

**UNACCEPTABLE HARM**

Monitoring explosive violence  
in 2015



## Contents

<b>Introduction</b>	<b>1</b>
<b>Key Findings</b>	<b>3</b>
<b>Key Terms</b>	<b>7</b>
<b>2015 Overview</b>	<b>9</b>
<b>Incidents of explosive violence recorded by AOAV in 2015</b>	<b>15</b>
<b>Explosive weapons in populated areas</b>	<b>17</b>
<b>Explosive Weapons Types</b>	<b>22</b>
Air-launched explosive weapons	<b>23</b>
Ground-launched explosive weapons	<b>25</b>
Improvised explosive devices (IEDs)	<b>27</b>
<b>Conclusion</b>	<b>32</b>
<b>Recommendations</b>	<b>33</b>
<b>Methodology</b>	<b>34</b>
<b>Notes</b>	<b>37</b>

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### With thanks to

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### Cover illustration

Al Thawra hospital, Sana'a, Yemen: Hussein, 5 years old, was hit by a missile while on the balcony of his family home. He spent four days in a coma after suffering serious head injuries. (OCHA/Charlotte Cans, 15 June 2015)

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## Introduction

*The use of explosive weapons in populated areas is one example that raises serious concern in terms of compliance, especially in urban environments. These weapons are prone to indiscriminate effects, with often devastating consequences for civilians. Many civilians are killed or injured by such weapons. Critical infrastructure on which civilians depend for their livelihoods and survival, such as power stations, water treatment plants and hospitals, can be continuously and cumulatively damaged so that they cease to be able to provide essential services to meet people's basic needs.*

Christine Beerli, vice-president of the ICRC, 20 January 2016<sup>1</sup>

*Unacceptable Harm – Explosive Violence in 2015* presents the findings of the fifth consecutive year of Action on Armed Violence's (AOAV) Explosive Violence Monitoring Project (EVMP). The EVMP tracks the impact of explosive weapon use worldwide as reported in the English-language media.

In 2015, AOAV recorded 43,786 deaths and injuries as a result of the use of explosive weapons around the world. And civilians continue to bear the burden of explosive violence. Of those harmed, 33,307 – over three-quarters – were reported to be civilians.



Bilal was 7, Buthayna (the smallest) was 18 months old when they died in Yemen from a US made, Saudi dropped bomb.

Such figures mean that, for the fourth year in a row, there was an increase in the number of civilian deaths and injuries recorded from explosive weapons. The number of civilian deaths and injuries recorded in 2015 is 54% higher than that recorded in 2011, the year the EVMP began.

For the third year running, Iraq and Syria were among the countries with the highest numbers of civilian casualties from explosive violence. The suffering of civilians in these countries has led to a mass exodus of people and fuelled what has been termed the 'migrant crisis' – but should be more accurately called the 'refugee crisis' – in Europe.

Desperate humanitarian emergencies have also been caused by the widespread use of explosive weapons in populated areas in Yemen, Ukraine and Nigeria.

In 2015, 92% of those reported harmed by explosive weapons in populated areas were civilians. Last year AOAV recorded an average of 30 civilian deaths from explosive weapons per day.

### 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.

Such findings reflect a consistent pattern of harm that has endured throughout the years AOAV has been tracking explosive violence. When such weapons are used in populated areas, they massively elevate the threat to civilians. Even when explosive weapons were targeted at a military objective in 2015, their wide-area effect often meant that bystanders were all too often caught by the blast or hit by projected fragments – something that AOAV catalogued in our separate report in 2015: 'Wide Area Effects' (found on our website).

AOAV's data can only ever show part of the picture of this civilian harm. It tries to capture some of the immediate effects; the deaths and the physical injuries. But it cannot touch upon the destruction of homes or a lifetime of possessions. It cannot truly impart 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 by our casualty figures. AOAV's data is not an attempt to capture every casualty of every incident around the world. No claims are made that this sample of data, taken from English-language media reporting, can represent the total impact of explosive weapons on civilians in 2015.

The last twelve months have seen explosive weapons, both manufactured and improvised, bring appalling suffering to civilians across the world.

*Unacceptable Harm* shows the urgent need for action to combat and reduce the harm these weapons continue to cause. We encourage states to act – and swiftly – to condemn the use of explosive weapons with wide area effects in populated areas. Our annual report – yet again – illustrates the stark urgency of such need.



House destroyed by shelling – Eastern Ukraine, 2015

## Key findings

### OVERVIEW

For the fourth year in a row, 2015 saw a rise in the number of civilian casualties from explosive violence around the world. Last year 33,307 civilians were killed or injured by explosive weapons – up 2% from 2014 and 65% more than when AOAV's monitor began in 2011.

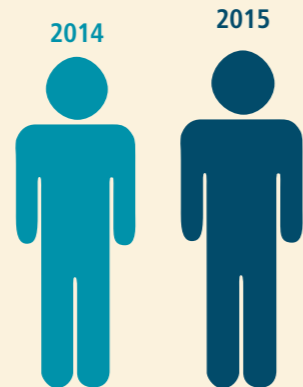
- AOAV recorded 43,786 deaths and injuries by explosive weapons in 2,170 incidents in 2015. Of these, **33,307 were civilians – 76%**.
- When explosive weapons were used in populated areas, **92% of those killed and injured were civilians**. This compares to 31% in other areas.
- Civilian deaths and injuries in populated areas, represented **89% of all reported civilian deaths and injuries**.
- Civilian deaths and injuries rose by 2% in 2015 from 2014. This is the fourth consecutive year in which recorded civilian casualties of explosive violence have increased. In 2011, 21,499 civilians were killed or injured.
- There was a sharp rise in the number of civilians recorded killed or injured by **suicide attacks**, reaching 9,205. **This was 67% more than recorded in 2014** – in spite of similar incident numbers (253 in 2015, 248 in 2014).
- Incidents caused by **air-launched weaponry killed and injured a reported 9,200 civilians worldwide**, accounting for 28% of all civilian deaths and injuries. This represents a rise of 57% in civilian deaths and injuries from 2014 – in spite of a 32% drop in numbers of incidents recorded (501 in 2015, 735 in 2014).
- **Syria, Yemen, Iraq, Nigeria and Afghanistan saw the highest number of civilian deaths and injuries in 2015.**
- Numbers of reported deaths and injuries in Syria continued to rise. **More than 10,000 deaths and injuries were recorded by AOAV in Syria in 2015.**
- A number of countries saw a significant rise in civilian deaths and injuries as a result of explosive weapons compared to the year before: **Turkey (7682%), Yemen (1204%), Egypt (142%), Libya (85%), Syria (39%) and Nigeria (22%)**.
- **Six countries and territories had over 1,000 civilian deaths and injuries in 2015.**
- Incidents were recorded in **64 countries and territories** around the world – five more countries than in 2014. In 23 of these countries no incidents were recorded in 2015.
- Despite this increase in deaths and injuries, there was a 20% decrease in the number of recorded explosive weapon incidents compared to 2015. This means there was a higher average lethality than previous years – a reflection of the increasing use of explosive weapons deliberately targeting populated areas. In 2014, AOAV had recorded 41,847 deaths and injuries from 2,702 incidents.

# EXPLOSIVE VIOLENCE IN 2015



**76%**  
CIVILIAN CASUALTIES

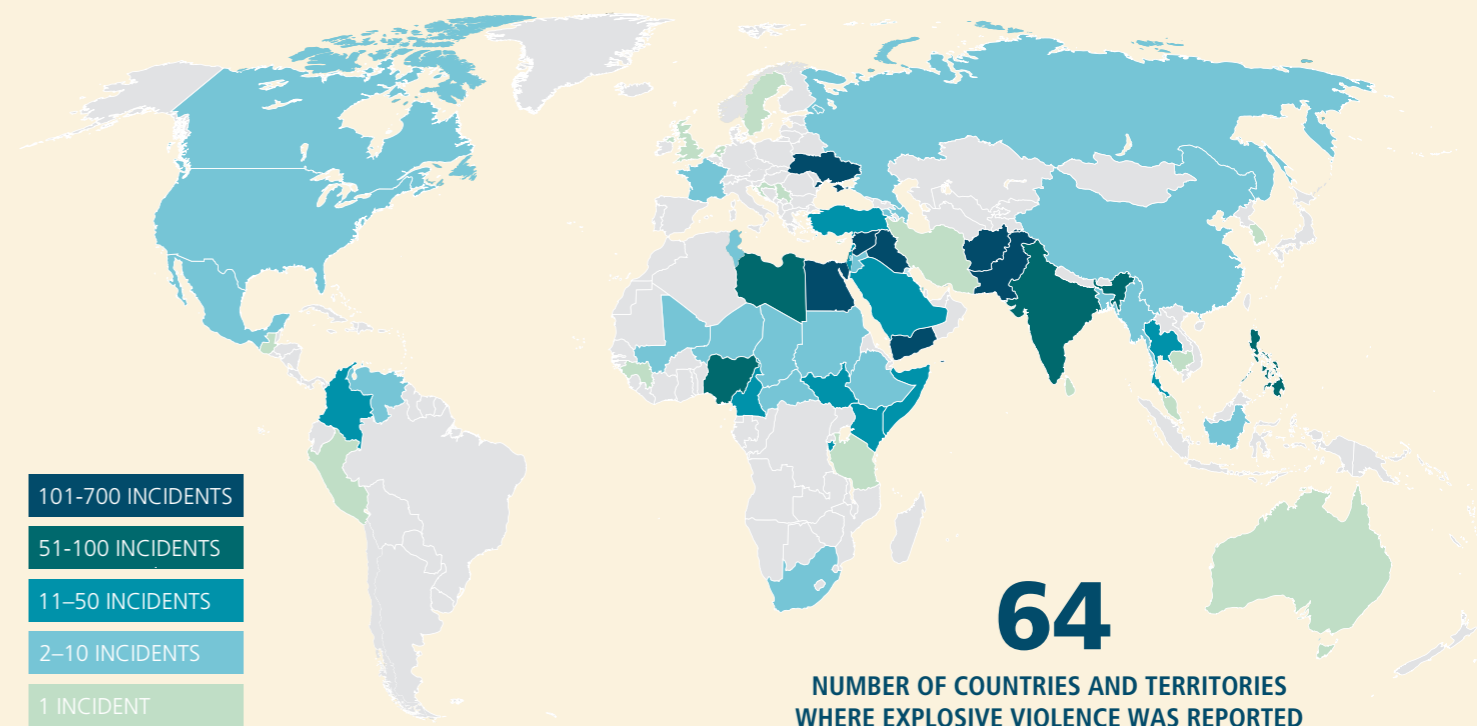
TOTAL REPORTED DEATHS & INJURIES: 43,786  
TOTAL CIVILIAN DEATHS & INJURIES: 33,307



**+2%**  
INCREASE IN TOTAL CIVILIAN DEATHS & INJURIES



**30**  
AVERAGE NUMBER OF CIVILIAN DEATHS PER DAY



## TARGETED AREAS

### POPULATED AREAS

**92%** CIVILIAN DEATHS & INJURIES IN POPULATED AREAS



1,236 ATTACKS IN POPULATED AREAS

### NON-POPULATED AREAS

**31%** CIVILIAN DEATHS & INJURIES IN NON-POPULATED AREAS



934 ATTACKS IN NON-POPULATED AREAS

	TOTAL DEATHS & INJURIES	CIVILIAN DEATHS & INJURIES	AVERAGE CIVILIAN DEATHS & INJURIES PER ATTACK
URBAN RESIDENTIAL	<b>5,400</b>	<b>93%</b>	<b>17</b>
MARKETS	<b>4,918</b>	<b>99%</b>	<b>42</b>
PLACES OF WORSHIP	<b>2,633</b>	<b>95%</b>	<b>44</b>

## DEADLY WEAPONS

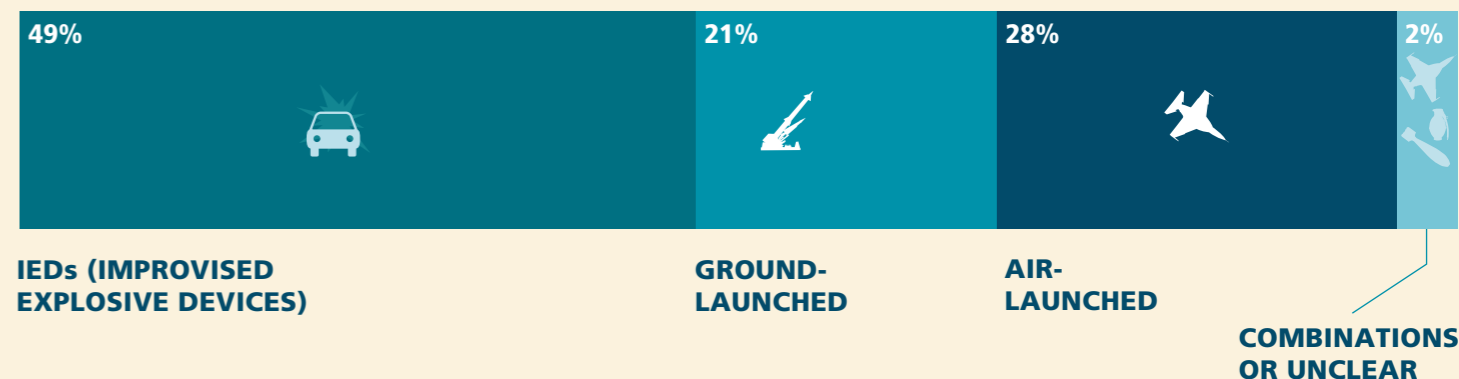
### AVERAGE CIVILIAN DEATHS & INJURIES PER INCIDENT BY EXPLOSIVE WEAPON TYPE

**25**  
 CAR BOMBS

**42**  
 AIR-DROPPED BOMBS

**16**  
 ROCKET ARTILLERY

### CIVILIAN DEATHS & INJURIES BY WEAPON LAUNCH METHOD



## Key terms

### 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 AOA V 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.<sup>1</sup>

### EXPLOSIVE WEAPONS TYPES:

Weapons were classified by AOA V 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.

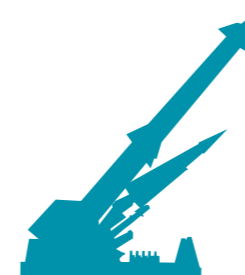
- **Multiple types:** Used to refer to incidents where a combination of different explosive weapon types were used and it was not possible to attribute casualties to each munition. These can involve any combination of air, ground-launched, or improvised explosive devices. The category most commonly includes 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.<sup>2</sup>

### 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.<sup>3</sup> 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.<sup>4</sup>
- **Rocket:** Typically used to refer to unguided missiles, rockets were recorded wherever they are specified in a news source.<sup>5</sup>

### 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.<sup>6</sup>
- **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.<sup>7</sup>
- **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.

## 2015 Overview

AOAV recorded **43,768** people killed or injured by explosive weapons in **2,170** incidents in 2015.

Of the casualties recorded in 2015, **76%** were civilians (**33,307** civilians killed and injured).

This meant there was a **2% increase** in civilian casualties from explosive violence in 2015 (up from 32,662 in 2014).

In 2015 AOA V recorded an increase in civilians killed and injured by explosive violence for the fourth consecutive year. In that year, AOA V saw 33,307 civilian deaths and injuries from explosive weapons reported around the world. This is an increase of 2% from 2014.

As in previous years, the majority of casualties from explosive weapon use were civilians. Civilians accounted for 76% of all recorded deaths and injuries in 2015.

### Worst incidents of 2015

Incident	Location	Civilians killed and injured
Multiple air-dropped bombs hit marketplace <sup>8</sup>	Douma, Syria	620
Near-simultaneous suicide bombings hit peace rally <sup>9</sup>	Ankara, Turkey	602
Four suicide bombs target Shi'i mosques <sup>10</sup>	Sana'a, Yemen	482
Airstrike on missile base in city centre <sup>11</sup>	Sana'a, Yemen	423
Airstrike on arms depot spreads explosives across city <sup>12</sup>	Sana'a, Yemen	319
Possible vacuum bomb strike on marketplace <sup>13</sup>	Douma, Syria	296
Katyusha rocket attack on neighbourhood housing IDPs <sup>14</sup>	Aden, Yemen	277
Truck bomb near army compound in residential area <sup>15</sup>	Kabul, Afghanistan	263
Huge ice truck bombing at busy market, levelling shops <sup>16</sup>	Khan Bani Saad, Iraq	260
Four suicide bombers attack near shopping centre <sup>17</sup>	Beirut, Lebanon	200

Following a well established pattern of harm, civilians were seen to be most at risk when explosive weapons were used in populated areas.<sup>18</sup> In 2015, 57% of all recorded incidents took place in populated areas. In those attacks, 92% of those killed or injured were reported as civilians. This compares to 31% of victims being reported as civilians when explosive weapons were used in lesser populated areas.

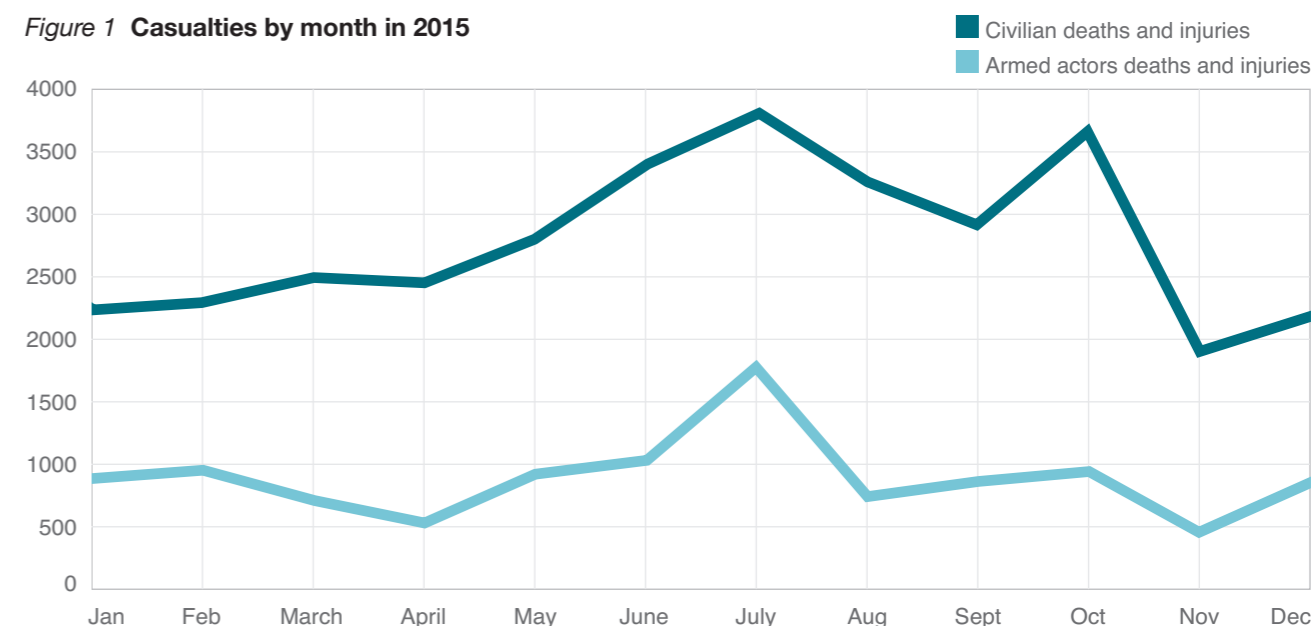
As shown in *Figure 1*, the reported civilian casualties of explosive weapon use consistently and substantially outnumbered armed actors in 2015.<sup>19</sup>

On average, AOA V recorded 2,775 civilian casualties reported every month, compared to an average of 874 armed actors. This means that, every day, there were on average 91 civilians reported killed or injured by explosive weapons (compared to 29 armed actors). Thirty civilians were reported killed on average every day from explosive weapon use in 2015.

### A GLOBAL PROBLEM

AOAV recorded at least one death or injury from an explosive weapon attack in 64 different countries and territories (see map on page 15), six more than in 2015.<sup>20</sup> Casualties from explosive weapons were reported in 23 countries and territories in 2015 that had not been impacted in 2014.<sup>21</sup> Of these countries, AOA V recorded more than 200 civilian deaths and injuries in Cameroon, Chad, Saudi Arabia and Kuwait.

Figure 1 Casualties by month in 2015



As *Figure 2* (overleaf) shows, Syria was the country with the most civilian deaths and injuries in 2015, followed by Yemen, Iraq, Nigeria and Afghanistan.

### Syria

As this report is compiled, the Syrian civil war has entered its sixth year. The intensity of the explosive violence in conflict scenarios like Syria means that AOA V's incident-based methodology is likely to be capturing just a fraction of the real harm unfolding there. As a result, the impact of explosive weapons on the ground in Syria in 2015 could not be fully represented in this dataset.

In spite of these difficulties, AOA V was able to record 8,732 civilian deaths and injuries as a result of explosive weapons use in Syria. This constitutes a 40% increase from the previous year.

### Iraq

Iraq saw a 53% decrease in the number of civilian casualties recorded by AOA V compared to 2014. This almost certainly does not reflect lower levels of violence within Iraq, where the security situation has worsened since the end of 2014; rather, it probably shows a decline in English-language casualty reporting from inside Iraq, particularly within active zones of conflict.<sup>22</sup>

*Figure 2* shows the fifteen countries with the most-reported civilian casualties. Six countries and territories saw more than 1,000 civilian casualties in 2015. In 2014, there were five such locations.<sup>23</sup>

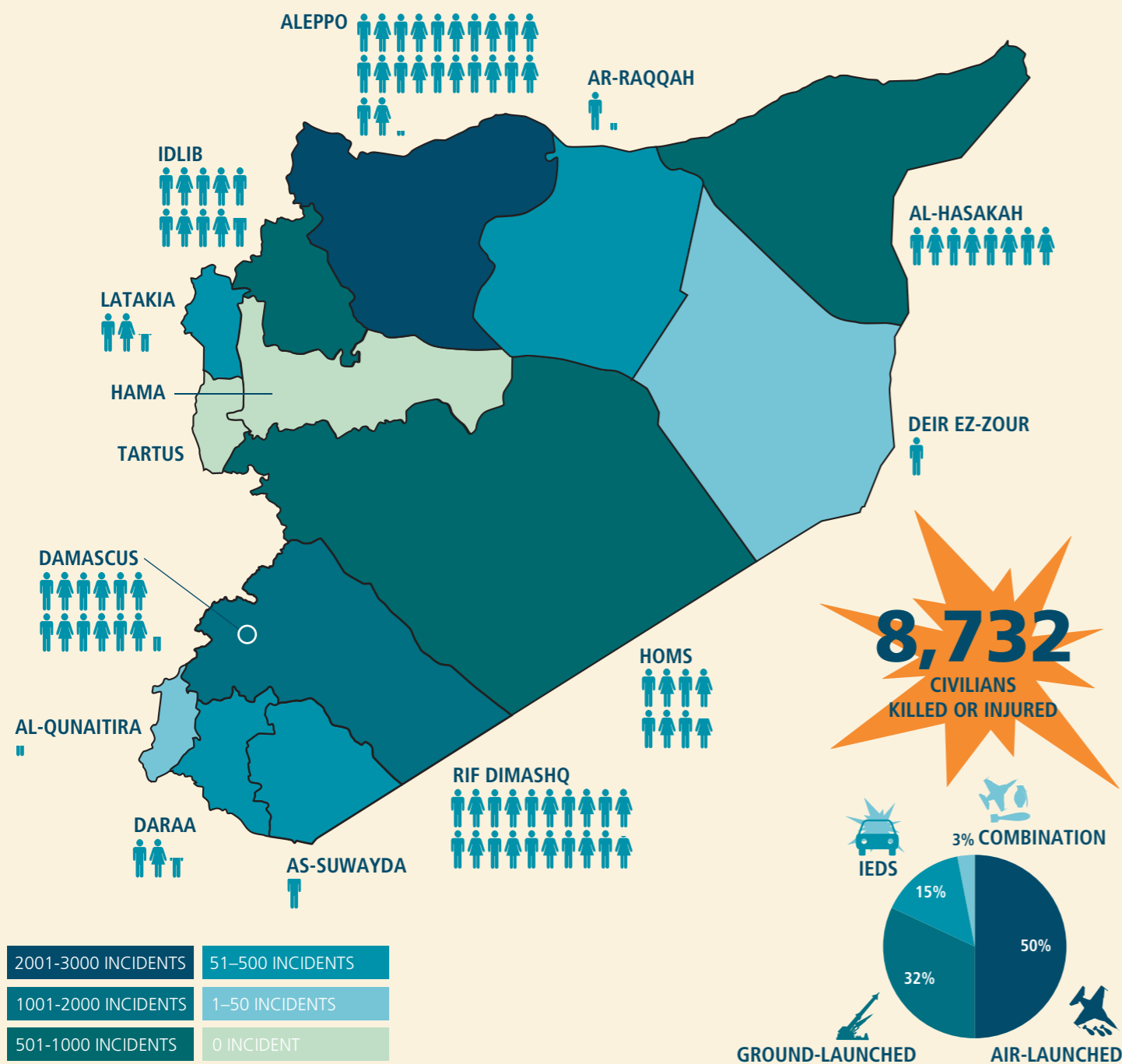
A number of countries included in the top fifteen in 2014 fell off the table in 2015. This should not lead to the assumption that things are getting better in these countries. Some of these places experienced similar levels of violence as previous year but were displaced off the top 15 listing due to upticks elsewhere.

### Gaza and Kenya

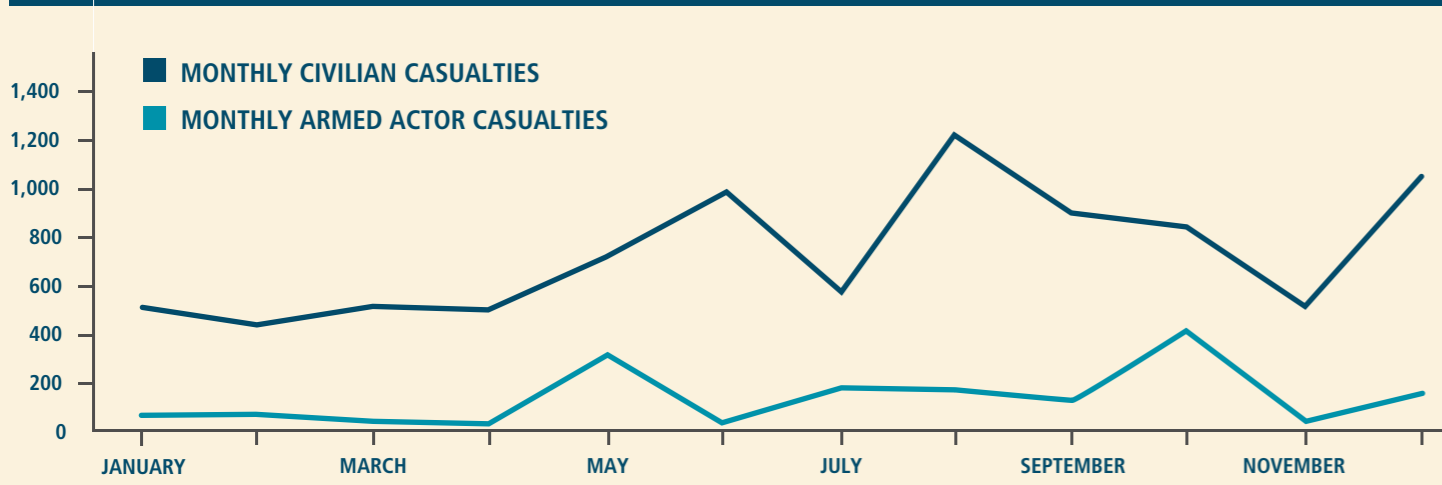
Gaza, which in 2014 saw the third highest number of overall civilian deaths and injuries, saw a reduction in explosive violence in 2015. Its prominence in 2014 was due to the IDF's intense bombardment of the Gaza Strip during Operation Protective Edge. Kenya also fell off the table after a considerable reduction in levels of explosive violence.

Despite these optimistic findings, several other countries saw sharp increases in levels of explosive violence in 2015, as shown by the table overleaf. The largest increases were seen by Yemen, Turkey, Egypt, Chad and Cameroon. These new hotspots are discussed in detail overleaf.

# THE HARDEST-HIT PROVINCES IN SYRIA IN 2015



# MONTHLY CASUALTIES OF EXPLOSIVE VIOLENCE IN 2015



## HOTSPOTS: 2015's BIGGEST ESCALATIONS

### Yemen

Yemen has witnessed consistently high levels of harm as a result of explosive weapons use since AOA began collecting data in 2011. This has largely been a result of ongoing insurgencies and the activities of al-Qaeda in the Arabian Peninsula (AQAP).

However, in 2015 Yemen experienced a significant spike in levels of explosive violence. AOA recorded 6,286 civilian deaths and injuries in Yemen in 2015, a 1204% increase from the 2014 figure.

In early 2015, a delicate compromise between the government of Abd Rabbo Mansur Hadi and the leaders of the Houthi movement collapsed. This set off a series of violent events that escalated into full civil war

between the two sides. In March 2015, a coalition of Arab states, led by Yemen's northern neighbour Saudi Arabia, launched aerial strikes on the Houthi rebels.

Since this Saudi-led intervention began, the security and humanitarian situation in Yemen has deteriorated massively. AOA recorded 3,972 civilian deaths and injuries in Yemen as a result of aerial attacks – the vast majority likely to have been launched by the jets of the Saudi-led coalition. These figures almost certainly understate the reality of the harm wrought on the ground.

Yemen has also suffered from a series of high-profile suicide attacks launched by AQAP and, more recently, a local ISIS affiliate. AOA recorded 541 civilian deaths and injuries as a result of 9 suicide bombings in Yemen.

Figure 2 Most affected countries and territories in 2015

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 2015
1	Syria	8,732	10,333	352	25	85%	2
2	Yemen	6,286	7,693	214	29	82%	9
3	Iraq	5,059	7,768	359	14	65%	1
4	Nigeria	2,920	3,048	84	35	96%	4
5	Afghanistan	2,029	2,705	138	15	75%	6
6	Pakistan	1,291	2,356	197	7	55%	5
7	Ukraine	862	1,557	136	6	55%	7
8	Turkey	856	1,086	45	19	79%	35
9	Egypt	574	1,156	108	5	50%	16
10	Libya	567	734	51	11	77%	11
11	Cameroon	464	489	11	42	95%	N/A
12	Chad	459	488	7	66	94%	N/A
13	Somalia	451	700	45	10	64%	12
14	Lebanon	318	365	16	20	87%	8
15	Saudi Arabia	304	412	48	6	74%	N/A



### Turkey

AOAV recorded a huge spike in explosive violence in Turkey, recording 856 civilian deaths and injuries from 45 incidents. In 2014 there were only six incidents resulting in 11 civilian deaths and injuries.

The most lethal incident recorded in Turkey in 2015 was the October Ankara bombing launched by ISIS. It resulted in 602 civilian deaths and injuries. This was also the second-worst incident recorded overall in 2015 and the worst suicide bombing. AOAV also recorded two other IED incidents in Turkey attributed to ISIS, one of which was a suicide bombing. These incidents accounted for a further 210 civilian deaths and injuries.

In addition to these high-profile, high-lethality bombings, Turkey also saw an escalation of conflict between the central government and Kurdish nationalist groups.

AOAV recorded 29 incidents attributed to the PKK (Kurdistan Workers' Party) and TAK (Freedom Falcons of Kurdistan), including attacks with mortars, rockets, RPGs, landmines and car bombs. 14 incidents were roadside bombs. These attacks killed or injured a total of 14 civilians and 205 armed actors.

*After the explosion I was overcome by shock. I fell on my knees, and I couldn't believe what I was seeing. Then fifteen seconds later there was a second blast. We saw flags and pieces of bodies flying into the air... I will never forget the smell of burned human flesh. Even after I left the scene, I couldn't help feeling it.*

**Witness to the Ankara bombing, Turkey**  
10 October 2015<sup>ii</sup>

### Egypt

AOAV recorded 108 incidents in Egypt causing 574 civilian deaths and injuries and 582 armed actor deaths and injuries.

In 2015, Egypt saw the continuing gradual expansion of the activities of the Sinai Islamist insurgency – previously known as Ansar Bayt al-Maqdis (Supporters of Jerusalem). 62% of all incidents recorded took place in Sinai. Ansar Bayt al-Maqdis swore allegiance to ISIS in late 2014 and rebranded themselves as Sinai Province of the Islamic State.

Sinai Province were recorded as responsible for nine incidents, including three in Cairo, although it is likely that they were responsible for most or all of the 60 incidents recorded in North Sinai not attributed to the Egyptian state.

Sinai Province also claimed responsibility for the most lethal incident in Egypt last year. On the 31 October, an IED detonated on Metrojet Flight 9268 downing the plane and killing all 224 civilians aboard. The plane was above North Sinai, where it crashed in the desert.

The victims of that Metrojet bombing account for 39% of all civilian deaths and injuries reported in Egypt in 2015. A number of small-scale attacks were also attributed to the group Afnad Misr (6 incidents) and non-specific 'Islamists' (1 incident).

The Egyptian state was also recorded as responsible for 8 incidents, most of them airstrikes targeting insurgents. This includes the September airstrike on a bus full of Mexican tourists mistaken for militants in the Western Desert, resulting in the deaths of 12 people.<sup>24</sup>

The majority of incidents recorded (64%) were roadside bombs and non-specific IEDs. Excluding the victims of the Metrojet bombing, 94 civilians were reported killed or injured by these attacks. Most incidents had relatively low civilian fatalities, and many only killed or injured members of the security forces: overall these incidents were reported as killing or injuring 595 armed actors.

### Chad and Cameroon

Chad and Cameroon were both among the fifteen countries worst affected by explosive violence in 2015, in spite of the fact that not a single incident was recorded in either of them in 2014.

This is a consequence of Boko Haram having escalated its campaign of terror – particularly suicide terror – in Nigeria and its neighbouring states. All but one of the incidents recorded in Chad and Cameroon in 2015 were suicide bombings, and all most probably launched by Boko Haram. Taken together with Nigerian suicide bombings probably also perpetrated by the group, the Chad and Cameroon suicide bombings killed and injured at least 3,104 civilians in 2015.

In late January 2015, both states – whose northernmost regions are directly adjacent to Nigeria's Borno and Adamawa provinces, Boko Haram's heartland – joined a local coalition against the Boko Haram insurgency.

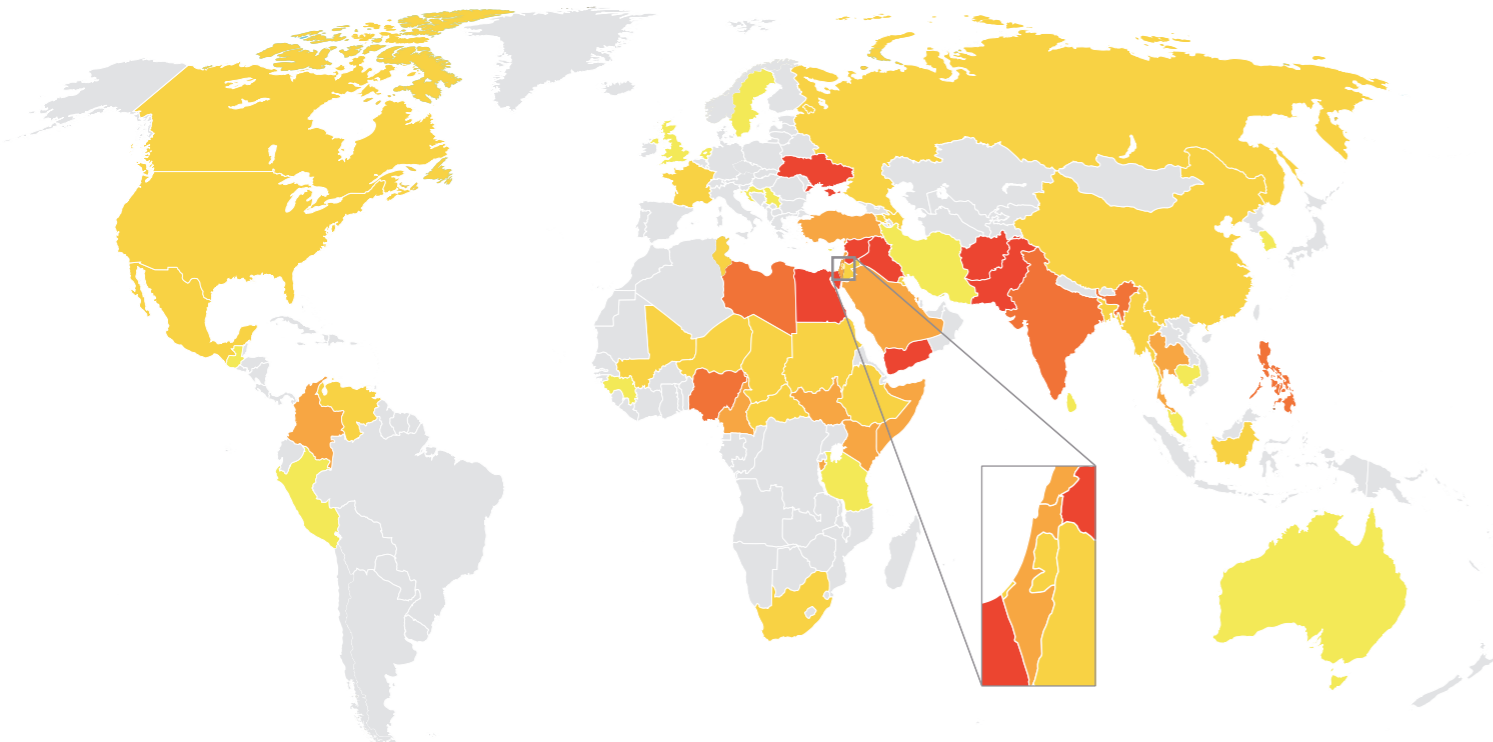
*I don't remember anything except that I woke up at the hospital... I wonder when I'll be able to restart my activities to provide for my family.*  
**Resident of Maroua, Cameroon,**  
after a suicide bombing  
on 25 July 2015<sup>iii</sup>



Taking stock of the destruction amid the rubble of a market in the old city of Sa'ada, which was hit by an airstrike in April 2015, (OCHA / Philippe Kropf, flickr.com/photos/136102267@N08/23322619802)

## Incidents of explosive violence recorded by AOVAV in 2015

AOAV recorded explosive violence in 64 countries and territories across the world. Explosive violence was particularly intense in several contexts.

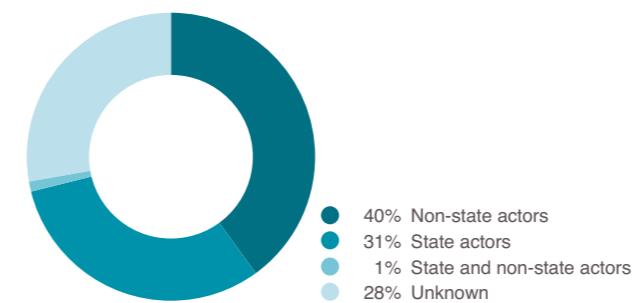


- **Countries and territories with between 101 and 400 incidents**  
 Afghanistan 138, Egypt 108, Iraq 359, Pakistan 197, Syria 352, Ukraine 136, Yemen 214
- **Countries with between 51 and 100 incidents**  
 India 91, Libya 51, Nigeria 84, Philippines 61
- **Countries with between 11 and 50 incidents**  
 Burundi 20, Cameroon 11, Colombia 12, Israel 14, Kenya 11, Lebanon 16, Saudi Arabia 48, Somalia 45, South Sudan 11, Thailand 27, Turkey 45
- **Countries with between 2 and 10 incidents**  
 Armenia 5, Azerbaijan 7, Bahrain 5, Bangladesh 9, Burma 6, Canada 2, Central African Republic 2, Chad 7, China 5, Ethiopia 2, France 6, Gaza 4, Indonesia 2, Jordan 2, Mali 8, Mexico 2, Niger 3, Russia 4, South Africa 2, Sudan 7, Tunisia 3, USA 5, Venezuela 2, West Bank 2
- **Countries and territories with 1 incident**  
 Australia 1, Cambodia 1, Croatia 1, Cyprus 1, Guatemala 1, Guinea 1, Iran 1, Kuwait 1, Malaysia 1, Netherlands 1, Peru 1, Serbia 1, South Korea 1, Sri Lanka 1, Sweden 1, Tanzania 1, UK 1

### WHO IS BEHIND THE BOMBINGS?

As in previous years, many of the explosive violence incidents recorded by AOVAV in 2015 went unclaimed and could not be attributed to a specific actor. In 40% of incidents it was unclear from reporting whether a state or non-state actor was responsible. This is a lower percentage than in 2014, when 48% of incidents were coded as unclear. The increase in attribution is due to a number of aerial campaigns being launched by states across the world, particularly in Yemen, Syria and Iraq.

Figure 3 Civilian casualties by reported user



### State Actors

Incidents which could unambiguously be attributed to a state rather than a non-state group caused 16,392 deaths and injuries in 2015, of whom 64% (10,426) were reported to be civilians. The most prolific state users of explosive weapons are listed in Figure 4.

The number of reported civilian deaths and injuries represents a 13% rise from the previous year. This is probably due at least in part to a general rise in recorded civilian deaths and injuries and a greater percentage of attacks being attributed to states and a smaller percentage being coded as unclear.

State forces were recorded as being responsible for 31% of civilian deaths and injuries. This is a slight rise from 2014, when they were responsible for 28% of all civilian deaths and injuries.

More state forces reportedly used explosive weapons in 2015 than in previous years. Thirty different state forces used explosive weapons in 2015, up from 22 in 2014.<sup>25</sup> This is in addition to four distinct coalitions (MINUSMA in Mali, AMISOM in Somalia, the Saudi-led Arab coalition in Yemen and the US-led coalition against al-Qaeda and ISIS-linked elements in Iraq and Syria), and three incidents attributed to the NATO taskforce in Afghanistan (previously NATO-ISAF, now known as Resolute Support).

Figure 4 Biggest state users of explosive weapons in 2015

States		
1	Saudi-led coalition	21% of incidents
2	Syria	16%
3	US-led coalition	12%
4	Pakistan	9%
5	US	6%

### Non-State Actors

Collectively, non-state actors caused 15,864 casualties in 2015, of whom 83% were civilians (13,192). This is a considerable rise from previous years.<sup>26</sup> The higher figure does not necessarily represent a greater proportion of violence being carried out by non-state actors directly. Compared to previous years, a much lower number of incidents were not attributed to either a state or non-state actor. It is likely that a large percentage of those incidents for which an attribution was not clear in previous years were in fact the work of non-state actors but were not recorded as such.

AOAV recorded 59 different named non-state actors using explosive weapons.<sup>27</sup> The most prolific non-state actors in 2015 are listed in Figure 5. This year, ISIS was the largest non-state user of explosive weapons in the world, followed by the various Syrian rebel groups taken together.

Due to AOVAV's methodology, groups which do not routinely claim responsibility for their attacks or which operate in areas where attribution to a specific actor is difficult may be responsible for more attacks than are recorded. One prominent case of this is the West African group Boko Haram. Only 24 incidents were coded as being attributable to Boko Haram in 2015. However, AOVAV recorded 84 incidents in Nigeria, 11 in Cameroon, 7 in Chad and 3 in Niger in 2015, the vast majority of which were probably the work of Boko Haram.

Figure 5 Biggest non-state users of explosive weapons in 2015

Non-state		
1	ISIS	19% of incidents
2	Syrian rebels	17%
3	Ukrainian separatists	7%
4	Houthi rebels	7%
5	Taliban	6%

## Explosive weapons in populated areas

In 2015, **92%** of casualties in populated areas were reported as civilians. This is compared to **31%** in other areas.

On average **24** civilians were killed or injured in every incident of explosive weapon use in populated areas. In other areas the average number was **four**.

**5,024** civilians were killed or injured in homes or in residential areas in 2015 – a rise of **43%** from 2014.

Urban residential, markets and places of worship were the most heavily affected locations.

### POPULATED AREAS

As *Figure 6* shows, in 2015 when explosive weapons were used in populated areas, 92% of the deaths and injuries were reported to be civilians. This compares to 31% in other areas.

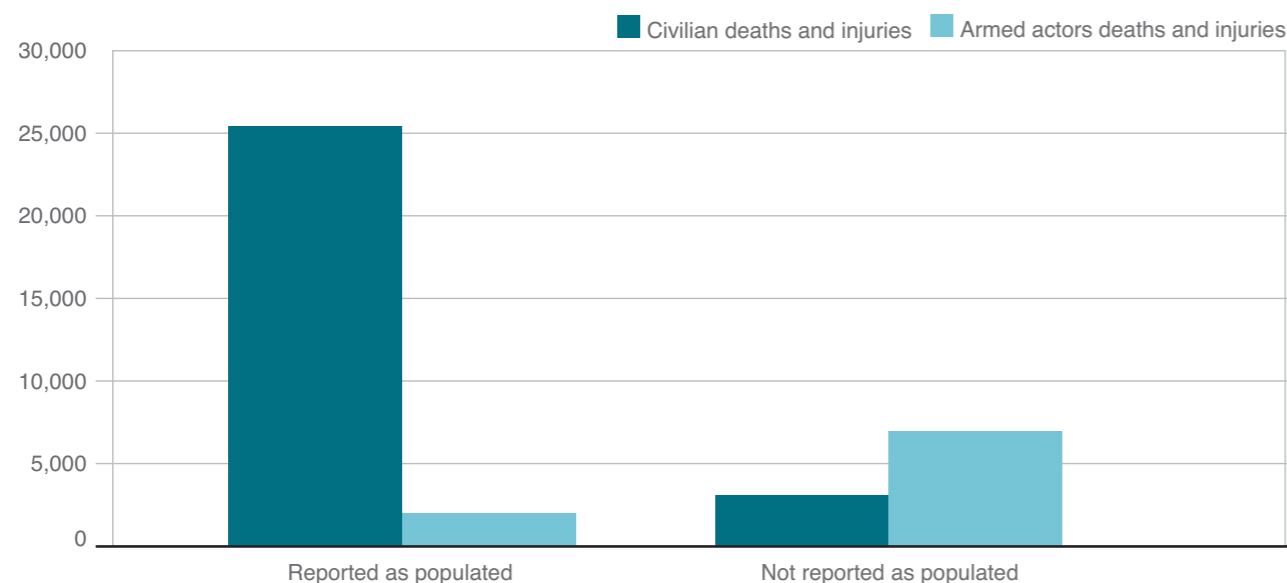
These percentages are consistent with the pattern of harm previously recorded by AOA. In every year of AOA's Explosive Weapons Monitoring Project, the use of explosive weapons in populated areas has proven particularly lethal to civilians. In 2011, 84% of deaths and injuries in populated areas were reported as civilians; in 2012, 2013 and 2014, this rose to 91%, 93% and 92% respectively.

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 2015.

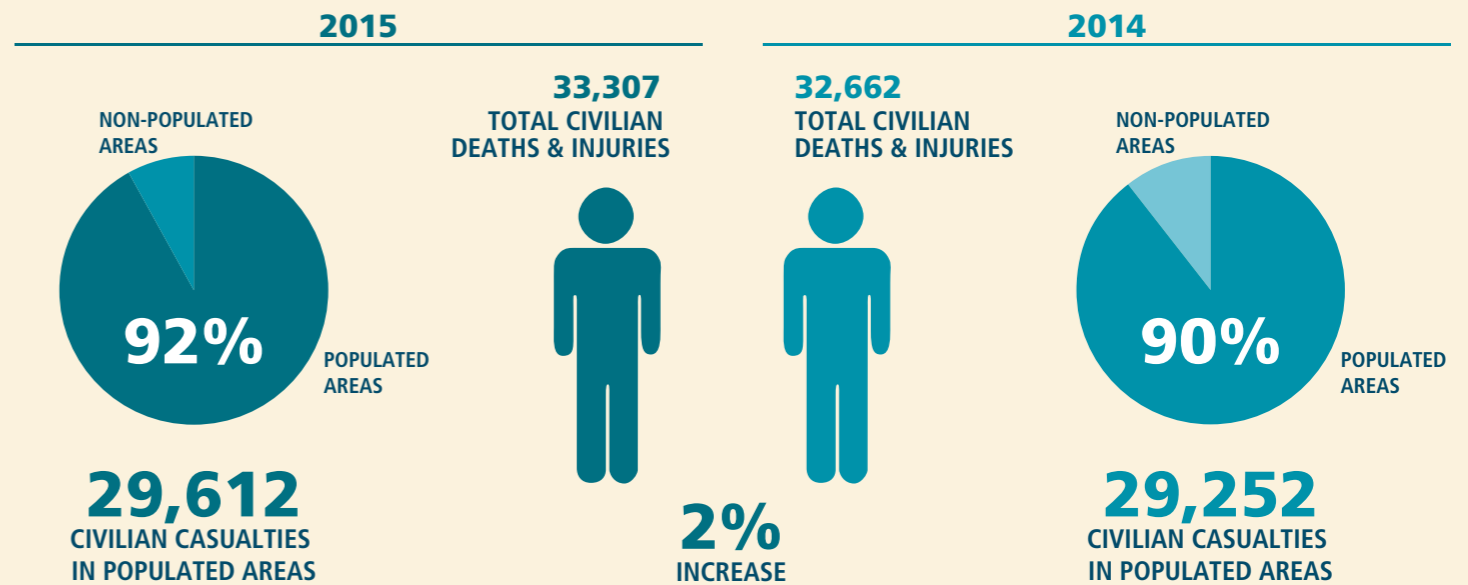
57% of the total incidents that AOA recorded in 2014 were in areas reported to be populated (1,236 incidents). Civilian deaths and injuries in populated areas, represented 89% of all reported civilian deaths and injuries, demonstrating the disproportionate effect of explosives deployed in populated areas.

AOAV recorded an average of 24 civilian casualties per incident of explosive weapon use in populated areas, compared to just four in other areas.

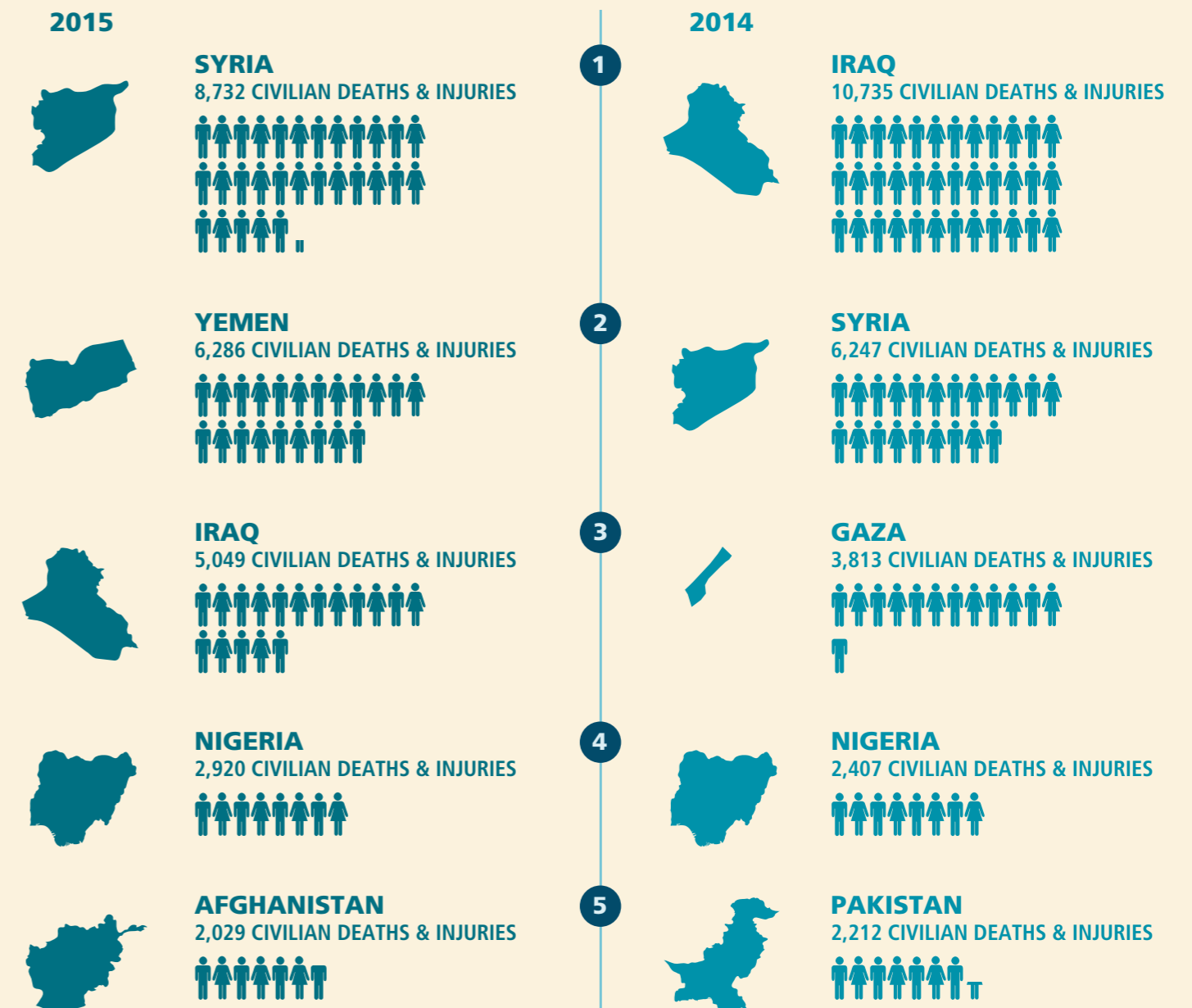
Figure 6 Total casualties by populated area / non-populated area



## CIVILIANS KILLED & INJURED: 2014 v 2015

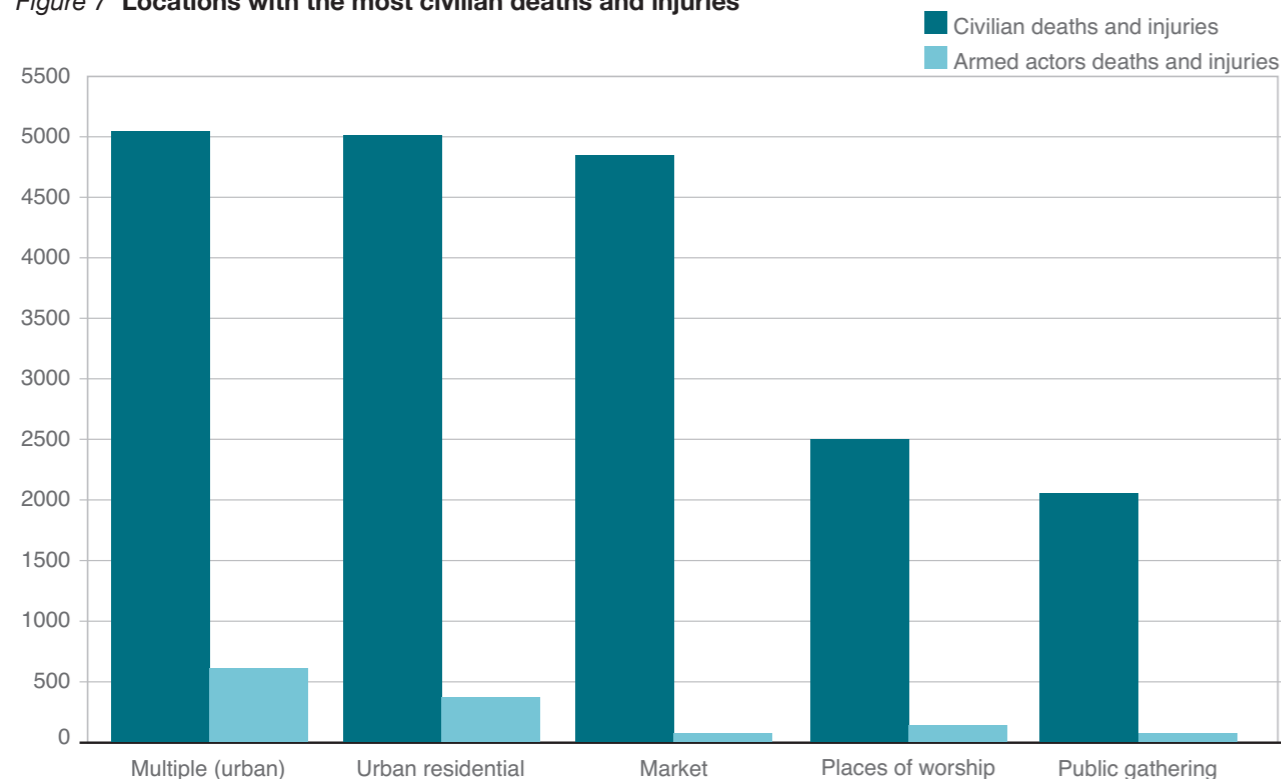


## THE MOST DANGEROUS PLACES TO BE A CIVILIAN



## LOCATIONS

Figure 7 Locations with the most civilian deaths and injuries



### HOMES

The highest number of civilians killed and injured was from incidents in residential areas or civilian houses. AOVAV recorded 290 such incidents in 2015, a fall of 25% from the previous year.<sup>28</sup> These incidents resulted in 5,024 civilian deaths and injuries – a rise of 43% from 2014.<sup>29</sup>

The lower number of incidents recorded is probably due to differences in reporting of different conflicts. In 2014, 41% of all of the incidents recorded in residential areas (161 incidents) took place in Gaza, where reporting is detailed. This allows for the recording of more low-casualty incidents and as a result a lower-recorded average harm – the average residential incident in Gaza in 2014 killed or injured 8 civilians.

In 2015, by comparison, the majority of incidents recorded in residential areas were high-casualty attacks in Syria and Yemen. There reporting is more difficult and reporting fatigue likely means that low-casualty attacks pass under the radar. It is also possible that 2015 saw higher incident numbers than 2014, given the escalation of the Yemen conflict and

of the Syrian-Russian campaign of airstrikes which began in September 2015. Incidents in residential areas were recorded in 36 countries – 8 more than in 2014.

42% of all incidents recorded in residential areas took place in Syria (75 incidents) and Yemen (47 incidents). Both countries saw attacks on residential areas with multiple different kinds of weapons.

In Syria, 72% of the 75 incidents recorded in residential areas involved ground-launched weaponry, representing attacks with a variety of weapon types by all sides in the conflict and focused particularly on Damascus and Aleppo. These incidents only accounted for 56% of the recorded civilian deaths and injuries (1,113 of 1,976 total), with airstrikes and IED attacks accounting for a disproportionate 40% between them.

In Yemen, on the other hand, air-launched weaponry accounted for 66% of the 47 incidents recorded in residential areas, largely representing air raids attributed to or suspected to be the work of the Saudi-led coalition. Particularly badly hit were San'aa (335 civilian deaths and injuries recorded in 14 air-launched

incidents) and Ta'iz (482 civilian deaths and injuries recorded in 6 air-launched incidents). Shelling on residential areas of Ta'iz (240 civilian deaths and injuries recorded in 5 ground-launched incidents) and Aden (380 civilian deaths and injuries recorded in 4 ground-launched incidents) were also particularly harmful.

### MARKET BOMBINGS

As was the case in 2014, attacks on markets were, perhaps predictably, among the most dangerous for civilians in 2015.

Last year, AOVAV recorded 115 incidents in markets, about 5% of all incidents recorded. This was similar to previous years. These incidents resulted in 4,859 civilian deaths and injuries – about 15% of all recorded deaths and injuries worldwide.

Whilst all areas that showed particularly high rates of civilian harm from explosive weapons also saw a relatively small number of armed actors killed or injured, attacks on markets are notable for the sheer numbers of civilians harmed.

AOVAV only recorded 59 armed actors killed or injured as a result of market incidents, meaning that for every armed actor recorded as killed or injured there were around 82 civilians. 37 of the armed actor deaths recorded were suicide bombers carrying out attacks. More than 99% of those killed or injured in these incidents were civilians.

70% of all market incidents recorded happened in three countries: Syria (15), Iraq (44), and Nigeria (21). In Iraq and Nigeria, all recorded marketplace incidents were IED attacks. Nigerian IED and suicide attacks are dealt with below in the section on IEDs. In Syria, however, the majority of incidents recorded in marketplaces were airstrikes – these had a particularly high civilian cost, killing and injuring an average of 134 civilians per incident. The most lethal incident recorded overall in 2015 was the 30 October airstrike on Douma marketplace in Damascus province, Syria, which killed and injured more than 600 civilians.<sup>30</sup>

In 2015, market bombings caused an average of approximately 42 civilian deaths and injuries per incident. This is a 40% increase from 2014.

### TARGETING

As in previous years, simply targeting armed actors with explosive weapons did not prevent civilians from being killed or injured. In 2015, 42% of those killed or injured by attacks which were explicitly coded as targeting armed actors were civilians. In populated areas this rose to 80%, whilst in non-populated areas it fell to 15%.

The percentages of those killed who were civilians were considerably higher in 2015 than in 2014. This is largely because of two countries – Yemen and Syria – where air-launched attacks have caused very high levels of civilian harm. In Yemen, 85% of those killed or injured by attacks that were claimed as targeting armed actors were reportedly civilians.

It is worth stressing that the use of explosive weapons that impact a wide area particularly endangers civilians, even if these weapons are directed at a military objective.

### WOMEN AND CHILDREN

The majority of media sources did not include reporting of the age or gender of any victims in 2015.

Women were reported among those killed and injured in 268 incidents, including those incidents where no figure was given. Overall, 690 women were reported killed or injured. This figure does not include armed actors. Likewise, it does not include, for example, female suicide bombers in Nigeria.

The majority of women who were killed or injured were the victims of attacks in populated areas. When women were specifically reported as killed or injured, it was found that 84% of these were in incidents in areas recorded as populated.

In 2015, AOVAV recorded 985 child deaths and injuries in 345 incidents. Of these, a gender was given for 175 individuals, of whom 121 were girls and 54 were boys. The rest were reported without specifying gender. In 60 incidents, no figures were given for numbers of children killed or injured but children were reported to be amongst the victims. Of the incidents which were reported as killing or injuring children, 82% took place in populated areas.

## AIR-LAUNCHED EXPLOSIVE WEAPONS



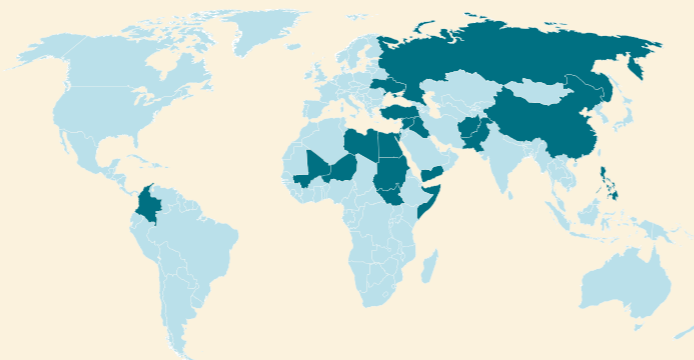
**9,200**  
CIVILIANS KILLED & INJURED IN 2015



4 IN 10 INCIDENTS OCCURRED IN POPULATED AREAS



91% OF DEATHS & INJURIES IN POPULATED AREAS WERE CIVILIANS



INCIDENTS WERE RECORDED IN 20 COUNTRIES AND TERRITORIES IN 2015

## GROUND-LAUNCHED EXPLOSIVE WEAPONS



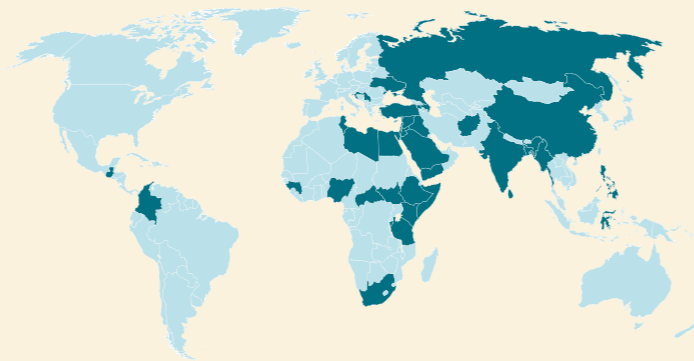
**7,095**  
CIVILIANS KILLED & INJURED IN 2015



7 IN 10 INCIDENTS OCCURRED IN POPULATED AREAS



91% OF DEATHS & INJURIES IN POPULATED AREAS WERE CIVILIANS



INCIDENTS WERE RECORDED IN 45 COUNTRIES AND TERRITORIES IN 2015

## IMPROVISED EXPLOSIVE DEVICES (IEDs)



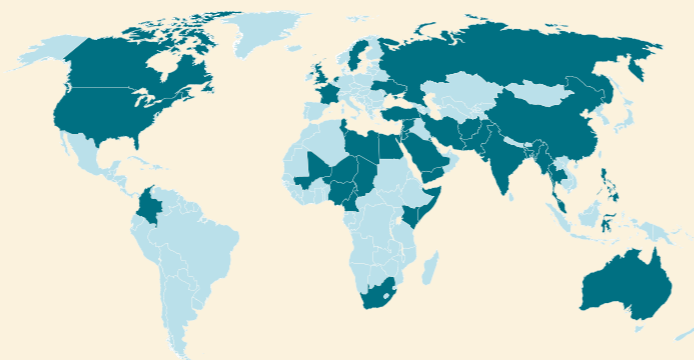
**16,199**  
CIVILIANS KILLED & INJURED IN 2015



6 IN 10 INCIDENTS OCCURRED IN POPULATED AREAS



94% OF DEATHS & INJURIES IN POPULATED AREAS WERE CIVILIANS



INCIDENTS WERE RECORDED IN 45 COUNTRIES AND TERRITORIES IN 2015

## Explosive weapon 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 AOA 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, AOA 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.<sup>31</sup> 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, AOA records casualties from attacks where multiple launch methods are used to deploy explosive weapons. AOA also records reported casualties of landmines. These are excluded from analysis in the following sections.<sup>32</sup>

Figure 8 Civilian casualties by weapon type in 2015

Weapon type	Civilian casualties	Average civilian casualties per incident
<b>Air-launched</b>	<b>9,200</b>	<b>18</b>
Air strike	6,452	15
Air-dropped bomb	2,149	42
Missile	486	24
Rocket	113	28
Multiple explosive weapons	0	0
<b>Ground-launched</b>	<b>7,095</b>	<b>11</b>
Mortar	2,021	11
Grenade	801	5
Shelling	1,504	10
Rocket	1,450	16
Artillery shell	345	9
Multiple explosive weapons	802	26
Missile	130	6
RPG	34	5
Tank shell	8	4
<b>IED</b>	<b>16,199</b>	<b>18</b>
Non-specific IED	9,785	19
Car bomb	5,056	25
Roadside bomb	469	3
Multiple explosive weapons	889	111
<b>Mines</b>	<b>62</b>	<b>2</b>
<b>Combination or unclear launch methods</b>	<b>751</b>	<b>26</b>

## Air-launched explosive weapons

Air-launched explosive weapons killed and injured **9,200** civilians in 2015 (28% of all recorded).

Civilian deaths and injuries from aerial explosive weapons in 2015 **rose by 57%** from 2014 levels.

**20 countries** and territories saw deaths and injuries in 2015. Almost half (46%, 4,376 people) were in Syria, and another 43% (3,972 people) were in Yemen.

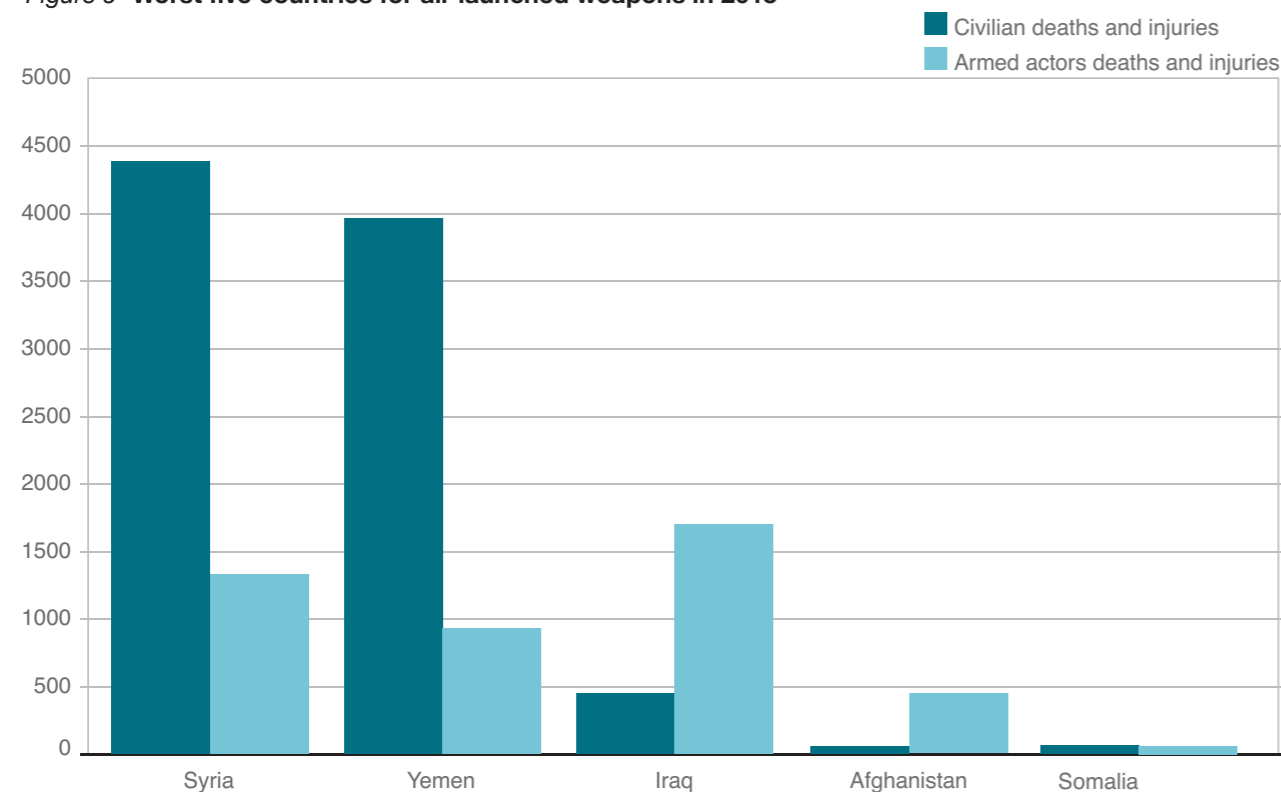
### DEATHS AND INJURIES

Air-launched explosive weapons include a wide variety of ordnance, from bombs dropped out of planes or helicopters to missiles fired by unmanned drones.

Consistent with broader trends, AOA V recorded 501 incidents of air-launched weapon use in 2015 – a 47% fall from the year before. This drop can probably be partially attributed to the highly detailed reporting of Gaza airstrikes during Operation Protective Edge in 2014, and might not reflect an actual drop in the number of incidents – many of which are in areas where foreign press agencies are largely absent.

Nonetheless, 9,200 civilian deaths and injuries were recorded in incidents involving air-launched weapons. In spite of the fall in incident numbers, this represents an increase of 57% in the number of civilian deaths and injuries caused by air-launched weapons compared to 2014. Air-launched weaponry accounted for 28% of all civilian deaths and injuries recorded worldwide.

Figure 9 Worst five countries for air launched weapons in 2015



*First there was a loud explosion – dirt flying in the air - followed immediately by shock. In just a few moments, people were screaming, the smell of burning was in the air and there was just chaos.*

**Mohammed Qurabi al-Ghazal, Syrian activist,**  
following an air strike, Ariha, Idlib province, December 2015<sup>iv</sup>

In total, AOA V recorded 14,763 total deaths and injuries from aerial explosive weapons in 2015. Civilians accounted for 62% of these casualties, a similar share to previous years.<sup>33</sup> When aerial explosive weapons were used in areas reported as being 'populated', 91% of those killed and injured were civilians – a rise from 2014, when the figure was 84%. In areas which were not recorded as populated, that figure dropped to 21%.

In 2015, 43% of incidents involving air-launched weaponry were recorded in populated areas. This is similar to the figures in 2012 (45%), and 2013 (47%). In 2014, the figure was considerably higher (63%), which can probably be accounted for by the intensity of Operation Protective Edge in Gaza.

### COUNTRIES

The majority of civilian casualties from air-launched explosive weapons in 2015 were recorded in Syria and Yemen (see Figure 9). Iraq also saw significant casualty numbers, although in Iraq – uniquely – most deaths and injuries recorded were of armed actors. This is in part due to a continuation of the US-led coalition campaign against ISIS and al-Qaeda affiliates in Iraq and Syria, as well as the Syrian government's own attacks on opposition-held areas. Since September 2015, Russian jets have also been launching missions within Syria.

Yemen, the second most badly affected country, previously had low numbers of incidents involving air-launched weaponry. In March 2015, however, a Saudi-led coalition of largely Arab states began Operation Decisive Storm, an aerial intervention against the Houthi rebels. This intervention has been widely criticised for indiscriminate targeting of civilian areas

and the use of internationally-banned cluster bombs. Of the incidents that AOA V recorded in Yemen, 55% (76 incidents) were in populated areas.

### USERS

The Saudi-led coalition involved in the Yemen intervention was the most prolific user of air-launched weaponry in 2015, accounting for 26% (128 incidents) of all incidents recorded. Individual member states of the coalition are not typically specified in reporting, although AOA V did record one incident attributed to the United Arab Emirates. The Syrian government and the US-led coalition came second and third, accounting for 16% (82 incidents) and 15% (73 incidents) of all recorded incidents respectively.

The figures show a considerable reduction in the number of incidents attributed to Syrian state forces from 2014.<sup>34</sup> There are a number of possible explanations for this phenomenon. It may reflect the increased difficulties of reporting from within Syria, as well as factors such as reporting fatigue after 5 years of war.

Due to Syria's increasingly crowded skies, particularly after the beginning of the Russian intervention in September, there are also problems with attribution. Russian and Syrian planes launch raids against similar targets, and whilst Russian involvement has been alleged in numerous incidents it is typically denied. At the same time, responsibility for these incidents cannot be unproblematically assigned to the Syrian government. Nonetheless, of incidents within Syria itself the Syrian government was recorded as responsible for just over half (54%).

AOA V recorded no incidents of non-state actors using air-launched weaponry in 2015.

## Ground-launched explosive weapons

Ground-launched explosive weapons were responsible for **7,095** civilian deaths and injuries in 2015 (21% of the total recorded).

**81%** of those killed and injured were civilians. In populated areas this figure rose to 91% – compared to 45% elsewhere.

Mortars continued to be the single most dangerous weapon type to civilians, resulting in **2,021** civilian deaths and injuries. However, there was a considerable fall in the number of mortar-related deaths and injuries overall.

### DEATHS AND INJURIES

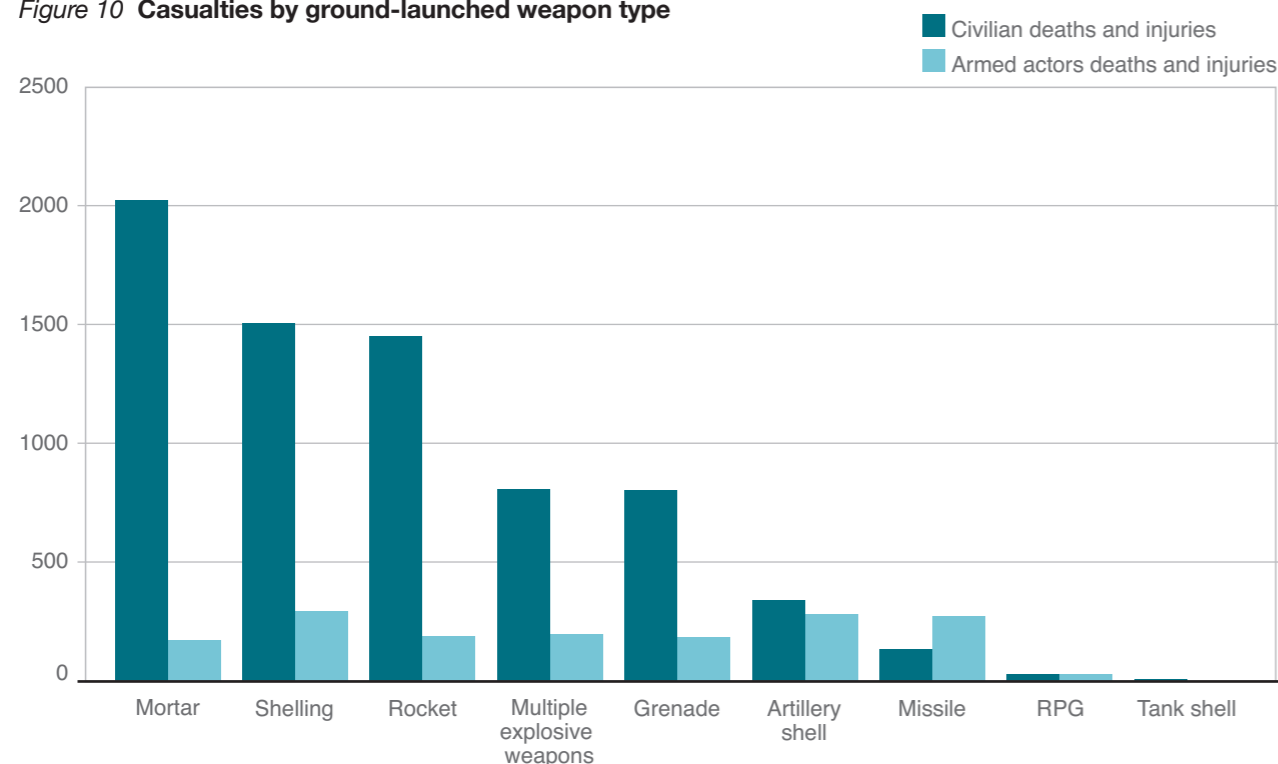
Ground-launched weapons are manufactured conventional ordnance that range from small hand grenades to heavy artillery and multiple rocket launchers. They can be fired from a variety of platforms, but all are launched from surface level.

In total, these weapons reportedly killed and injured 8,732 people in 2015. 7,095 of these were civilians (20% of all recorded civilian deaths and injuries). This represents a fall of 15% from the civilian figure recorded in 2014.<sup>35</sup>

In 2015, civilians made up 81% of all those killed or injured by ground-launched weapons. In populated areas the figure rose to 91%, consistent with trends seen with other weapon types.

As in previous years, ground-launched attacks were more likely to be reported in populated areas than other kinds of incident. 67% of all ground-launched incidents recorded were reported as taking place in populated areas, compared to 43% of air-launched incidents and 59% of IED incidents.

Figure 10 Casualties by ground-launched weapon type



A resident of Mariupol in Eastern Ukraine passes a shell hole caused by a Grad Rocket attack in 2015.

### COUNTRIES

AOAV recorded casualties from ground-launched explosive weapons in 45 countries and territories in 2015, five more than in 2014. More than a third (39%) of these deaths and injuries were in Syria, and another fifth (20%) in Yemen. Ukraine and Iraq were also badly affected.

Ground-launched explosive weapons were widely-used by both state forces and non-state actors in 2015. Non-state actors were recorded as responsible for 46% of incidents and state actors for 15% – the remainder being unattributed.

### SPECIFIC TYPES

Figure 10 illustrates the range of ground-launched weapon types that AOAV tracks and their respective impact on civilians in 2015.

Compared to 2014, mortars accounted for less of the total reported deaths and injuries, and caused a lower

number of civilian deaths and injuries. More than half (57%) of all mortar incidents reported took place in Syria and Iraq.

Deaths and injuries from rockets and non-specific shelling (which may include mortars) rose compared to 2014. The majority of recorded civilian deaths and injuries as a result of both shelling and rocket fire took place in Syria (608 civilian deaths and injuries from shelling, 736 from rockets) and Yemen (439 from shelling, 276 from rockets). Ukraine was also badly affected (274 from shelling, 210 from rockets).

*I saw blood everywhere and people running in every direction... We wait at this bus stop every day.*

**Resident of Latakia, Syria,**  
after mortar shelling on  
10 November 2015<sup>v</sup>

## Improvised explosive devices (IEDs)

IEDs were responsible for **16,199** civilian deaths and injuries (49% of the total recorded in 2015).

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

There was a **5% decrease** in the number of civilian deaths and injuries caused by IEDs compared to 2014 (16,199 down from 17,098).

Suicide bombings were recorded in **21** countries, the largest number ever recorded by AOV. They killed and injured a total of **9,205** civilians.

### DEATHS AND INJURIES

In 2015, AOV recorded 19,025 deaths and injuries as a result of improvised explosive devices, of which 16,199 were civilians (85%). This is a similar percentage to previous years.

There was a decrease of 5% in recorded deaths and injuries from 2014, continuing a trend of falling overall deaths and injuries. There was also a marked decrease (18%) in the number of incidents recorded compared to 2014.<sup>36</sup> This is consistent with the general trend in 2015 of higher lethality. On average, each IED attack in 2015 killed and injured 18 civilians, higher than 2014 (when the average was 16).

For the first time in AOV's five years of recording, IED deaths and injuries did not constitute a majority of deaths and injuries recorded worldwide. Nonetheless, they still accounted for the largest number of civilian deaths and injuries of any weapon type (compared with 7,095 caused by ground-launched weaponry and 9,200 caused by air-launched weaponry).

As with other kinds of weapon, IEDs caused particularly high levels of civilian harm when used in populated areas, which was the case in 59% of all recorded attacks – totalling some 538 incidents. In these incidents, 94% of reported deaths and injuries were civilians, contrasting with 43% in other areas. On average, an IED incident in a populated area killed or injured 27 civilians. This represents a rise of 25% from the average in 2014.

### COUNTRIES

In 2015, IEDs resulted in at least one casualty in 45 different countries and territories, nine more than the previous year. This is the highest number ever recorded by AOV. *Figure 11* shows the seven countries which saw the most civilian casualties from IEDs in 2015.

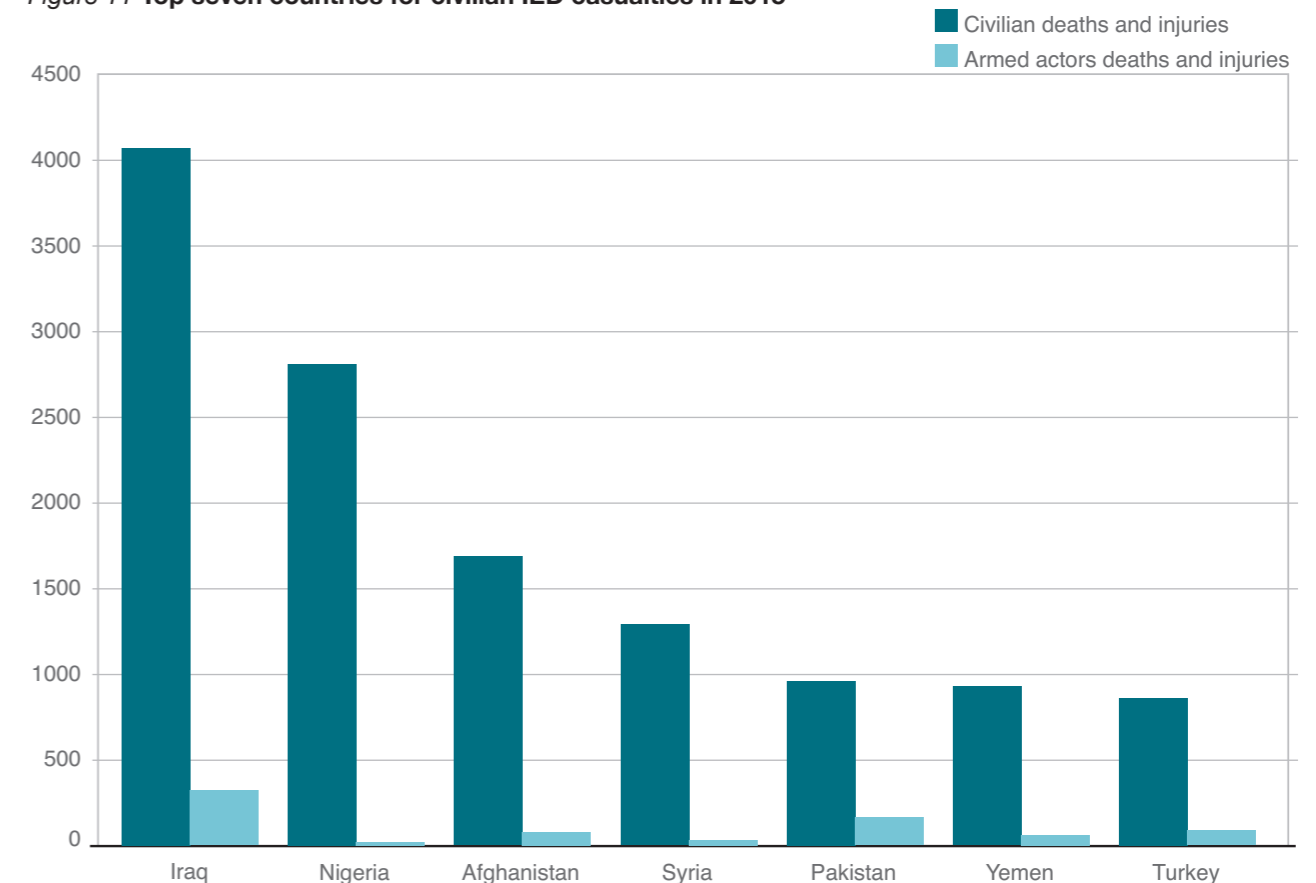
In 2015, seven countries saw more than 500 civilian deaths and injuries from IED attacks.

Iraq continued to be the country most badly affected by IED incidents, including both suicide and non-suicide IED attacks, although the number of recorded deaths and injuries fell by 62%.<sup>37</sup> This should not be taken to show a lower level of IED-related violence in Iraq. 94% of those civilian deaths and injuries recorded were in Baghdad Province and the south-western region of neighbouring Diyala Province (immediately adjacent to Baghdad). Attacks in areas more remote from the capital may well go unreported or underreported in English language media.

*The explosion happened in the morning around 8.30am inside Jamila market. It was a big lorry full of tomatoes and the driver was shouting in the middle of the market that he had very cheap [produce]. So people came close to him and then he blew himself up.*

**Ali, 28**  
a merchant from Jamila, Baghdad,  
August 2015<sup>vi</sup>

Figure 11 Top seven countries for civilian IED casualties in 2015



Nigeria, Afghanistan and Syria also continued to experience high levels of deaths and injuries as a result of IED attacks.

Yemen and Turkey both saw precipitous rises in IED-inflicted deaths and injuries. In the case of Yemen, this can probably be attributed to the collapse in the security situation and the increased activities of AQAP and local ISIS affiliates. In Turkey, an escalation in the internal conflict between Kurdish nationalists and the central government saw IED attacks of various kinds launched against security forces and, increasingly, against civilians. At the same time, ISIS launched a number of high-profile attacks against targets within Turkey.

### USERS

IEDs were exclusively used by non-state actors in 2015. AOV recorded IED usage by 27 non-state entities. In 579 incidents (70%) the perpetrator was not reported and no group claimed responsibility. Of the 328 incidents for which responsibility was assigned, 100 were attributed to ISIS.

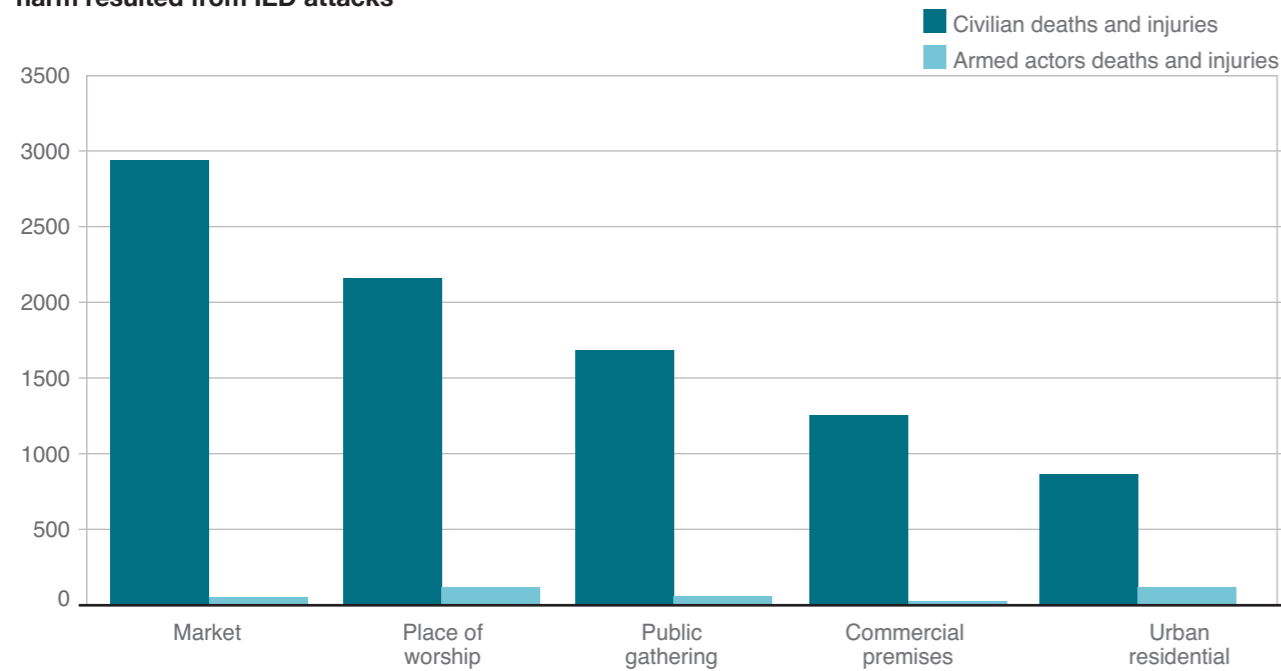
The largest numbers of civilian deaths and injuries were caused by ISIS (4,943), Boko Haram (873) and the Taliban (521). Note however that Boko Haram no longer generally claim attacks, meaning that most incidents which were likely perpetrated by the group are reported as 'suspected' or 'alleged'. In these cases, AOV does not record these attacks as being perpetrated by Boko Haram. West African suicide bombings specifically are discussed below.

*Figure 12* (overleaf) shows the locations where the most civilian harm resulted from IED attacks.

As in 2014, IED attacks in markets caused the highest number of civilian deaths and injuries in 2015. AOV recorded 81 incidents of this kind resulting in 2,949 deaths and injuries. Other particularly badly affected areas included places of worship and public events such as funerals, parades or gatherings of pilgrims. This is to be expected as these areas often have a particularly dense concentration of civilians.



Figure 12 Locations where the most civilian harm resulted from IED attacks



**DELIVERY METHOD AND DETONATION MECHANISM**

AOAV’s recording distinguishes between car bombs,<sup>38</sup> roadside bombs and more general non-specific IEDs. The majority of incidents (58%) reported were recorded as non-specific IEDs. Car bombs accounted for a further 22% and roadside bombs for 19%. As is to be expected given their greater payload capacity, car bombs were the most fatal kind of IED for civilians, killing and injuring on average 25 civilians per incident.

For the majority of IED incidents no detonation mechanism was reported. Often the detonation mechanism is not clear after a bomb has exploded, and even if there is a local capacity to investigate a lack of follow-up or security concerns means this information never makes it to publication. Nonetheless, AOAV recorded detonation mechanisms for 42% of reported incidents.

As Figure 13 shows, IED attacks that involved multiple types and a combination of detonation methods unsurprisingly caused higher levels of civilian harm. The figure for timed detonation is also high, but reflects only a single incident (which caused 33 civilian deaths and injuries).

These attacks were relatively rare in 2015, and made up less than 1% of IED incidents recorded by AOAV. The next section explores the impacts of other IED detonation types.

**Victim-activated IEDs**

Victim-activated devices are most commonly detonated when a person or animal stands on them, or when they are driven over.<sup>39</sup> IEDs detonated in this fashion are considered as de facto antipersonnel mines under the Mine Ban Treaty and are therefore prohibited under international humanitarian law.<sup>40</sup> Their random trigger mechanism means that they cannot distinguish between armed actors and civilians, and as such are inherently indiscriminate.

AOAV recorded 69 incidents involving victim-activated IEDs in 2015. 36% took place on roads.

In 2015, victim-activated IEDs resulted in the lowest average civilian deaths and injuries per incident, with four civilians being killed or injured in each attack. This is consistent with AOAV’s findings from previous years.

**Command-operated IEDs**

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

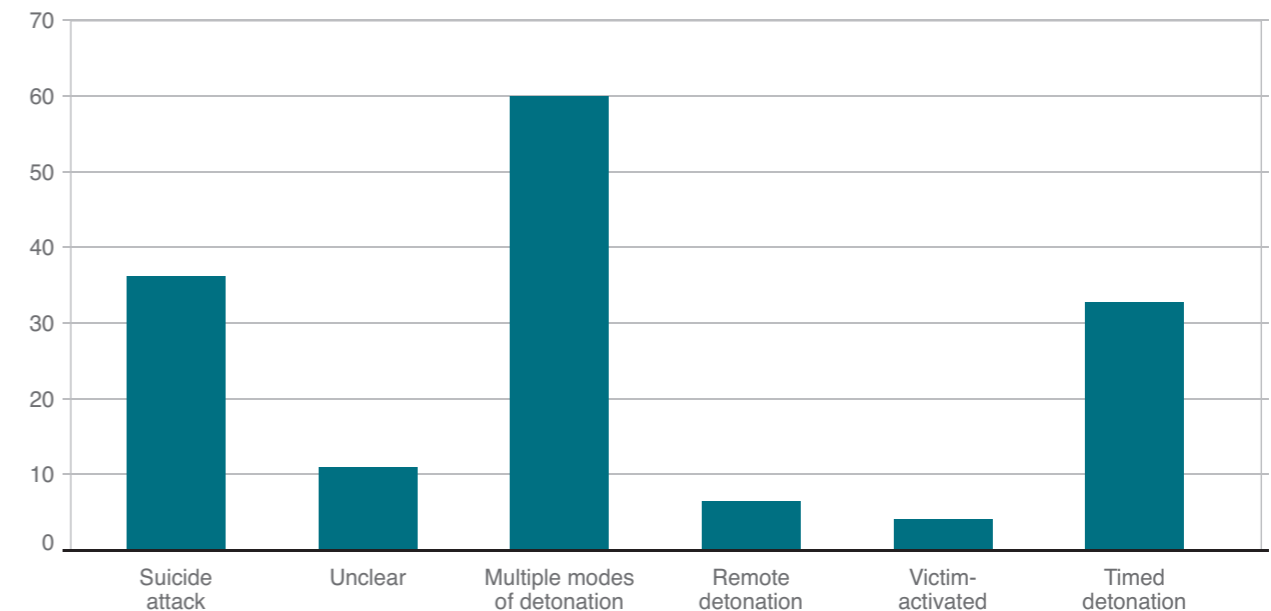
Command-operated IEDs should technically provide the greatest level of control for a user. However, this is not necessarily an assurance of higher protection standards for civilians from incidental harm.

AOAV recorded an average of seven civilian deaths and injuries per remote-detonated IED attack in 2015. Even where they are used to target armed actors, civilians were often killed or injured by these IEDs in 2015, 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.

In 2015, 60% of remote-detonation incidents recorded took place on roads.

Remotely-detonated IEDs are particularly harmful to civilians when used in populated areas. In those attacks 93% of those harmed were civilians, compared to 25% in non-populated areas.

Figure 13 Average civilian deaths and injuries by IED detonation method



**Suicide bombings**

Suicide bombings, including car bombs operated by suicide bombers, are a form of command-operated IEDs. In total AOAV recorded 253 suicide bombings in 2015, killing a reported 10,696 people. 9,205 of those killed and injured were civilians (86%), representing a sharp rise of 67% from 2014.<sup>41</sup>

On average, 36 civilians were killed and injured by each suicide bombing – 14 more than in 2014, when the average was 22. This represents an increase of 64% in the average number of civilian victims per suicide attack, and as such is of deep concern.

Although suicide bombings represented only 28% of all IED incidents recorded, they accounted for 66% of all deaths and injuries from IED attacks.

64% (162 incidents) of the suicide bombings reported were recorded as non-specific IEDs, which in the case of suicide bombings largely refers to suicide vests. 34% (87 incidents) were recorded as car bombs. Although car bombs might be expected to cause more deaths and injuries, given the capacity for a larger explosive payload, this was not the case in 2015: suicide car bombs caused an average of 26 civilian deaths and injuries per incident, whilst non-specific IED attacks caused 40.

AOAV recorded suicide attacks in 21 countries, the largest number ever recorded by AOA. The countries worst affected by suicide bombing were Nigeria (2,181 civilian deaths and injuries), Iraq (1,485), Afghanistan (1,052), Turkey (709) and Syria (684). 25% of all incidents recorded were in Nigeria.

Iraq fell from its previous position as the worst-affected country by suicide bombings. This is representative of a broader trend of lower levels of violence reported in Iraq. However, this should not be taken to imply a fall in levels of suicide violence, since many suicide attacks carried out in Iraq are not reported by English-language media. In January 2016, for example, ISIS reported launching 61 separate suicide attacks across Iraq and Syria. Research by AOA suggests that these numbers are approximately accurate and representative of the average month.

Nigeria saw a sharp increase of 190% in civilian deaths and injuries from suicide bombings and a 167% increase in the number of suicide bombings reported compared to the previous year. Although

they no longer claim most attacks, Boko Haram is probably responsible for most of these incidents.

Despite assertions by the Nigerian government that Boko Haram have been 'technically defeated', suicide bombings were also reported this year in neighbouring Cameroon (10 incidents killing and injuring 464 civilians) and Chad (7 incidents, 459 civilian deaths and injuries) for the first time.

If Boko Haram is responsible for all of these incidents (81 in total), then this would make them the most prolific user of suicide bombings recorded by AOA in 2015.

As with elsewhere, when suicide bombings were used in populated areas they inflicted much higher levels of civilian harm. 73% of recorded incidents took place in populated areas. In these attacks around 94% of those killed and injured were civilians. This compares to 35% in other areas. Suicide attacks in populated areas caused an average of 47 civilian deaths and injuries per incident.



Air strike in Sana'a, Yemen, May 2015, (flickr.com/photos/ibrahemqaism/20352638644)

## Conclusion

More civilian deaths and injuries, from more incidents of explosive violence, were recorded in 2015 than in any of the four previous years that AOA has been monitoring explosive weapon use.

2015 is the fourth consecutive year in which there has been a reported rise in civilian deaths and injuries from explosive weapons, up 2% from 2014 and up 65% since 2011, when AOA first began recording.

Over five years, AOA has now recorded 188,331 deaths and injuries as a result of explosive violence. Over three-quarters of all of these were civilians (145,569 deaths and injuries or 77% of the total). Year on year, civilians have consistently borne the burden of reported explosive violence.

Civilians are at the most risk from explosive weapons when these weapons are used in populated areas. This was true again in 2015, when civilians made up 92% of casualties in populated areas, compared to 31% 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 50 states around the world who have spoken out against the use of explosive weapons in populated areas. Reflecting the urgent nature of this humanitarian problem, the UN Secretary-General and the head of the International Committee of the Red Cross issued an unprecedented

warning in 2015, calling on states to stop the use of heavy explosive weapons in populated areas.

In July 2015 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. This was the second such meeting, and demonstrates an increased dedication towards the development of a political commitment towards ending the use of explosive weapons in populated areas. AOA also convened a meeting of experts to address the humanitarian impact of improvised explosive devices (IEDs) in September 2015.

AOA 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.

*The sound of the rocket was extremely frightening. Then a huge explosion happened in front of my eyes. I've never seen anything like it before in Talbiseh. The scale was far worse than anything the Syrians have done. The destruction was huge and horrible. Buildings were destroyed completely. And streets just disappeared under clouds of dust and rubble as the walls fell.*

**Firas al-Said**  
Resident of Talbiseh, Syria, October 2015<sup>vii</sup>

## 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.<sup>50</sup> 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.<sup>51</sup>
- States and international organisations should publicly 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.<sup>52</sup>
- 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.
- States should help track, collect, analyse, investigate and report systematically on violations of international humanitarian law to enhance compliance and accountability.
- 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 five years the importance of systematic and continuous monitoring of explosive violence and its impacts in populated areas. This monitoring must continue in order to assess whether recommendations are put into effect.

*Iraqis have gone through so much, to the level that they can't measure anymore the scale of violence and whether the attacks are bigger or smaller than before. They have been exposed to all sorts of violence and terror and most of them are numb.*

**Dr Ammar al-Fayadh**

Dean of Nahran University, Baghdad, August 2015<sup>viii</sup>

## 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.<sup>53</sup> 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 2015.**

### 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. The most commonly-used sources are AP, AFP and Reuters.

### RECORDING GUIDELINES

**Civilian/ armed actor or security personnel:** All casualties are assumed to be civilians unless otherwise stated. Casualties are recorded as 'armed actors'



Woman walks past a shrapnel hole caused by a Grad rocket in Mariupol, Eastern Ukraine - 2015.

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 in inhabited towns or villages, or as in camps or columns of refugees or evacuees, or groups of nomads."*<sup>54</sup>

**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. This limitation is discussed with specific reference to the conflict in Syria on page 14.

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 AOVAV. There is no systematic base-line for determining what constitutes an injury, and AOVAV 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 AOVAV 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.<sup>55</sup>

AOVAV is focused on capturing the harm caused by explosive weapons at the time of use. Accidental detonations are recorded but not included in the overall figures. AOVAV recorded 47 incidents of accidental detonation resulting in 201 deaths and injuries, 92 of whom were civilians.

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 2015 AOVAV recorded 41 incidents involving unexploded ordnance causing 332 civilian deaths and injuries in 20 different countries and territories. The actual number of casualties from ERW is likely to be far higher.<sup>56</sup>

Poorly secured or stockpiled explosive weapons can also cause unintended harm to civilians. AOVAV recorded two stockpile explosions in 2015.<sup>57</sup>

Media reports used by AOVAV 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 190 incidents out of 2,170 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.



A shopkeeper stands outside her destroyed stall, gutted by a Grad Rocket. Eastern Ukraine, 2015

## Notes

1 The definition of a populated area used by AOV 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](http://www.state.gov/documents/organization/190579.pdf) (accessed 10 March 2015). AOV’s guidelines for recording an area as populated are included in the Methodology.

2 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 2015*, December 2015, <http://the-monitor.org/index.php/LM/Our-Research-Products/LMM14> (accessed 14 May 2015).

3 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.

4 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 2015).

5 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 2015).

6 “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/](http://armscontrolcenter.org/issues/missiledefense/articles/fact_sheet_us_ballistic_missile_defense/) (accessed 11 April 2015).

7 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](http://www.smallarmssurvey.org/fileadmin/docs/H-Research_Notes/SAS-Research-Note-2.pdf) (accessed 26 March 2015).

8 Medecins sans Frontières, “Syria: At least 550 wounded in horrific market-bombing in Damascus besieged area,” Medecins sans Frontières, 31 October 2015, [www.msf.org/article/syria-least-550-wounded-horrific-market-bombing-damascus-besieged-area](http://www.msf.org/article/syria-least-550-wounded-horrific-market-bombing-damascus-besieged-area) (accessed 23 March 2016).

9 Middle East Eye, “Death toll in Ankara attack rises to 102: prosecutors,” *Middle East Eye*, 16 October 2015, [www.middleeasteye.net/news/death-toll-ankara-attack-rises-102-prosecutors-1060248744](http://www.middleeasteye.net/news/death-toll-ankara-attack-rises-102-prosecutors-1060248744) (accessed 23 March 2016).

10 Ian Black, “Yemen suicide bombings leave over 130 dead after mosques targeted,” *The Guardian*, 20 March 2015, [www.theguardian.com/world/2015/mar/20/isis-claims-mosque-suicide-bombing-as-its-first-atrocity-in-yemen](http://www.theguardian.com/world/2015/mar/20/isis-claims-mosque-suicide-bombing-as-its-first-atrocity-in-yemen) (accessed 23 March 2016).

11 Noah Browning, “Air strike on missile base in Yemen kills 25, wounds hundreds,” *Reuters*, 20 April 2015, [www.reuters.com/article/us-yemen-security-idUSKBN0NBOR820150420](http://www.reuters.com/article/us-yemen-security-idUSKBN0NBOR820150420) (accessed 23 March 2016).

12 Al Jazeera America, “Yemen between Saudi-led coalition, Houthi rebels begins in Yemen,” *Al Jazeera America*, 12 May 2015, <http://america.aljazeera.com/articles/2015/5/12/air-strikes-hit-yemen-capital-hours-before-cease-fire.html> (accessed 23 March 2016).

13 Dominic Evans, “Syrian army bombards Douma as air raid toll rises,” *Reuters*, 17 August 2015, [www.reuters.com/article/us-mideast-crisis-syria-attack-idUSKCN0QM0RZ20150817](http://www.reuters.com/article/us-mideast-crisis-syria-attack-idUSKCN0QM0RZ20150817) (accessed 23 March 2016).

14 Fox News staff, “At least 57 civilians killed in rocket attack blamed on Houthis in Yemen,” 19 July 2015, <http://latino.foxnews.com/latino/news/2015/07/19/at-least-57-civilians-killed-in-rocket-attack-blamed-on-houthis-in-yemen/> (accessed 23 March 2016).

15 Mirwais Harooni and Jessica Donati, “Dozens killed as wave of bomb attacks hits Kabul,” *Reuters*, 7 August 2015, <http://www.reuters.com/article/us-afghanistan-attack-idUSKCN0QC1U920150807> (accessed 23/03/2015).

16 Kevin Conlon, Jason Hanna and Mohammed Tawfeek, “Sinister ISIS plot kills 120, wounds 140 in Iraq,” *CNN*, 19 July 2015, <http://edition.cnn.com/2015/07/18/middleeast/iraq-violence/> (accessed 23 March 2016).

17 Kareem Shaheen, “ISIS claims responsibility as suicide bombers kill dozens in Beirut,” *The Guardian*, 12 November 2015, [www.theguardian.com/world/2015/nov/12/beirut-bombings-kill-at-least-20-lebanon](http://www.theguardian.com/world/2015/nov/12/beirut-bombings-kill-at-least-20-lebanon) (accessed 23 March 2016).

18 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 32-33.

19 In 2011 AOV recorded an average of 16 civilian deaths per day; an average of 22 in 2012, 25 in 2013 and 29 in 2014.

20 These only include casualties from an explosive weapon at its time of use. AOV 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 32-33.

21 In alphabetical order these were; Australia, Burundi, Cameroon, Canada, Chad, Croatia, Cyprus Ethiopia, France, Guatemala, Guinea, Indonesia, Jordan, Kuwait, Mexico, the Netherlands, Niger, Peru, Saudi Arabia, Serbia, Sri Lanka, the UK and Venezuela.

22 Iraq Body Count, which aims to keep comprehensive figures, recorded 16,115 deaths alone (not including injuries). Although this figure includes victims of non-explosive violence and some combatants and is thus not directly comparable to AOV’s data, it is suggestive of the broad scale of harm. See “Iraq 2015: A Catastrophic Normal,” Iraq Body Count, 1 Jan 2016, <https://www.iraqbodycount.org/analysis/numbers/2015/> (accessed 21 March 2016).

23 Iraq, Syria, Pakistan, Afghanistan and Lebanon.

24 Magdy Samaan, “Egyptian forces accidentally ‘bomb’ Mexican tourist convoy killing 12,” *The Telegraph*, 14 Sep 2015, [www.telegraph.co.uk/news/worldnews/africaandindianocanoegypt/11862925/Egyptian-forces-accidentally-attack-Mexican-tourist-convoy-killing-12.html](http://www.telegraph.co.uk/news/worldnews/africaandindianocanoegypt/11862925/Egyptian-forces-accidentally-attack-Mexican-tourist-convoy-killing-12.html) (accessed 23 March 2016).

25 In alphabetical order, these states were Afghanistan, Armenia, Azerbaijan, Burma, Burundi, Canada, Colombia, Egypt, France, India, Iraq, Israel, Jordan, Kenya, Lebanon, Libya, Nigeria, Pakistan, the Philippines, Russia, Somalia, Sudan, Syria, Turkey, the UK, Ukraine, the UAE, the USA and Yemen.

26 In 2014 non-state actors were recorded as responsible for 9,223 deaths and injuries, of whom 80% were civilians (7,338).

27 Non-state actors named as causing casualties with explosive weapons, in alphabetical order, were the Abu Sayyaf Group (Philippines), Ajnad Misr (Egypt), al-Shabaab (Kenya and Somalia), the al-Mukhtar Army (Iraq), al-Qaeda in the Arabian Peninsula (AQAP, Yemen), the Bangsamoro Islamic Freedom Fighters (the Philippines), Boko Haram (Nigeria, Chad, Cameroon and Niger), the DHKP-C (Turkey), the Communist Party of the Philippines (Philippines), the ELN (Colombia), FARC (Colombia), Free-dom Falcons of Kurdistan (Turkey), Garo National Liberation Army (India), GATIA (Mali), Hezbollah (Lebanon and Israel), the Houthis, ISIS (including various local affiliates; Iraq, Turkey, Syria, Yemen, Lebanon, Kuwait, France, Saudi Arabia, Libya, Bangladesh, Egypt, Pakistan, Gaza, Libya), Jamaatul Ahrar (Pakistan), JMB (Bangladesh), Jundullah (Pakistan), various Libyan militias (Libya), the Luhansk People’s Republic (Ukraine), the Naxals (India), the New People’s Army (Philippines), the NSCN-K (India), the Pakistani Taliban (Pakistan), the People’s Revolutionary Party of Kangleipak (India), the Peshmerga (Iraq), the PKK (Turkey), Salvatrucha (Guatemala), SPLM (South Sudan), various Syrian rebel groups (Syria and Lebanon), the Taliban (Afghanistan) and ULFA (India). There were also various other actors identified only as gangs, rebels or separatists.

28 AOV recorded 389 incidents in urban residential areas in 2014, up from 201 in 2013.

29 In 2014 AOV recorded 3,521 civilian deaths and injuries as a result of incidents in urban residential areas.

30 Medecins sans Frontières, “Syria: At least 550 wounded in horrific market-bombing in Damascus besieged area,” Medecins sans Frontières, 31 October 2015, <http://www.msf.org/article/syria-least-550-wounded-horrific-market-bombing-damascus-besieged-area> (accessed 17 March 2016).

31 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.

32 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 2015*, December 2015, <http://the-monitor.org/index.php/LM/Our-Research-Products/LMM14> (accessed 14 May 2015).

33 In 2014 civilians made up 61% of casualties from air-launched explosive weapons.

34 In 2014 Syria was recorded as being responsible for a full 46% of all recorded air-launched incidents.

35 In 2014 AOV recorded 8,088 civilian deaths and injuries as a result of incidents involving ground-launched weapons.

36 In 2015 AOV recorded 907 IEDs incidents compared to 1100 in 2014.

37 In 2014 AOV recorded 10,735 civilian deaths and injuries from IED incidents.

38 ‘Car bomb’ is taken as shorthand for vehicle-borne IEDs or VBIEDs, including explosives concealed in or built into vehicles of all kinds. Thus some car bombs may in fact be bike bombs or truck bombs.

39 Twelve percent of IED attacks with a reported mode of detonation in 2015 were triggered by victim-activation.

40 Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their destruction, 18 September 1997, [www.un.org/Depts/mine/UNDocs/ban\\_trty.htm](http://www.un.org/Depts/mine/UNDocs/ban_trty.htm) (accessed 21 May 2015).

41 In 2014 AOV recorded 5,501 deaths and injuries as a result of suicide bombings.

42 These countries were, in alphabetical order: Afghanistan, Bangladesh, Cameroon, Chad, China, Egypt, France, India, Iraq, Kuwait, Lebanon, Libya, Mali, Nigeria, Pakistan, Saudi Arabia, Somalia, Syria, Tunisia, Turkey and Yemen.

43 Chris Hitchcock, “The PR-isation of violence: ISIS suicide bombing infographic,” AOV, February 2016, <https://aoav.org.uk/2016/14172/> (accessed 18 March 2016).

44 In 2014 AOV recorded 751 civilian deaths and injuries in Nigeria as the result of suicide bombings.

45 BBC, “Nigeria Boko Haram: Militants ‘technically defeated’ – Buhari,” *BBC*, 22 December 2015, [www.bbc.co.uk/news/world-africa-35173618](http://www.bbc.co.uk/news/world-africa-35173618) (accessed 18 March 2016).

46 See the full list of states at <https://aoav.org.uk/2016/40-states-acknowledge-harm-caused-explosive-weapons-populated-areas/>.

47 <https://www.icrc.org/en/document/conflict-disaster-crisis-UN-red-cross-issue-warning>

48 “Informal Expert Meeting on Strengthening the Protection of Civilians from the [www.inew.org/site/wp-content/uploads/2015/09/Oslo-Expert-Meeting-Summary-Report.pdf](http://www.inew.org/site/wp-content/uploads/2015/09/Oslo-Expert-Meeting-Summary-Report.pdf)

49 Chatham House and Action on Armed Violence, “The Humanitarian Impact of Improvised Explosive Devices,” 18 September 2014, [www.chathamhouse.org/sites/files/chathamhouse/field/field\\_document/20150918IEDHumanitarianImpact.pdf](http://www.chathamhouse.org/sites/files/chathamhouse/field/field_document/20150918IEDHumanitarianImpact.pdf) (26 May 2015).

50 Robert Perkins, “Air Power in Afghanistan, How NATO changed the rules, 2008-2015,” Action on Armed Violence (AOAV), December 2015, <https://aoav.org.uk/wp-content/uploads/2015/03/AOAV-Air-Power-in-Afghanistan.pdf> (accessed 1 June 2015); Robert Perkins, “Under Fire, Israel’s artillery policies scrutinised,” Action on Armed Violence (AOAV), December 2015, <https://aoav.org.uk/wp-content/uploads/2015/03/AOAV-Under-Fire-Israels-artillery-policies-scrutinised.pdf> (accessed 1 June 2015).

51 United Nations Security Council, “Report of the Secretary-General on the protection of civilians in armed conflict,” 22 November 2014, <http://reliefweb.int/sites/reliefweb.int/files/resources/Report%20of%20the%20SG%20on%20the%20protection%20of%20civilians%20S2014-689.pdf> (accessed 23 April 2015).

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