47 Amnesty International, "Families under the rubble: Israeli attacks on inhabited homes," November 2014, www.amnesty.org.uk/israeli-attacks-family-homes-gaza#.VWhYgtJVhHw (accessed 29 May 2015).

48 For more information see, "Women and Explosive Weapons," Women's International League of Peace and Freedom (WILPF), 26 March 2014, www.wilpfinternational.org/new-report-women-and-explosive-weapons/ (accessed 1 June 2015); "Explosive Weapons and Grave Violations Against Children," Save the Children, May 2013, www.savethechildren.org.uk/resources/online-library/explosive-weapons-and-grave-violations-against-children (accessed 1 June 2015).

49 Barrel bombs, which are improvised makeshift 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 descriptions of 'barrel' bombs in fact designate improvised weapons or conventional aircraft bombs with similar wide-area effects.

50 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 Cluster Munition Coalition, *The Landmine and Cluster Munition Monitor 2014*, December 2014, <http://the-monitor.org/index.php/LM/Our-Research-Products/CMM14> (accessed 14 May 2015).

51 In 2013, AOV recorded 2,012 civilian casualties from air-launched explosive weapons.

52 In 2013 civilians made up 60% of casualties from air-launched explosive weapons.

53 Afghanistan, Egypt, Gaza, Iraq, Lebanon, Libya, Nigeria, Pakistan, Somalia, South Sudan, Sudan, Syria, Ukraine and Yemen all saw civilian casualties in 2014. In addition Colombia, Mali and Philippines had armed actor casualties.

54 Colombia, Egypt, Nigeria, Philippines, Sudan and Ukraine.

55 Akbar Shahid Ahmed, "Iran Bombing Islamic State in Iraq, U.S. Official Confirms," *The Huffington Post*, 2 December 2014, www.huffingtonpost.com/2014/12/01/us-iran-iraq_n_6251894.html (accessed 15 May 2015).

56 In May 2014 forces loyal to former army general Khalifa Haftar launched 'Operation Dignity' against militant groups in the eastern city of Benghazi. Haftar was later appointed army commander of Libya's internationally-recognised government. Libya Dawn militias also reportedly carried out aerial bombing in Libya in December, while both Egypt and the UAE launched air strikes in the country in 2014. See respectively Andrew Engel, "Libya's Growing Risk of Civil War," *The Washington Institute*, 20 May 2014, www.washingtoninstitute.org/policy-analysis/view/libyas-growing-risk-of-civil-war (accessed 14 May 2015); "Libya Dawn conducts 1st airstrike on eastern oil zone," *Ansamed*, 16 December 2014,

www.ansamed.info/ansamed/en/news/sections/generalnews/2014/12/16/libya-dawn-conducts-1st-airstrike-on-eastern-oil-zone_d2ae0bdb-d388-4e72-83ba-f30780981494.html (accessed 14 May 2015); and "UAE and Egypt behind bombing raids against Libyan militias, say US officials," *The Guardian*, 26 August 2014, www.theguardian.com/world/2014/aug/26/united-arab-emirates-bombing-raids-libyan-militias (accessed 14 May 2015).

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59 Lizzie Dearden, "Islamic State: Iraqi Government's illegal barrel bombing of civilian areas 'to be stopped,'" *The Independent*, 13 September 2014, www.independent.co.uk/news/world/middle-east/islamic-state-iraqi-governments-illegal-barrel-bombing-of-civilian-areas-to-be-stopped-9731317.html (accessed 15 May 2015).

60 Ned Parker, Isra' Al-Rubei-I and Raheem Salman, "Thousand flee Iraq government assault in Falluja," *Reuters*, 16 May 2014, www.reuters.com/article/2014/05/16/us-iraq-falluja-idUSBREA4F04720140516 (accessed 20 May 2015).

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63 "Report of the independent international commission of inquiry on the Syrian Arab Republic," United Nations General Assembly Human Rights Council, 13 August 2014, www.ohchr.org/Documents/HRBodies/HRCouncil/ColSyria/A.HRC.27.60_Eng.pdf

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90 Human Rights Watch, "Ukraine: Unguided Rockets Killing Civilians," 24 July 2014, www.hrw.org/node/127607 (accessed 20 May 2015).

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