

ACTION ON
ARMED VIOLENCE

AOAV

EXPLOSIVE VIOLENCE MONITOR 2018



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Cover illustration
The city of Douma on the outskirts of Damascus, Syria. Louai Beshara/AFP
via Jordi Bernabeu Farrús on Flickr. Uploaded on April 24, 2018

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Introduction

In the Syrian Arab Republic, a United Nations assessment mission to Raqqah in April 2018 found that nearly 70 per cent of buildings in the city were destroyed or damaged and that essential services, such as water, electricity and health care were absent or severely limited.

Raqqah is only one example of the acute impact on civilians and civilian objects of fighting when it takes place in populated areas and involves explosive weapons. I have repeatedly called on parties to conflict to avoid the use of explosive weapons with wide-area effects in populated areas, owing to the immediate and cumulative, complex and long-term harm resulting from such use. In 2018, an estimated 20,384 civilians were killed and injured by explosive weapons in populated areas.

UN Secretary General. Secretary-General's report on the Protection of Civilians in Armed Conflict, 07 May 2019.¹

This 2018 report presents the findings of the eighth 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 2018, AOAV recorded 32,110 deaths and injuries as a result of the use of explosive weapons globally. As seen every year for the past eight years, civilians continued to bear the burden of this violence. Of those harmed in 2018, 70% were reported to be civilians.

Iraq and Syria remained amongst the worst five impacted countries for the seventh year in a row. These two countries have consistently seen the highest numbers of civilian casualties from explosive violence.

Yemen, too, continues to suffer high levels of civilian harm from explosive weapons. AOAV recorded an 8% increase in civilian casualties in Yemen, compared to the previous year.

When explosive weapons are used in populated areas, they massively raise the threat to civilians. In 2018, 90% of those reported harmed by explosive weapons in populated areas were civilians. Last year,

AOAV recorded an average of 26 civilian deaths from explosive weapons per day – a significant reduction since last year, when 45 were recorded a day.

These findings reiterate the consistent pattern of harm that AOAV has persistently monitored since 2010, when AOAV began tracking explosive violence. Over the last eight years of monitoring AOAV has found that when explosive weapons were used in populated areas, on average nine in every ten of the deaths and injuries caused were civilians.²

Even when explosive weapons are targeted at military objectives, oftentimes bystanders are caught by the blast or hit by projected fragments, particularly when the explosive weapon used has wide area effects – something that is catalogued by AOAV in a separate report in 2015, 'Wide Area Effects' and by a wide range of NGO reports, including International Network on Explosive Weapons (INEW) members PAX and Article 36 in their 2016 report, 'Areas of Harm'. Such impacts continued to devastate civilians in 2018.

This data shows immediate impact of explosive violence. In 2018, AOAV continued to examine the reverberating effects of explosive violence including the destruction of civilian infrastructure, psychological suffering, and poverty.

Thousands more civilians are affected by explosive weapons than can possibly be hinted at by our casualty figures. Those displaced are in the millions, from Syria, Yemen, Iraq and other areas seeing high levels of explosive violence.

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 2018. Since the monitor began in 2010, AOAV has recorded the appalling suffering caused across the globe by both manufactured and improvised weapons. States and other users must politically commit to stop using explosive weapons with wide area effects in populated

areas. The harm recorded in 2018 and reflected in this report illustrates the stark urgency needed to reach this commitment.

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.



Syrian woman and child walk down a destroyed street in Arbin, Eastern Ghouta, on March 24, 2018. Jordi Bernabeu Farrús, on Flickr, Envolts de guerra Foto: Abdulmonam Eassa / AFP (ARA).

Key Findings

OVERVIEW

- When explosive weapons were used in populated areas, **90% of those killed and injured were civilians. This compares to 20% in other areas.**
- In total, 20,384 civilians were **killed and injured** in populated areas.
- AOVAV recorded 32,110 deaths and injuries by explosive weapons in 3,461 incidents in 2018. **Of these, 22,342 were civilians – 70%.**
- In total, 16,535 people were killed (of which 9,621 were civilians), and 15,575 were injured (of which 12,721 were civilians) by explosive weapons globally. This means **58% of all people killed and 82% of all people injured by explosive violence were civilians.**
- Civilian deaths and injuries in populated areas represented **91% of all reported civilian deaths and injuries.**
- Globally, state use of explosive violence caused 15,654 deaths and injuries in 2018. Of these **64%**, 10,040, were civilians.
- Civilian deaths and injuries from state use of explosive weapons (10,040) were **almost as high** as those from non-state use of explosive weapons (10,716).
- Civilian deaths and injuries from explosive violence saw a **decrease of 30%** last year, compared to the year before. This means that this is the second consecutive year in which AOVAV has recorded a drop in civilian casualties.

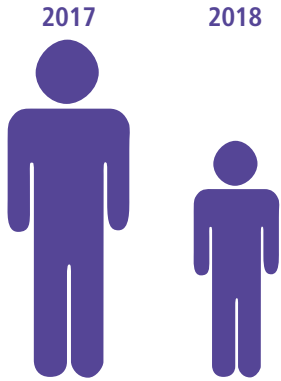
- Incidents caused by **improvised explosive devices (IEDs) killed and injured more civilians than any other weapon type.** IEDs were responsible for at least **42% of all civilian casualties** from explosive violence in 2018. Air-launched explosive weapons were responsible for 32% of all civilian deaths and injuries. Ground-launched explosive weapons were responsible for 15%. The remaining 11% were caused by incidents using multiples types of explosive weapons (9%), mines (1%), naval-launched explosives (<1%) and those recorded with an unclear launch method (<1%).
- **Syria, Afghanistan, Yemen, Iraq, and Pakistan** saw the highest number of **civilian deaths and injuries in 2018** with 9,587, 4,260, 1,807, 1,508, and 1,215 civilian casualties respectively.
- Despite a fall in reported deaths and injuries, Syria saw **more than 12,000 deaths and injuries recorded by AOVAV from explosive violence alone in 2018 – 80% were civilians.**
- Some of the most impacted countries saw a significant rise in civilian deaths and injuries as a result of explosive weapons compared to the year before: **Afghanistan, Yemen, India and Libya.**
- **Seven countries and territories saw over 500 civilian deaths and injuries in 2018.**
- Incidents were recorded in **64 countries and territories** around the world; five more locations than in 2017.

EXPLOSIVE VIOLENCE IN 2018

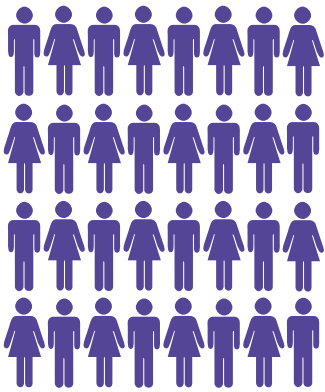


70%
CIVILIAN CASUALTIES

TOTAL REPORTED DEATHS & INJURIES: 32,110
TOTAL CIVILIAN DEATHS & INJURIES: 22,342



-30%
DECREASE IN TOTAL CIVILIAN
DEATHS & INJURIES



26
AVERAGE NUMBER OF CIVILIAN
DEATHS PER DAY

TARGETED AREAS

POPULATED AREAS



90% CIVILIAN DEATHS & INJURIES
IN POPULATED AREAS



1,928 ATTACKS IN POPULATED AREAS




NON-POPULATED AREAS

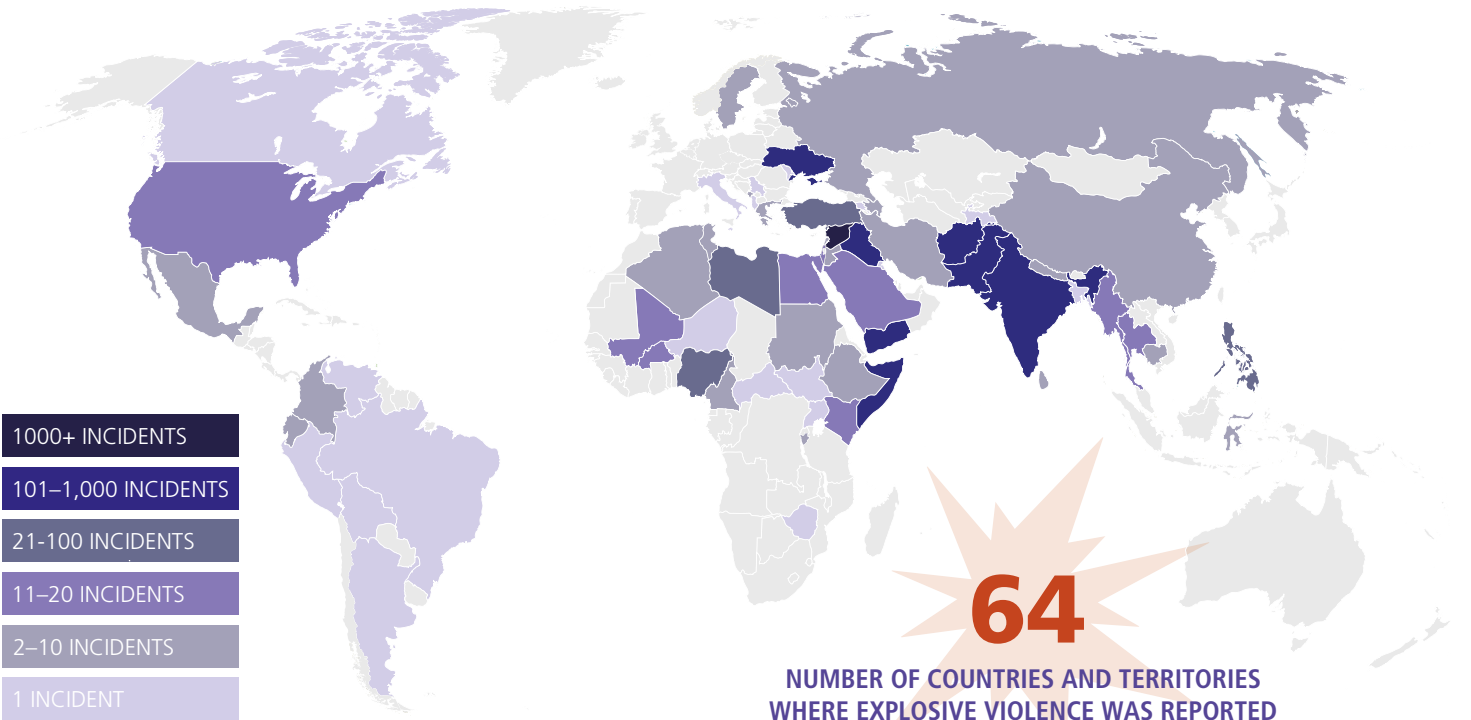


20% CIVILIAN DEATHS & INJURIES
IN NON-POPULATED AREAS



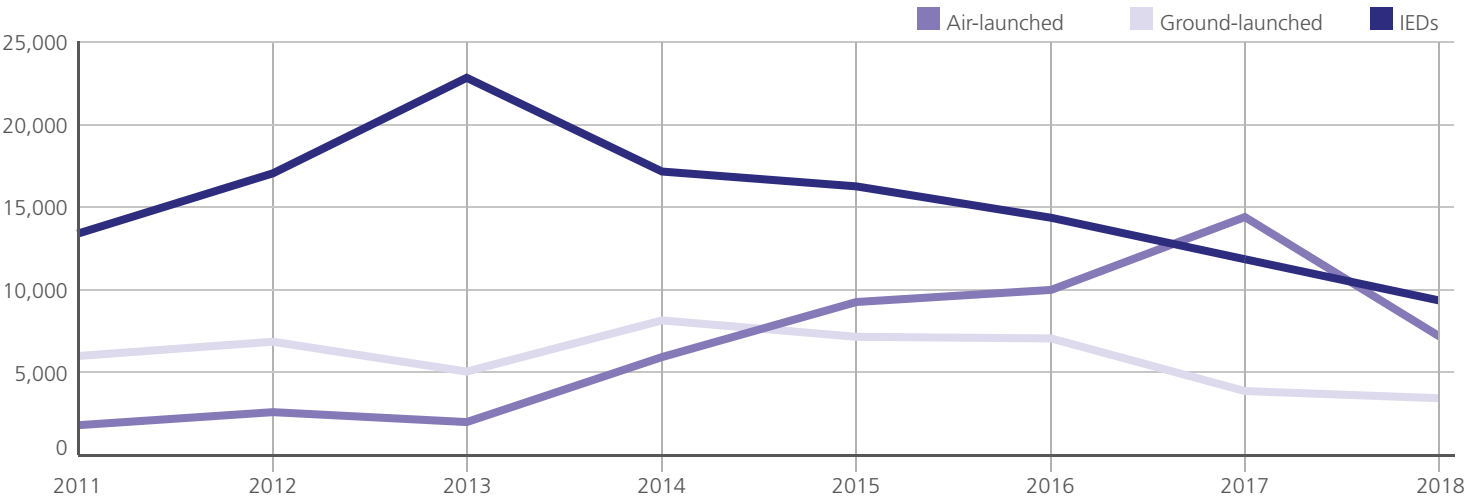
1,533 ATTACKS IN NON-POPULATED AREAS

	TOTAL DEATHS & INJURIES	CIVILIAN DEATHS & INJURIES	AVERAGE CIVILIAN DEATHS & INJURIES PER ATTACK
 URBAN RESIDENTIAL	2,654	85%	6
 MARKETS	1,862	97%	18
 PLACES OF WORSHIP	1,218	97%	26

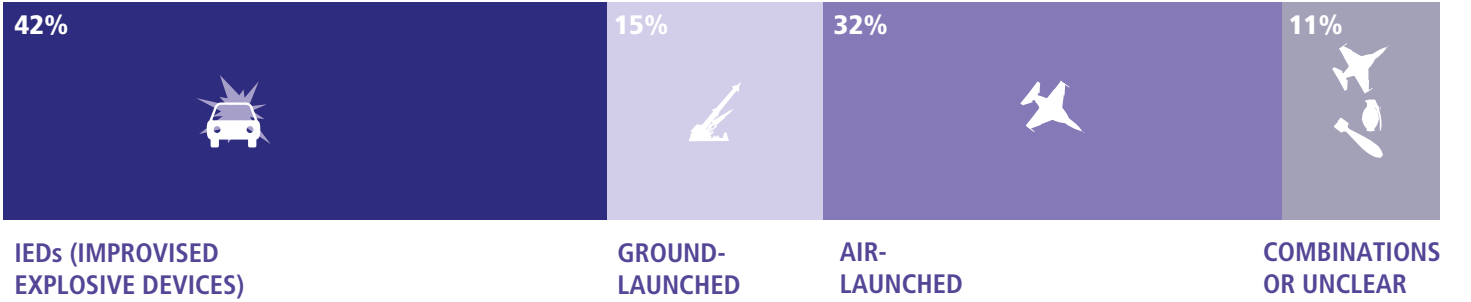


DEADLY WEAPONS

CIVILIAN DEATHS & INJURIES BY AIR-LAUNCHED, GROUND-LAUNCHED AND IEDS, 2011 – 2018



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, were members of non-state armed groups, or were 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.³

WIDE-AREA EFFECTS:

Refers to the use of explosive weapons, which result in a large blast and fragmentation radius, lack accurate delivery systems, and/or, use multiple munitions.⁴

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.

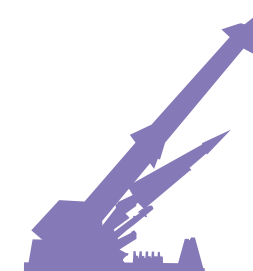
- **Multiple types:** Used to refer to incidents where a combination of different explosive weapon types were used and it was not possible to attribute casualties to each munition. These can involve any combination of air, ground-launched, or improvised explosive devices. The category most commonly includes 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.⁵

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.⁶ 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.⁷
- **Rocket:** Typically used to refer to unguided missiles, rockets were recorded wherever they are specified in a news source.⁸

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.
- **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.⁹
- **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.

2018 Overview

AOAV recorded **32,110** casualties (people who were killed or injured) by explosive weapons in **3,461** incidents in 2018.

Of the casualties recorded in 2018, **70%** were civilians (**22,342** civilians killed and injured).

This meant there was a **30%** decrease in civilian casualties from explosive violence compared to 2017.

In 2018, AOA V recorded a decrease in deaths and injuries from explosive violence recorded around the world. In total, there was a 30% decline in civilian deaths and injuries. This is the second consecutive year in which AOA V has recorded a drop in total civilian casualties. This decrease is thought to reflect the drop in civilian casualties in Iraq and Syria, with less civilian casualties from ISIS’ use of explosive weapons as well as a drop in state violence to target ISIS. Nevertheless, other countries have seen substantial increases in civilian casualties, particularly Afghanistan.

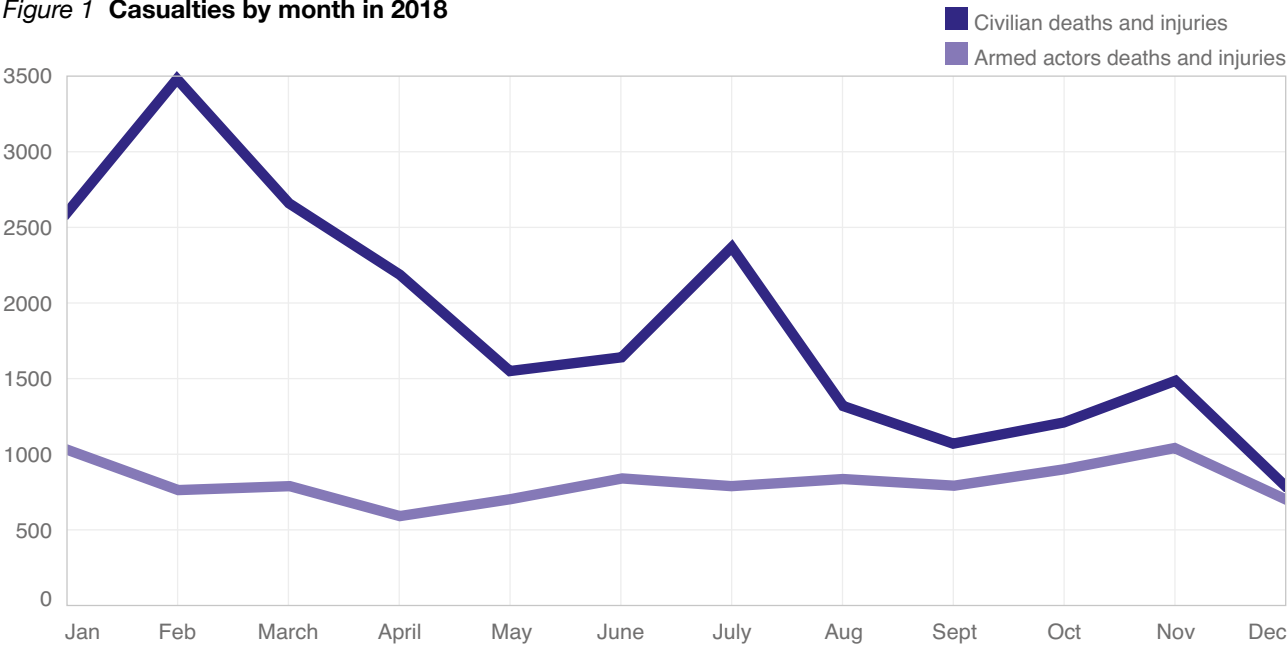
Globally, it remained the case that it is civilians that account for the majority of casualties from explosive weapon use, accounting for almost 70% of all recorded deaths and injuries.

Civilians also continued to be most at risk when explosive weapons were used in populated areas – a well-established pattern of harm.¹⁰

In 2018, AOA V recorded 22,342 civilian deaths and injuries from explosive weapons reported around the world. In total, 16,535 people were killed (of which 9,621 were civilians), and 15,575 were injured (of which 12,721 were civilians) by explosive weapons globally. This means 58% of all people killed and 82% of all people injured were civilians.

In 2018, 56% of all recorded incidents took place in populated areas. In those attacks, 90% of those killed or injured were reported as civilians. This compares to 20% of victims being reported as civilians when explosive weapons were used in lesser populated areas.

Figure 1 Casualties by month in 2018



Worst incidents of 2018

Incident	Location	Civilian casualties
Airstrikes and shelling by Syrian government and allies kills hundreds across Eastern Ghouta ¹¹	Eastern Ghouta, Syria	598
Airstrikes target Douma as well as barrel bombs suspected to contain toxic gas ¹²	Douma, Eastern Ghouta, Syria	570
Airstrikes, rocket fire and shelling by government forces on Ghouta ¹³	Eastern Ghouta, Syria	362
Suicide bombing on political rally in Drigarh in Balochistan ¹⁴	Drigarh, Pakistan	342
Taliban use an ambulance bomb in central Kabul ¹⁵	Kabul, Afghanistan	338
Simultaneous blasts and raids including suicide attack near marketplace in Suweida ¹⁶	Suweida, Syria	315
Regime air and artillery strikes on Eastern Ghouta ¹⁷	Eastern Ghouta, Syria	240
Suicide bombing targets protestors in Nangarhar ¹⁸	Nangarhar, Afghanistan	233
Saudi coalition airstrike hits Hodeidah fish market at the entrance to al-Thawra hospital ¹⁹	Hodeidah, Yemen	179
ISIS suicide bomber detonates at voter registration centre in Kabul ²⁰	Kabul, Afghanistan	176

As shown in *Figure 1*, the reported civilian casualties of explosive weapon use consistently and substantially outnumbered armed actors in 2018.²¹

On average, AOA V recorded 1,862 civilian casualties reported every month, compared to an average of 814 armed actors. This means that, every day, there were on average 61 civilians reported killed or injured by explosive weapons (compared to 27 armed actors).

26 civilians were reported killed on average every day from explosive weapon use in 2018 around the world.

2018 HOTSPOTS

AOAV recorded at least one death or injury from an explosive weapon attack in 64 different countries and territories (see map on page 15),²² five more than recorded in 2017.²³

Casualties from explosive weapons were reported in 16 countries and territories in 2018 that had not been impacted in 2017.²⁴

As *Figure 2* on page 12 shows, Syria was the country with the most civilian deaths and injuries in 2018 followed by Afghanistan, Yemen, Iraq and Pakistan.

Syria

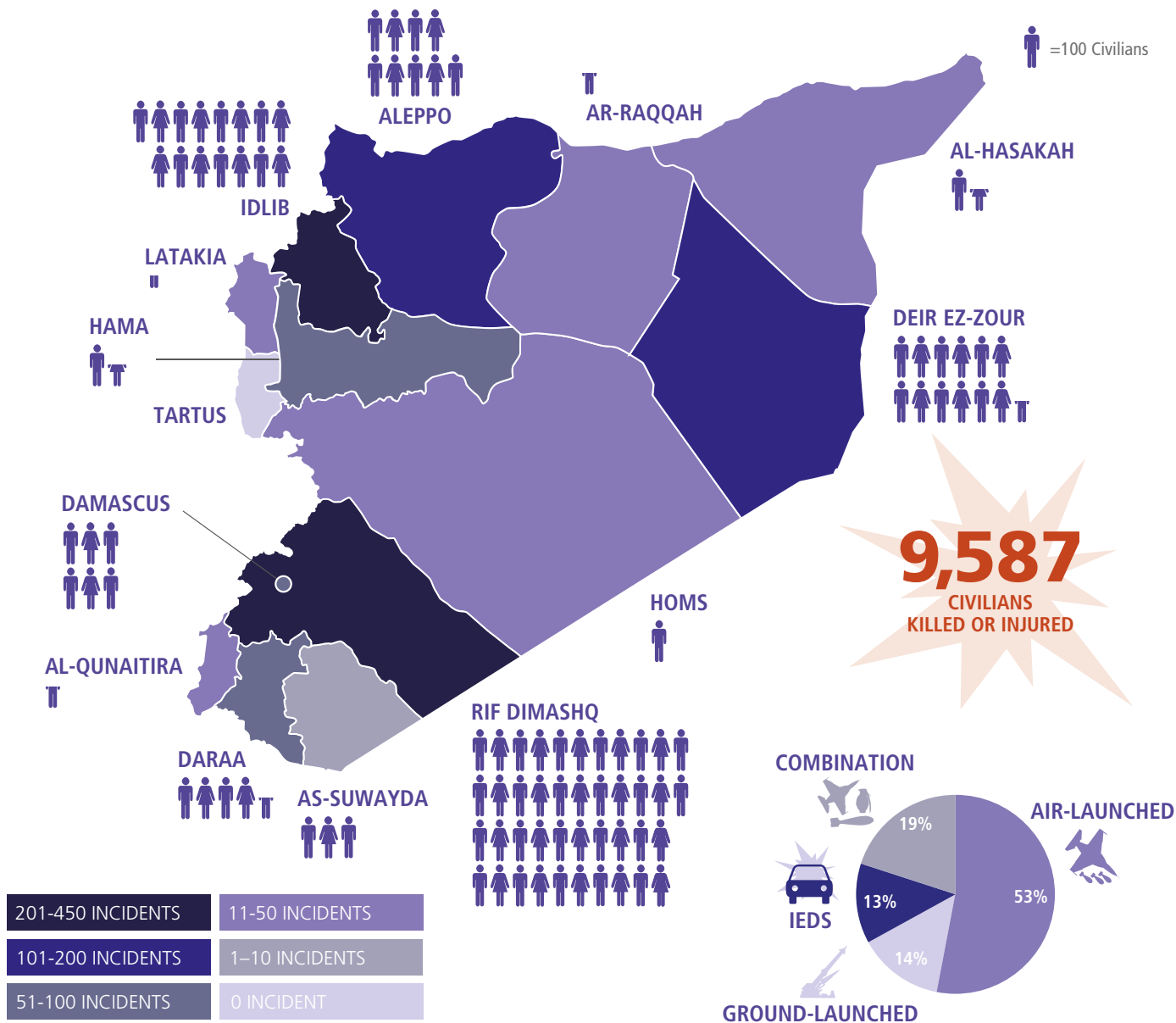
Although Syria remained the worst impacted country globally from explosive violence, AOA V recorded a 27% decrease in civilian casualties (from 13,062 in 2017 to 9,587 in 2018), alongside a drop in explosive violence incidents (from 1,750 in 2017 to 1,224 in 2018).

The worst impacted regions were Rif Dimashq, Idlib, Deir al-Zour and Aleppo, though it was Eastern Ghouta in Rif Dimashq that stood out by far, with 4,188 civilian casualties recorded in Rif Dimashq, accounting for 44% of civilian casualties from explosive violence across the whole country. Rif Dimashq was followed by Idlib (with 1,474 civilian casualties), Deir al-Zour (with 1,146) and Aleppo (with 875).

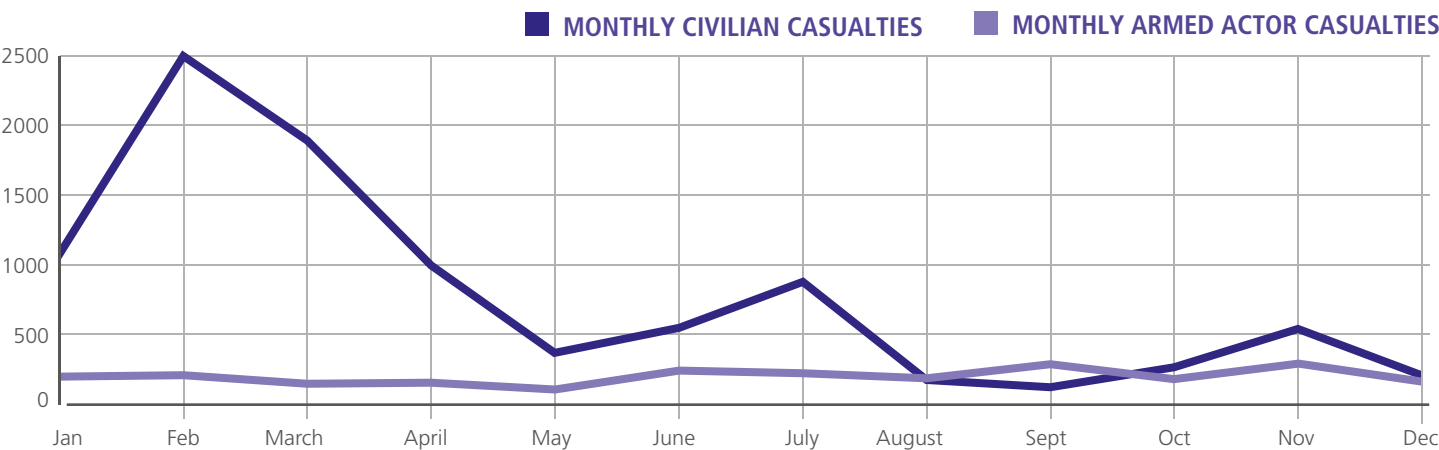
Russian and Syrian airstrikes and shelling account for the majority of civilian casualties in Rif Dimashq due to the brutal attacks on Eastern Ghouta in early 2018. State actors were responsible for 98% of civilian casualties from explosive violence in Rif Dimashq in 2018.

In total, across the entirety of the country, state actors were responsible for over three-quarters (77%) of civilian casualties from explosive violence. Airstrikes were responsible for 53% of total civilian casualties in Syria.

THE HARDEST-HIT PROVINCES IN SYRIA IN 2018



MONTHLY CASUALTIES OF EXPLOSIVE VIOLENCE IN 2018



Afghanistan

In 2018, Afghanistan witnessed a further increase in the number of explosive violence incidents compared to 2017, following an increase witnessed the previous year. Last year there was a 30% increase in total casualties. The increase was mostly borne by the civilian population, with a 37% rise in civilian casualties from explosive violence (from 3,119 in 2017 to 4,260 in 2018).

In Afghanistan, IEDs were responsible for the majority of civilian harm, accounting for 78% of civilian casualties in 2018. Civilian casualties from IEDs rose by 28% last year (from 2,598 in 2017 to 3,328 in 2018). However, in response there was also a rise in airstrikes, with an according increase in civilian casualties from such weaponry. Civilian casualties from airstrikes almost doubled, from 238 in 2017 to 463 in 2018.

ISIS was the main perpetrator of civilian harm, though it became increasingly unclear which groups were respon-

sible for some attacks. The Taliban were responsible for at least 16% of civilian casualties from explosive violence in the country, whilst ISIS affiliated groups were responsible for at least 30%. A further 38% of civilian casualties were recorded from incidents involving non-state actors, though the perpetrating group was unclear.

Yemen

After reported civilian casualties from explosive violence in Yemen fell by 47% in 2017 compared to the previous year, 2018 saw a slight increase of 8% (from 1,670 in 2017 to 1,807 in 2018).

However, data from Yemen continues to be impacted by a paucity of reporters on the ground. From the data known, airstrikes continue to be the main cause of civilian harm there, responsible for 84% of civilian casualties in Yemen last year. Saudi-led coalition airstrikes continue to devastate the civilian population and exacerbate the humanitarian crisis in the country.

Figure 2 Most affected countries and territories in 2018

Position	Country/Territory	Civilian casualties	All casualties	Number of recorded incidents per incident	Average civilian casualties civilians	Percentage of casualties who were	Global ranking in 2017
1	Syria	9587	12012	1224	8	80%	1
2	Afghanistan	4260	7388	477	9	58%	3
3	Yemen	1807	2330	227	8	78%	5
4	Iraq	1508	2510	487	3	60%	2
5	Pakistan	1215	1583	171	7	77%	4
6	Somalia	832	1504	133	6	55%	6
7	Nigeria	726	866	40	18	84%	7
8	Libya	392	465	42	9	84%	12
9	India	322	642	179	2	50%	9
10	Philippines	192	306	51	4	63%	14
11	Ethiopia	186	186	4	47	100%	27
12	Gaza	114	161	37	3	71%	20
13	Mali	105	205	20	5	51%	33
14	Ukraine	100	330	130	1	30%	16
15	Burundi	90	90	4	23	100%	13

Iraq

While Iraq remained amongst the worst impacted countries from explosive violence around the world, 2018 saw a significant decline in explosive violence, with a 77% drop in civilian casualties from such weaponry (with 6,571 civilian casualties in 2017 to 1,508 in 2018).

This fall reflects not only a reduction in civilian harm from IEDs, which dropped by 45% (from 2,484 to 1,347) but also a virtual disappearance of civilian casualties from airstrikes, with civilian casualties from airstrikes decreasing by 99%, from 3,388 in 2017 to 22 in 2018.

Much of this decrease is therefore due to the decline of US-led coalition airstrikes in the country, which in 2017 had meant airstrikes were responsible for over half of all civilian casualties from explosive weapon use in Iraq.

Pakistan

Pakistan saw a significant fall in civilian casualties from explosive violence; with a decrease of 46% from 2,255 civilian casualties recorded in 2017, to 1,215 recorded last year.

IEDs remained responsible for the majority of civilian casualties in Pakistan, accounting for 69% of civilian

deaths and injuries from explosive weapons there. ISIS continued to be the main perpetrator of such harm, responsible for at least 63% of civilian deaths and injuries from IEDs in Pakistan. Nevertheless, civilian harm from ISIS in Pakistan dropped by 16%.

A GLOBAL PROBLEM

Although the top five worst-affected countries in 2018 were located in the near and middle East and on the Arabian Peninsula, the results of explosive violence continue to be felt across the globe, from Western Europe to the United States, from Somalia to the Ukraine.

Libya

In 2018, Libya saw higher levels of explosive violence, albeit significantly less than those seen in 2011. AOA recorded 42 incidents of explosive violence in Libya in 2018, which resulted in 465 casualties. Of these, 84% (392) were civilians. This amounts to a 140% increase from that seen in 2017, when 163 civilian casualties were recorded.

IEDs were responsible for 81% of civilian casualties reported in Libya. Where a perpetrating group was identified, ISIS claimed responsibility for all civilian casualties. After being pushed out by Libyan forces in 2016, though not eliminated, the data suggests ISIS' presence is increasing, or at least cells are becoming



Syrian woman and child walk down a destroyed street in Arbin, Eastern Ghouta, on March 24, 2018. Jordi Bernabeu Farrús, on Flickr, Envolts de guerra Foto: Abdulmonam Eassa / AFP (ARA).



Child gazes at the rubble after Saudi-led coalition airstrike hit a home in the southwestern city of Taiz. Uploaded on April 9, 2018 via Felton Davis on Flickr.

more active, compared to 2017. It is thought that Libya may be one of the countries ISIS members leaving Syria and Iraq will head to, so it is likely we may see this rise in violence continue.

Explosive violence between the divided Libyan forces also continued to cause casualties in the country, increasing instability. Airstrikes accounted for 5% of civilian casualties from explosive violence in Libya, whilst ground-launched explosives accounted for 14%.

Philippines

The Philippines saw 306 casualties from explosive violence in 2018, of which 63% (192) were civilians. This was a 49% increase from the previous year, when 129 civilian casualties were recorded.

Of the civilian casualties recorded in 2018, 63% were caused by IEDs. However, with many actors engaged in the country, it is often difficult for perpetrators to be identified. AOA recorded civilian casualties from IED incidents perpetrated by the Bangsamoro Islamic Freedom Fighters (BIFF), Abu Sayyaf and the New People's Army (NPA). However, 85 civilian casualties (70% of civilian casualties from IEDs) were from IED attacks where the perpetrating group was not identified.

Similarly, perpetrators of ground-launched attacks were also largely unrecorded. In total, ground-launched

explosives were responsible for 35% of civilian casualties from explosive violence in the Philippines last year.

India

In 2018, India saw the highest level of casualties from explosive violence that AOA has recorded in the country over the last eight years. AOA recorded 642 casualties from explosive violence in India, of which 50% were civilians. While the civilian casualty toll was not as high as it had been in previous years, it marked a 21% increase compared to 2017.

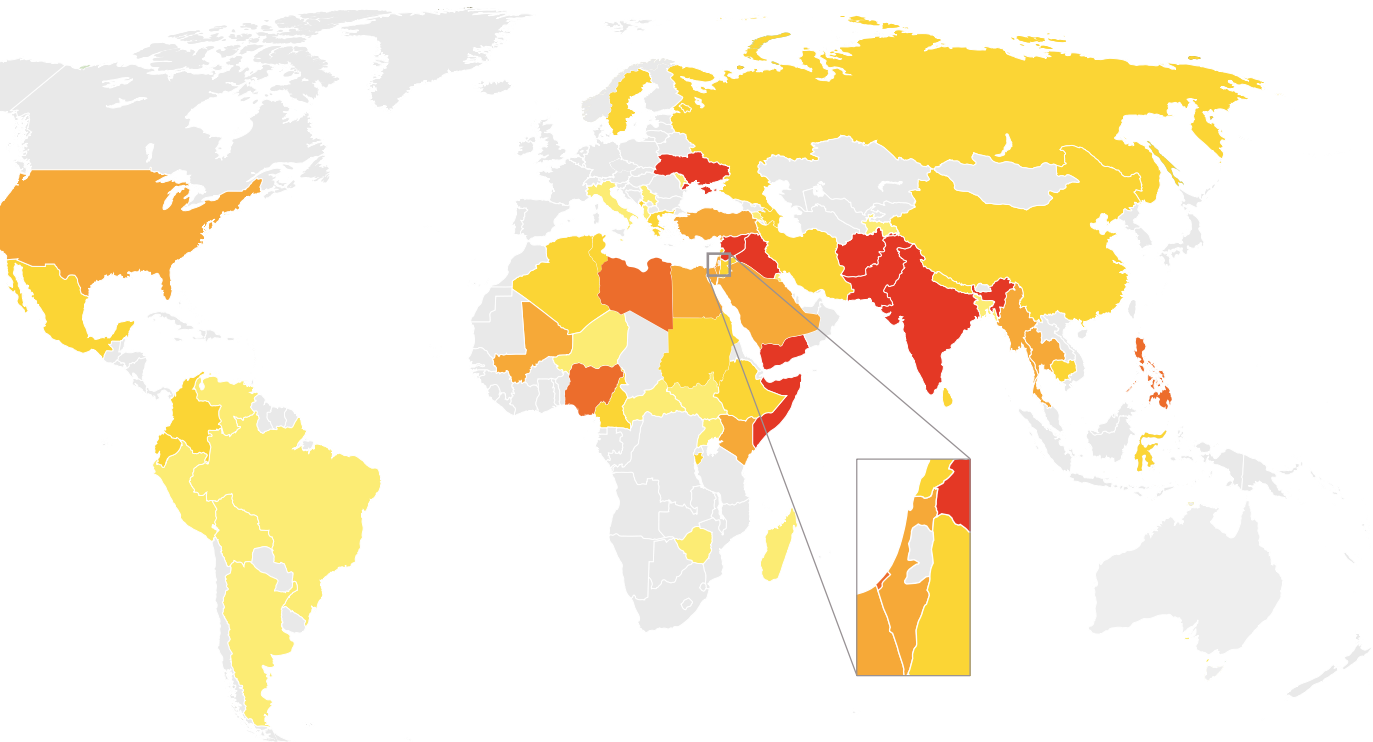
The vast majority of civilian casualties - 70% - were caused by ground-launched explosives, including grenades, mortars, and non-specific shelling. This increase in casualties is largely linked to increased violence along the border in Kashmir.

The number of civilians killed and injured by shelling from Pakistan was 150, a rise of 79% compared to 2017, when 84 civilian casualties were recorded. Similar levels of civilian casualties were recorded in both Indian- and Pakistan-occupied Kashmir, highlighting how all too often civilian casualties pay the price from the explosive weapons used by both states.

In India, IEDs accounted for a further 27% of civilian casualties and landmines for the remaining 3%.

Incidents of explosive violence recorded by AOA in 2018

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 2,000 incidents**
Afghanistan 477, India 179, Iraq 487, Pakistan 171, Somalia 133, Syria 1224, Ukraine 130, Yemen 227
- Countries and territories with between 31 and 100 incidents**
Gaza 37, Libya 42, Nigeria 40, Philippines 51
- Countries with between 11 and 30 incidents**
Burkina Faso 11, Egypt 13, Israel 13, Kenya 12, Mali 20, Myanmar 12, Saudi Arabia 13, Thailand 19, Turkey 26, USA 13
- Countries with between 2 and 10 incidents**
Algeria 4, Azerbaijan 5, Burundi 4, Cambodia 3, Cameroon 6, China 2, Colombia 10, Ethiopia 4, Ecuador 2, Greece 2, Indonesia 3, Iran 8, Jordan 2, Lebanon 2, Mexico 2, Montenegro 2, Nepal 4, Russia 7, Sri Lanka 3, Sudan 9, Sweden 3, Tunisia 4
- Countries and territories with 1 incident**
Albania, Argentina, Armenia, Bangladesh, Bolivia, Brazil, Canada, Central African Republic, Italy, Kuwait, Malta, Moldova, Niger, Peru, Serbia, South Sudan, Tajikistan, Uganda, Venezuela, Zimbabwe

WHO IS BEHIND THE EXPLOSIVE VIOLENCE?

A significant proportion of explosive violence incidents recorded by AOA in 2018 went unclaimed and could not be attributed to a specific actor. In 10% of incidents it was unclear from reporting whether a state or non-state actor was responsible. This is a higher percentage than in 2017, when 9% of incidents were coded as unclear.

State actors

The 1,439 incidents that were attributed to a state, rather than a non-state group, caused 15,654 deaths and injuries in 2018. Of these 64%, 10,040, were civilians. This compares to 23,447 deaths and injuries in 2017, of whom 69% (16,266) were reported to be civilians. The most prolific state users of explosive weapons are listed in Figure 3.

Figure 3 Biggest state users of explosive weapons in 2018

States		
1	Syria	17% of incidents
2	Saudi-led coalition	11%
3	US-led coalition	9%
4	USA	8%
5	India	4%

However, as has been seen for the previous couple of years, this list may be somewhat misleading. It is likely that far more incidents could be attributed to Syria and Russia, but in many of the state-perpetrated incidents in Syria it was unclear whether they were perpetrated by either Syria or Russia, as they go unclaimed. AOA recorded 23 incidences of Russian attacks, resulting in 691 civilian deaths. This contrasts with 158 events recorded by AOA of attacks attributed to the Saudi-led coalition in 2018, or 127 attacks to the US-led coalition.

Civilian casualties by the US-led coalition decreased significantly from 2,867 civilian casualties in 2017, to 959 last year.

With 1,535 civilian casualties, Saudi Arabia-led forces saw a 9% increase in civilian casualties caused from their use of explosive violence.

AOAV recorded 252 attacks reported to be perpetrated by Syrian forces in 2018. Of the casualties recorded, 87% were civilians. Again, many of these casualties were caused in Eastern Ghouta which saw the majority of civilian casualties, especially in early 2018, when Syria sought to take the rebels main stronghold.

Twenty-four different state forces used explosive weapons in 2018. This is a slight decrease from in 2017, where twenty-five states were recorded. However, many states operate under coalitions with many attacks recorded under the coalition name. The two coalitions responsible for the largest number of civilian deaths and injuries were the Saudi-led coalition in Yemen, and the US-led coalition in Iraq and Syria. Joint attacks by Russia and Syria as well as by Afghanistan and the United States were also recorded. Civilian casualties were also recorded by NATO's use of explosive violence.

Non-State Actors

Collectively, non-state actors caused 14,462 casualties in 2018 (less than state actors), of whom 74% were civilians (10,716). This compares to 17,980 casualties in 2017, of whom 79% were civilians (14,265). Although these figures for 2018 point to 3,549 fewer civilian deaths and injuries, this is in large part due to a significant drop in the number of people killed or injured by ISIS. In 2018, AOA recorded 2,885 civilian casualties from ISIS' use of explosive violence. In Syria and Iraq, AOA recorded just 893 civilian casualties from explosive violence incidents perpetrated by ISIS. Although, ISIS attacks in Afghanistan have risen.

AOAV recorded 42 different non-state actors using explosive weapons.²⁵ The most prolific non-state actors in 2018 are listed in Figure 4. In 2018, ISIS was responsible for 27% of civilian casualties from non-state explosive violence while the Taliban, the reported perpetrators of 55 attacks resulting in death or injury to 661 civilians, represent just over 6% of the total.

Figure 4 Biggest state users of explosive weapons in 2018

Non-state		
1	ISIS	9% of incidents
2	Ukrainian separatists	6%
3	Al Shabaab	4%
4	Taliban	3%
5	Houthi rebels	3%

Due to AOA'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. 987 incidents committed by non-state actors were not claimed by any group, out of a total of 1,643 incidents.

Explosive weapons in populated areas

In 2018, **90%** of casualties in populated areas were reported as civilians. This is compared to **20%** in other areas.

Airstrikes accounted for **almost half** of civilian casualties recorded in residential areas.

In market bombings, **97%** of those killed and injured were civilians.

AOAV recorded **2,176** child deaths and injuries in **630** incidents in 2018.

POPULATED AREAS

As Figure 5 shows, in 2018 when explosive weapons were used in populated areas, 90% of the deaths and injuries were reported to be civilians. This compares to 20% in other areas. In total, 20,384 civilians were killed and injured in populated areas.

This is consistent with the pattern of harm AOA has persistently recorded since 2011. In every year of AOA's Explosive Weapons Monitoring Project, the use of explosive weapons in populated areas has been shown to overwhelmingly harm civilians. In 2011, 84% of deaths and injuries in populated areas were reported as civilians; in 2012, 2013, 2014, 2015, 2016 and 2017 this was 91%, 93%, 92%, 92%, 92% and 92% respectively.

When explosive weapons are used in urban areas, areas where people are closely grouped, more people are killed or injured, and these - all too often - are generally civilians. In 2018, both state and non-state actors alike continued to utilise explosive weapons in populated areas, despite being fully aware that civilians were present.

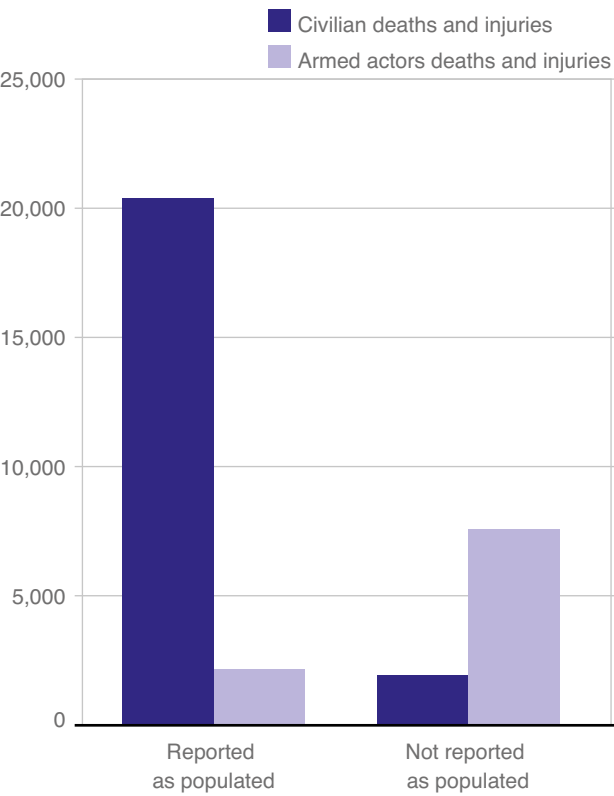
Despite the likely harm to civilians, the majority of explosive incidents - 56% in 2018 - continue to be perpetrated in populated areas.

Civilian deaths and injuries in populated areas represented 91% of all reported civilian deaths and injuries from explosive weapons last year, demonstrating the disproportionate effect of explosives deployed in populated areas.

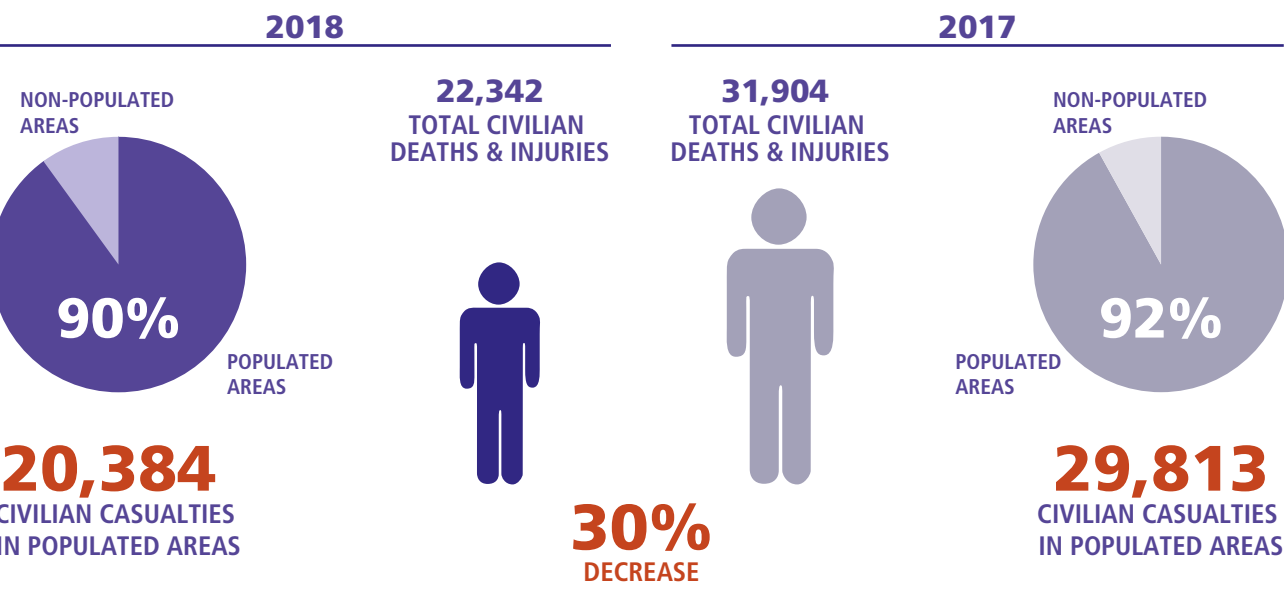
However, AOA also noted a decrease in the use of explosive violence in populated areas down from 2,601 incidents in 2017 to 1,928 in 2018, which may also have contributed to the lower civilian casualty total last year.

It was a horror scene. I saw dead bodies and scattered flesh.
Mohammed Reza Hussaindad,
witness of Kabul Bombing in August 2018.²⁶

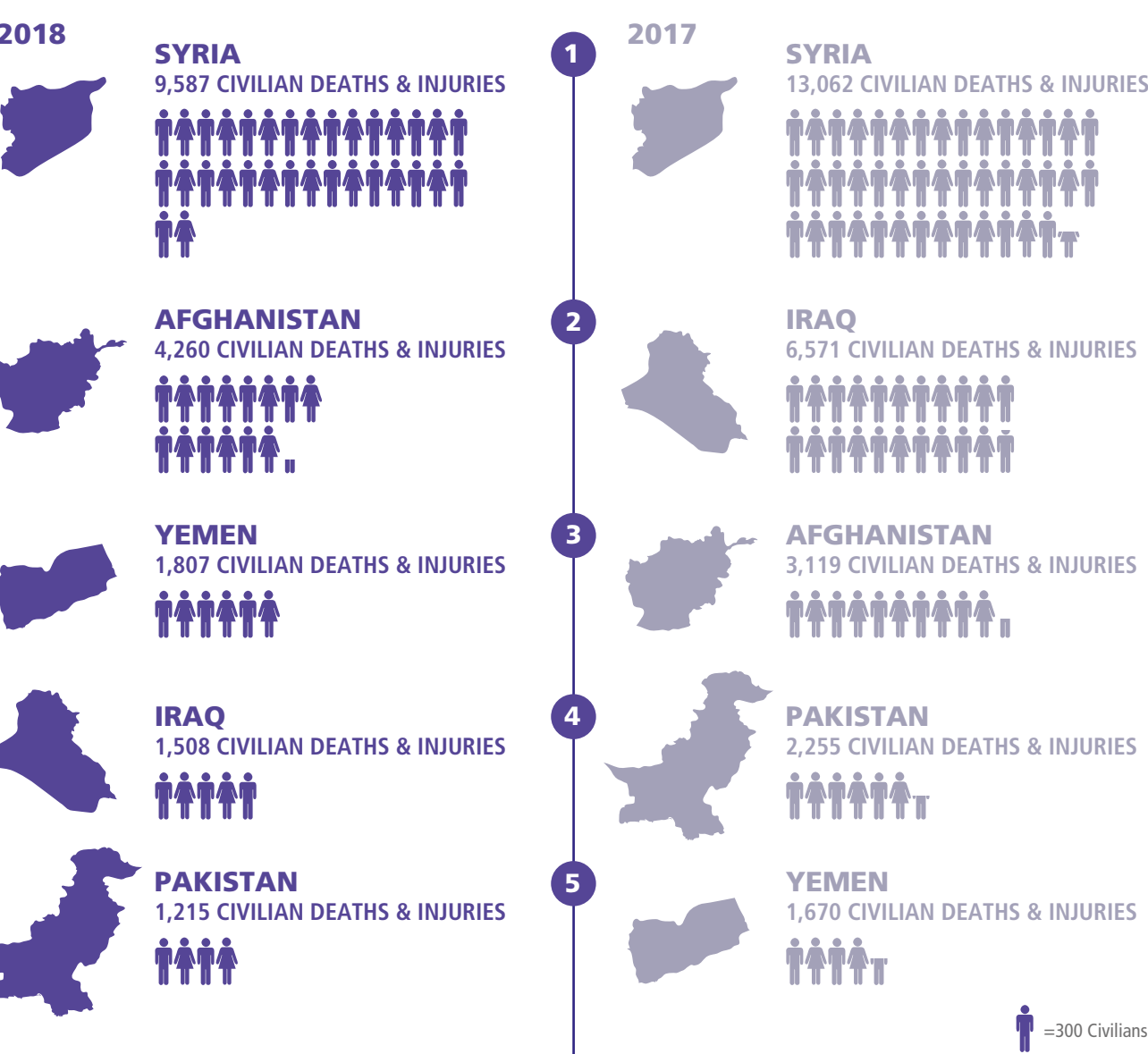
Figure 5 Total casualties by populated area / non-populated area



CIVILIANS KILLED & INJURED: 2017 v 2018



THE MOST DANGEROUS PLACES TO BE A CIVILIAN



LOCATION



A Syrian child plays with a cardboard gun in the rebel-held town of Harasta, in the Eastern Ghouta region on the outskirts of Damascus on January 25, 2018. AFP photo / Jordi Bernabeu Farrús, Flickr.

RESIDENTIAL

The highest number of civilians killed and injured were from incidents in residential areas or civilian houses. AOA V recorded 383 such incidents in 2018.

These incidents resulted in 2,244 civilian deaths and injuries, a fall of 69% from 2017 when 7,196 civilian casualties were recorded from 815 incidents in such areas.

As in previous years, the majority of incidents recorded in residential areas in 2018 were in Syria. However, it is worth noting that due the intensity of some of the attacks conducted, many incidents were recorded with the location of “multiple (urban)” as attacks hit numerous urban areas at once. These attacks accounted for 14% of incidents and 30% of civilian casualties.

Of the casualties recorded in urban residential areas, airstrikes accounted for most (45%) of the civilian casualties caused there. Similarly, of civilian casualties recorded in incidents where the location was recorded as “multiple (urban)”, airstrikes accounted for 50%.

MARKET BOMBINGS

Similar to 2017, last year about 3% of all explosive incidents recorded (103 incidents) happened in market places. In 2018, these incidents resulted in 1,806 civilian deaths and injuries; this was a 23% decrease from 2017.

In the market bombings recorded, 97% of those killed or injured were civilians.

64% of all civilian deaths and injuries from market bombings were recorded in just two countries: Iraq (38%) and Pakistan (26%).

IEDs make up the majority of civilian casualties recorded from market bombings, accounting for 55% of attacks.

The country worst impacted by market bombings was Yemen, where the majority of incidents were caused by Saudi-coalition airstrikes.

VILLAGES

406 incidents were recorded from the use of explosive violence in villages, resulting in 1,621 civilian casualties.

Many of these incidents (151) were perpetrated in Syria, which accounts for 48% of the civilian casualties from explosive weapon use in villages, followed by Pakistan, Afghanistan and Nigeria.

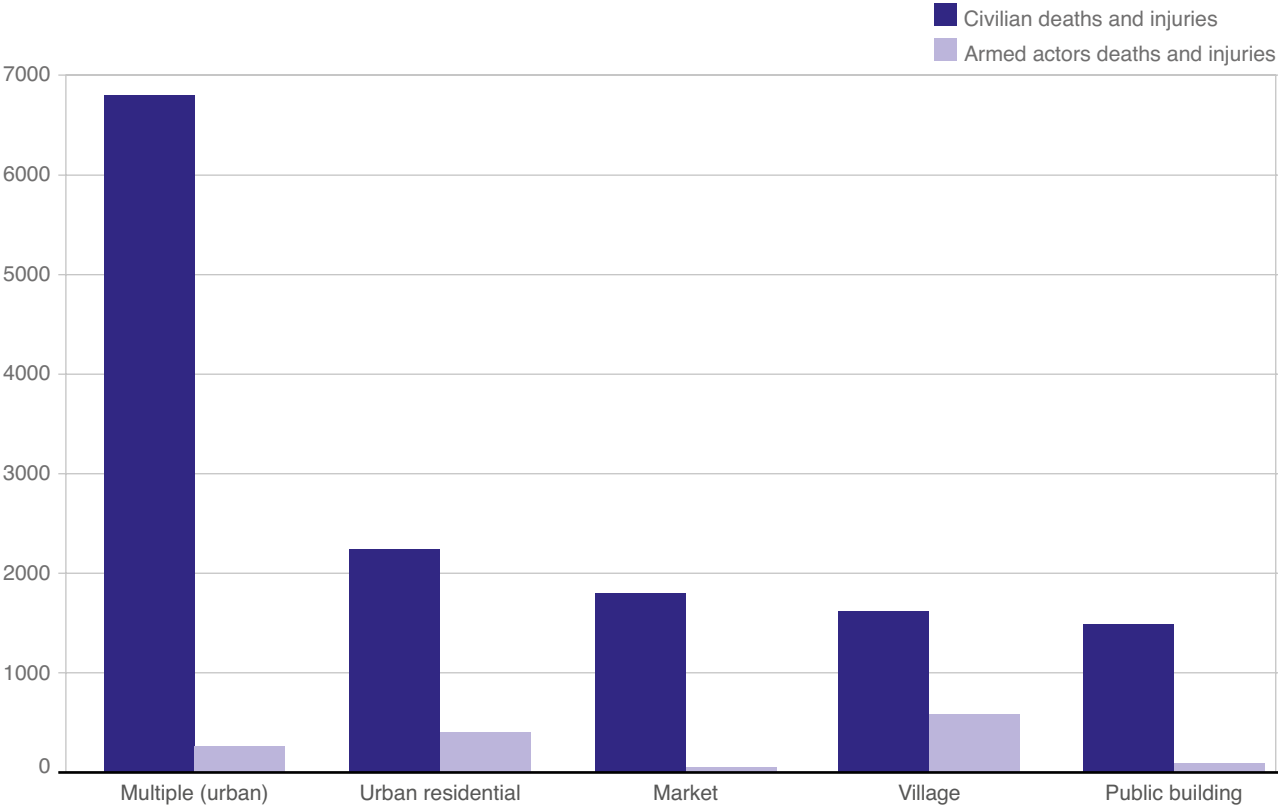
Most civilian casualties from these incidents were caused by airstrikes, accounting for 48% of civilian harm in villages.

TARGETING

As has consistently been seen to be the case throughout AOA V’s records, simply targeting armed actors with explosive weapons did not prevent civilians from being killed or injured. In 2018, 20% of those killed or injured by attacks which were explicitly coded as targeting armed actors were civilians. In populated areas this rose to 66%, whilst in non-populated areas it fell to 3%.

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

Figure 6 Locations with the most civilian deaths and injuries



WOMEN

The majority of media sources did not include reporting of the gender of victims in 2018.

Women were reported among those killed and injured in 516 incidents, including those incidents where no figure was given. Overall, 1,134 women were reported killed or injured in 479 incidents.

This figure does not include armed actors. Likewise, it does not include female suicide bombers. In 37 incidents women were reported amongst the casualties but no figure of women killed was given.

The majority of women who were killed or injured were victims of attacks in populated areas. When women were specifically reported among the casualties, it was found that 93% were incidents in areas recorded as populated.

CHILDREN

The majority of media sources did not include reporting of the age of any victims in 2018.

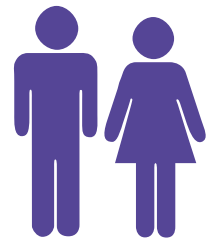
In 2018, AOA V recorded 2,176 child deaths and injuries in 630 incidents. Of these, a gender was given for 333 individuals, of whom 111 were girls and 222 were boys. The rest were reported without specifying gender.

In a further 46 incidents, no figures were given for numbers of children killed or injured but children were reported to be amongst the victims. Of the incidents reported that saw children killed or injured, 90% took place in populated areas.

They came to the hospital in cars and ambulances. Dozens of children with an array of grisly wounds. Some were screaming, some were scared, many went straight to the morgue.

Marta Rivas Blanco, ICRC nurse witnessing aftermath of airstrike on Yemen which struck a bus of children in August 2018.²⁷

AIR-LAUNCHED EXPLOSIVE WEAPONS



7,202

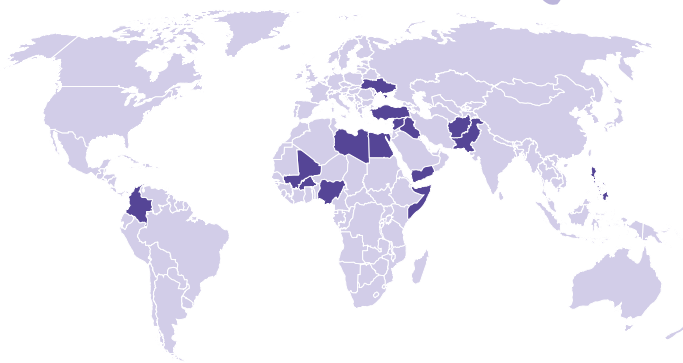
CIVILIANS KILLED & INJURED IN 2018



5 IN 10 INCIDENTS OCCURRED IN POPULATED AREAS



91% OF DEATHS & INJURIES IN POPULATED AREAS WERE CIVILIANS



INCIDENTS WERE RECORDED IN 16 COUNTRIES AND TERRITORIES IN 2018

GROUND-LAUNCHED EXPLOSIVE WEAPONS



3,444

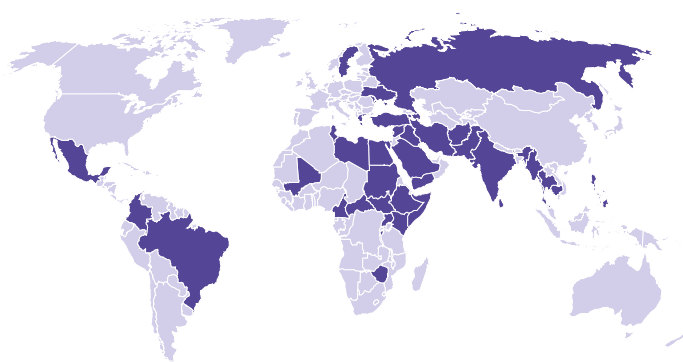
CIVILIANS KILLED & INJURED IN 2018



7 IN 10 INCIDENTS OCCURRED IN POPULATED AREAS



94% OF DEATHS & INJURIES IN POPULATED AREAS WERE CIVILIANS



INCIDENTS WERE RECORDED IN 42 COUNTRIES AND TERRITORIES IN 2018

IMPROVISED EXPLOSIVE DEVICES (IEDs)



9,366

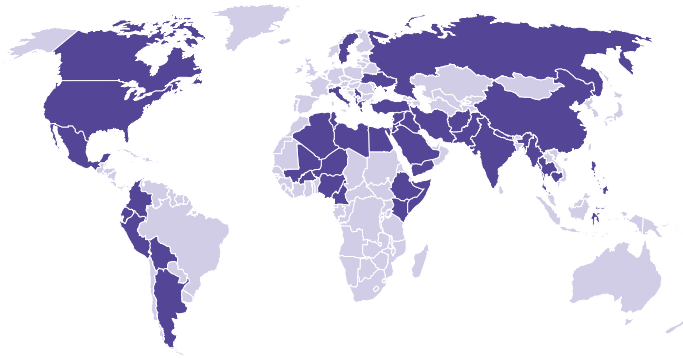
CIVILIANS KILLED & INJURED IN 2018



5 IN 10 INCIDENTS OCCURRED IN POPULATED AREAS



87% OF DEATHS & INJURIES IN POPULATED AREAS WERE CIVILIANS



INCIDENTS WERE RECORDED IN 49 COUNTRIES AND TERRITORIES IN 2018

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 7. There are different ways of evaluating the threat that various explosive weapons have had for civilians in 2018. These are explored over the following sections.

In order to better understand how these different explosive weapons have endangered civilians in 2018, 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 narrower categories.²⁸ 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.²⁹

Figure 7 Civilian casualties by weapon type in 2018

Weapon type	Civilian casualties	Average civilian casualties per incident
Air-launched	7202	7
Air Strike	6212	7
Air-dropped bomb	804	17
Missile	80	10
Multiple explosive weapons	86	86
Rocket	20	7
Ground-launched	3444	4
Artillery shell	124	2
Grenade	851	6
Missile	134	4
Mortar	666	6
Multiple explosive weapons	13	2
Rocket	262	5
RPG	10	3
Shelling	1381	3
Tank shell	3	1
IED	9366	7
Car bomb	2731	16
Multiple explosive weapons	211	70
Non-specific IED	5641	7
Roadside bomb	783	2
Mine	286	2
Landmine	286	2
Multiple types	2036	23
Multiple explosive weapons	2036	22
Naval-launched	6	6
Missile	6	6
Unclear	2	1
Missile	2	1

Air-launched explosive weapons

Air-launched explosive weapons killed and injured **7,202** civilians in 2018 (**32%** of all recorded).

Civilian casualties from aerial explosive weapons in 2018 fell by **50%** from 2017 levels.

16 countries and territories saw casualties in 2018. The civilians killed and injured by air-launched weapons in Syria account for **70%** of all civilians killed or injured worldwide by such weapons.

When aerial explosive weapons were used in populated areas, **91%** of those killed and injured were civilians.

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.

After a substantial increase in airstrikes in 2017, last year, AOVAV recorded 982 incidents of air-launched weapon use in 2018 – a 40% fall from the year before. This decrease can be attributed to the reduced campaigns across Syria and Iraq, where air-launched incidents fell by 55% and 74% respectively.

This decrease was accompanied by a fall in civilian deaths and injuries globally – 50% – compared to 2017. A total of 7,202 civilian deaths and injuries were recorded in incidents involving air-launched weapons.

Air-launched weaponry accounted for 32% of all civilian deaths and injuries recorded worldwide.

In total, AOVAV recorded 12,231 total deaths and injuries from aerial explosive weapons in 2018. Civilians accounted for 59% of these casualties, a lower share than last year, when they accounted for 69%.

When aerial explosive weapons were used in areas reported as being ‘populated’, 91% of those killed and injured were civilians – a slight decrease from 2017, when the figure was 93%. In areas that were not recorded as populated, that figure dropped to 10%.

In 2018, 52% of incidents using air-launched weaponry were recorded in populated areas, significantly less than the 68% recorded in 2017, though more reflective of the years previous to this. In 2016, the percentage was 46%, 43% in 2015, and 47% in 2013. (2014 reached a similar level to 2017, with the figure reaching 63%, which is thought to be due to the intensity of Israel’s Operation ‘Protective Edge’ in Gaza.)

COUNTRIES

The majority of civilian casualties from air-launched explosive weapons in 2018 were recorded in Syria (see Figure 8). The use of air-launched explosives on densely populated cities in Syria is responsible for the majority of civilian casualties from such weapons. The civilians killed and injured by air-launched weapons in Syria account for 70% of all civilians killed or injured worldwide by such weapons.

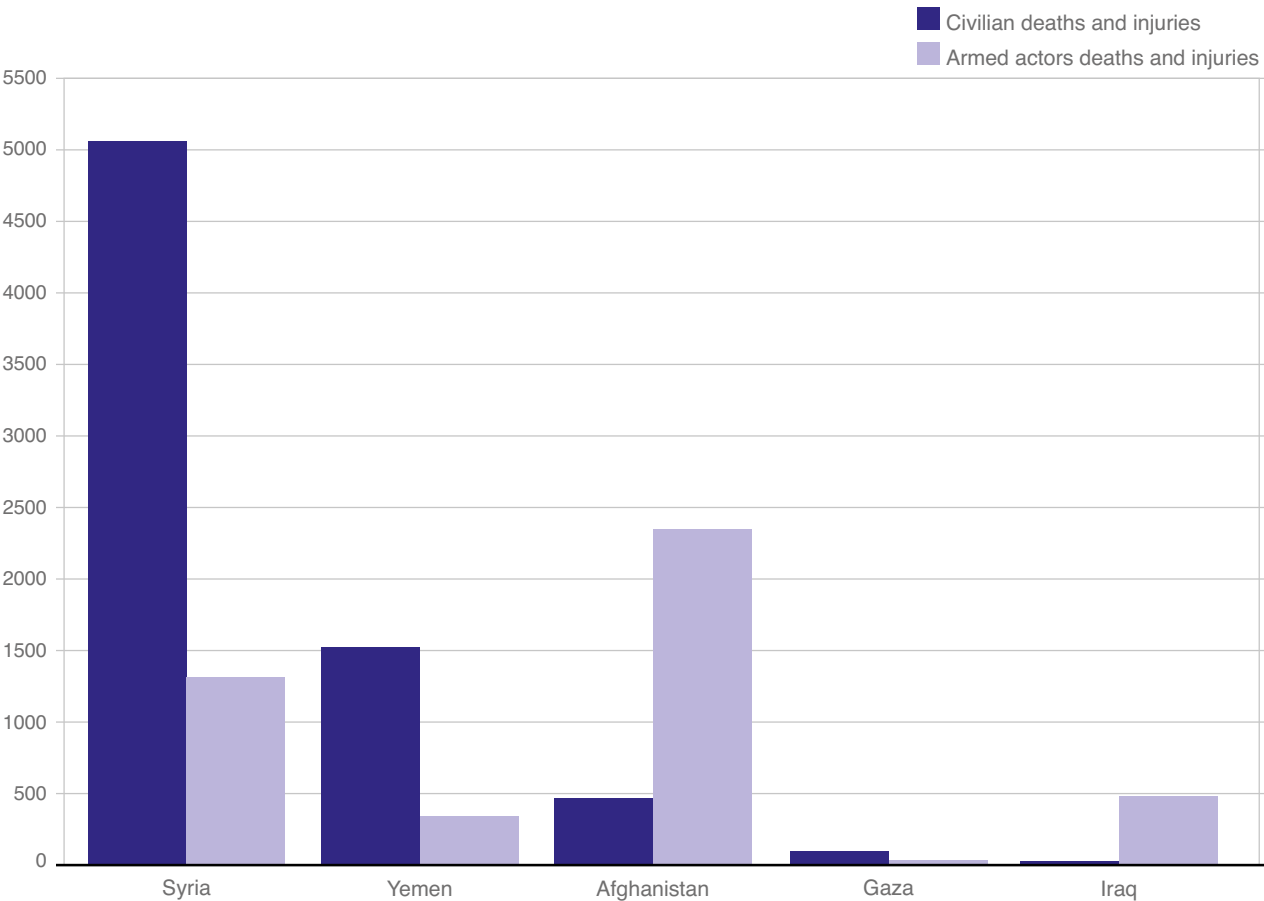
Following Syria was Yemen, with 1,862 casualties from airstrikes, of which 1,523 (82%) were civilians. Civilian casualties from airstrikes in Yemen made up 21% of civilian casualties from this weapon type. Yemen also experienced an 8% rise in civilian casualties from airstrikes last year.

Afghanistan also experienced a rise in airstrikes, accounting for a 95% increase in civilian harm from such weaponry in the country.

USERS

The number of incidents of air-launched weapons being used in Syria increased from 274 in 2016, to 991 in 2017, and then decreased last year to 444. 2018 saw civilian deaths and injuries from airstrikes decrease by 42%, from 8,767 in 2017, to 5,061 in 2018.

Figure 8 Worst five countries for air launched weapons in 2018



This reflects a fall in attacks and subsequent civilian casualties by the US-led coalition particularly, after the heavy bombardment of Raqqa the previous year.

In Syria, the Russian and Syrian governments continued to carry out airstrikes. However, it remains the case that it is often difficult to identify whether the perpetrator is Syria or Russia or both. This is particularly the case when civilian casualties are recorded – they are far more likely to claim an attack that has resulted in only armed actor deaths and injuries.

Nevertheless, AOVAV identified Syria as responsible for 972 civilian casualties from airstrikes and Russia for 691 – though these figures are likely to be far less than the reality. In Syria, of the 5,061 civilian casualties recorded from airstrikes, 2,153 (42%) were recorded with an unknown perpetrator.

The Saudi-led coalition accounted for 16% (153 incidents) of all incidents recorded, the most prolific

identified user of air strikes last year. The US-led coalition came second, accounting for 13% (126 incidents) of all recorded incidents. A further 113 incidents were recorded as perpetrated by the US, outside of the US-led coalition – these were recorded in Afghanistan, Libya, Pakistan, Somalia and Yemen.

The Coalition claims that its precision air campaign allowed it to bomb IS out of Raqqa while causing very few civilian casualties. On the ground in Raqqa we witnessed a level of destruction comparable to anything we’ve seen in decades of covering the impact of wars.

Donatella Rover, Senior Crisis Response Advisor on the ground in Raqqa, June 2018.³⁰

Ground-launched explosive weapons

Ground-launched explosive weapons were responsible for **3,444** civilian casualties in 2018 (15% of the total recorded).

76% of ground-launched explosive weapon casualties were civilians.

Ground-launched attacks were more likely to be reported in populated areas than other kinds of incident. **66%** of all ground-launched incidents recorded were reported as taking place in populated areas.

AOAV recorded casualties from ground-launched explosive weapons in **42** countries and territories in 2018.

Six civilians were killed on average per incident in grenade attacks.

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 4,524 people in 2018; 3,444 of whom were civilians (15% of all recorded civilian deaths and injuries from this weaponry). This is a similar figure to that recorded

in 2017 when AOA V recorded 4,832 casualties from explosive weapons, of which 3,813 were civilians.

In 2018, civilians made up 76% of all those killed or injured by ground-launched weapons.

As in previous years, ground-launched attacks were more likely to be reported in populated areas than other kinds of incident. 66% of all ground-launched incidents recorded were reported as taking place in populated areas, compared to 52% of air-launched incidents and 55% of IED incidents.

COUNTRIES

AOAV recorded casualties from ground-launched explosive weapons in 42 countries and territories in 2018. 37% of the deaths and injuries from this launch method were in Syria.

Afghanistan, Pakistan, India, Yemen and Ethiopia all saw over 100 civilian casualties from ground-launched explosives.

PERPETRATORS

Ground-launched explosive weapons were used almost equally by state and non-state actors in 2018.

Non-state actors were recorded as responsible for 35% of incidents and state actors for 39% of all ground-launched attacks – the remainder being unattributed or caused by both non-state and state use of ground-launched explosives.

SPECIFIC TYPES

Figure 9 illustrates the range of ground-launched weapon types that AOA V tracks, and their respective impact on civilians in 2018.

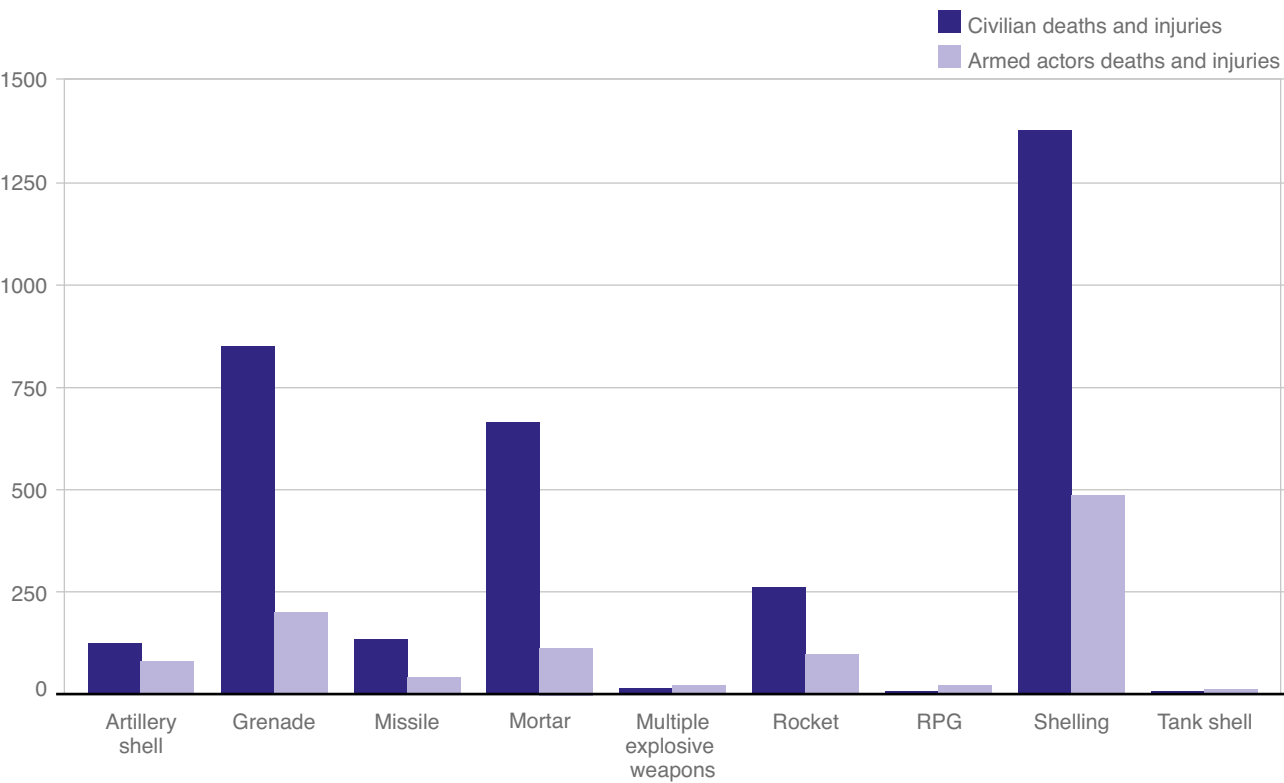
I have never see shelling like that, the bombs were pouring on us like rain.

Zeina, a resident of Jenderess a village in Afrin, Syria, told Amnesty International of the Turkish shelling on civilian areas in early 2018.³¹



A Syrian-Kurdish girl skates on the street in the Syrian enclave of Afrin, in the north, after it was captured by Turkish-backed forces. April 29, 2018 via Jordi Bernabeu Farrús on Flickr, Sameer Al-Doumy AFP.

Figure 9 Casualties by ground-launched weapon type



Improvised explosive devices (IEDs)

IEDs were responsible for **9,366** civilian casualties (**42%** of the total civilian casualties in 2018).

75% of those killed and injured by IEDs were civilians.

2018 continues a downward trajectory for civilian casualties from IEDs that began in 2013.

IEDs resulted in at least one casualty in **49** different countries and territories, two more than in 2017.

For the second consecutive year, Afghanistan was the country worst impacted by IEDs, with the most civilian casualties from this weapon type.

DEATHS AND INJURIES

In 2018, AOA V recorded 12,525 deaths and injuries from IEDs – meaning they constitute 39% of all explosive weapon harm.

Civilians continue to bear the brunt of such attacks, accounting for 75% of all casualties (9,366). Overall, this represents a drop from the previous year. In 2017, AOA V recorded 14,724 deaths and injuries as a result of improvised explosive devices, of which 11,791 were civilians (80%).

2018 again continues a largely unbroken downward trajectory for civilian casualties from IEDs that began in 2013. However, after a brief respite in 2017, when airstrikes accounted for the largest number of civilian

deaths and injuries, IEDs again caused the most deaths and injuries – as has been seen consistently since 2011.

Despite a fall in civilian casualties from IEDs last year, there was a slight increase in the number of IED incidents recorded, with 1,329 seen in 2018 compared to 1,058 the previous year.

As with other kinds of weapon, IEDs caused particularly high levels of civilian harm when used in populated areas, which was the case in 55% of all recorded attacks – totalling some 729 incidents. In these incidents, 87% of reported deaths and injuries were civilians, contrasting with 33% in other areas. On average, IED incidents in populated areas killed or injured 12 civilians per attack.

COUNTRIES

In 2018, IEDs resulted in at least one casualty in 49 different countries and territories, two more than in 2017. *Figure 10* shows the seven countries that saw the most civilian casualties from IEDs in 2018.

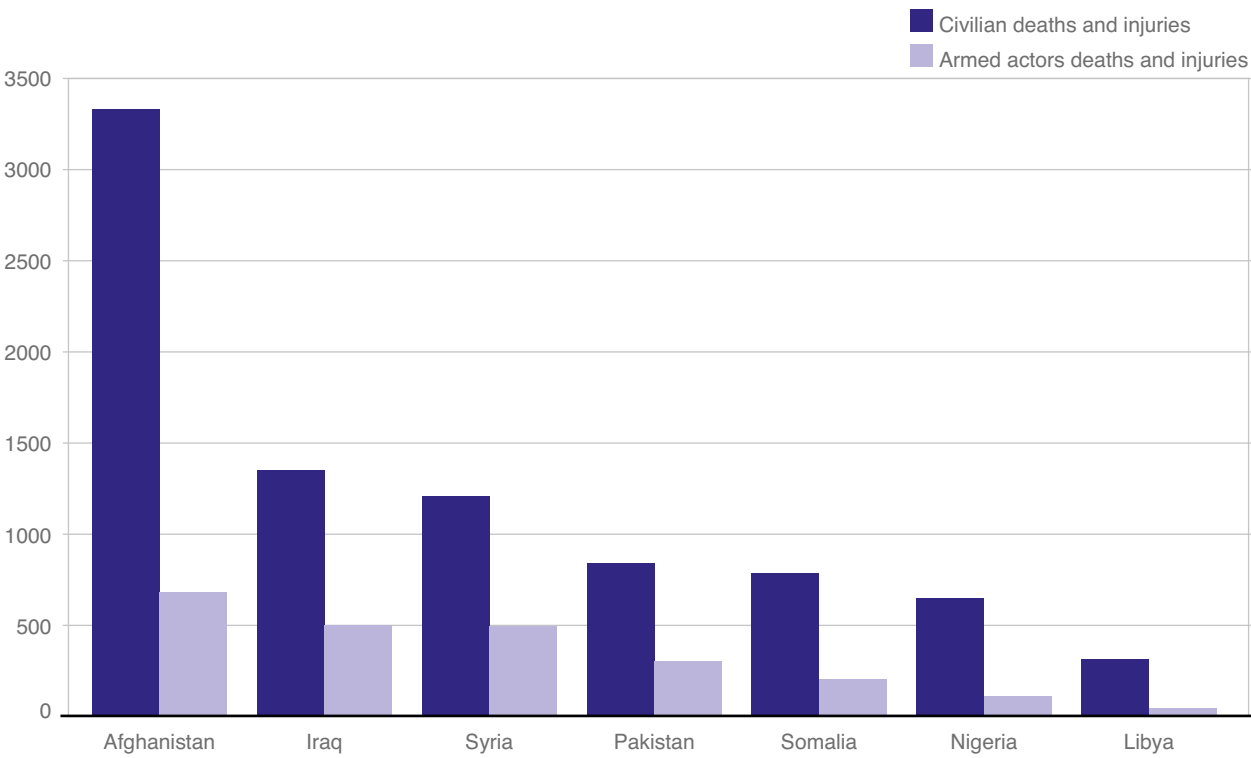
In 2018, three countries saw more than 1,000 civilian deaths and injuries from IED attacks: Afghanistan, Iraq and Syria.

For the second consecutive year, Afghanistan was the country worst impacted by IEDs, with the most civilian casualties from this weapon type – despite both Iraq and Syria seeing more IED incidents. This is largely due to the fact that in Syria and Iraq they are now seeing fewer suicide attacks and more victim-operated ones laid by ISIS. Afghanistan is increasingly seeing larger car and suicide bombings.

Suicide attacks alone were responsible for 78% of civilian casualties from IEDs in Afghanistan.

Iraq remained one of those countries worst impacted by IEDs. However, the number of civilians killed or injured by IEDs in Iraq fell by 46% compared to 2017, when it had also seen a decrease of almost 50%. Since 2016, civilian casualties from IED incidents in Iraq have decreased by 72%. This reflects the loss of ISIS ground and their decreased ability to carry out complex IED attacks.

Figure 10 Top seven countries for civilian IED casualties in 2018



Syria also saw a fall in civilian casualties from IEDs for similar reasons. In Syria, the number of civilian casualties from such weapon use dropped by 35%.

USERS

IEDs were exclusively used by non-state actors in 2018. AOA V recorded IED usage by 33 non-state entities.

Of the 414 incidents for which responsibility was assigned, 44% were attributed to ISIS groups, though these accounted for 61% of civilian deaths and injuries from IED incidents where the perpetrator was identified. Following ISIS, the largest numbers of civilian deaths and injuries were caused by Al Shabaab (14%) the Taliban (11%) and Boko Haram (6%).

Figure 11 shows the locations where the most civilian harm resulted from IED attacks. IED attacks on public buildings caused the highest number of civilian deaths and injuries in 2018. AOA V recorded 42 incidents of this kind resulting in 1,411 deaths and injuries, of which 94% were civilians. Many of these attacks targeted buildings used as part of elections, such as voter registration centres, election commission buildings, or polling stations.

Other particularly badly affected areas included public gatherings, places of worship and markets. Such locations prove to be popular targets as they often have a particularly dense concentration of civilians.

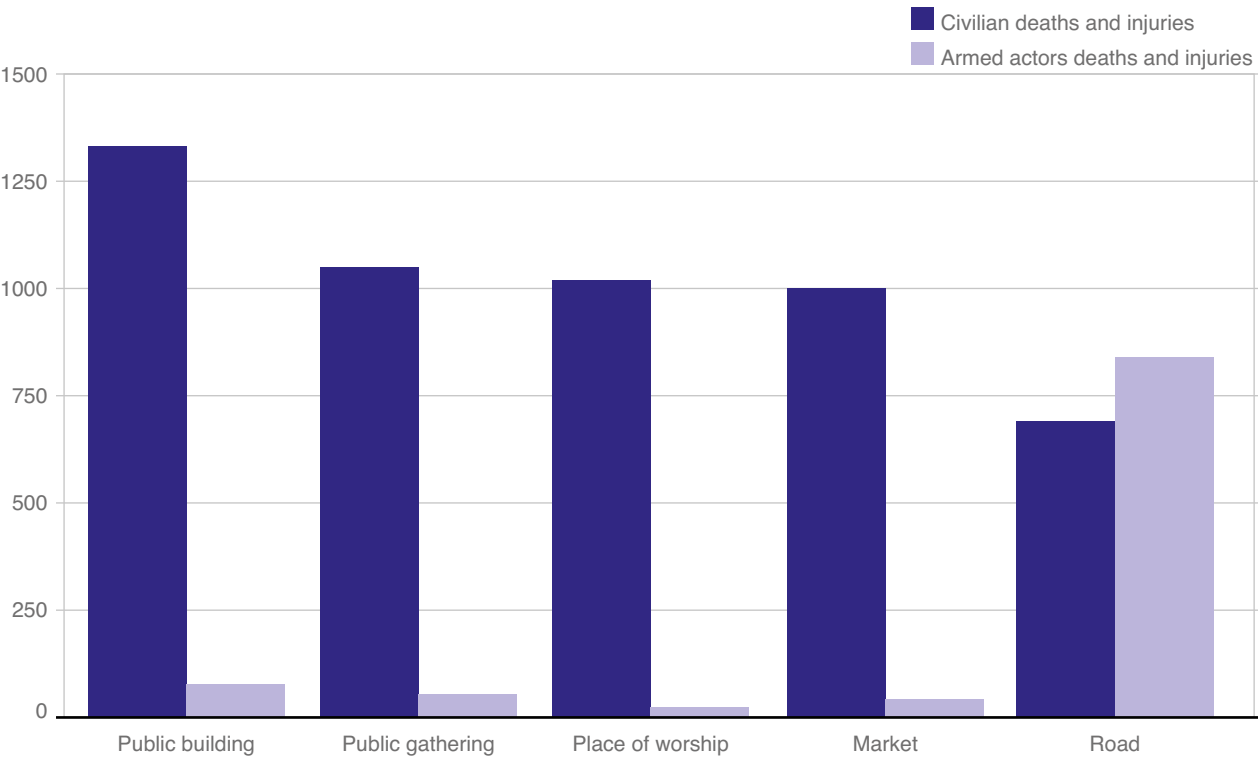
DELIVERY METHOD AND DETONATION SYSTEM

AOA V's recording distinguishes between car bombs,³² roadside bombs and more general non-specific IEDs. The majority of incidents (59%) reported were recorded as non-specific IEDs. Roadside bombs accounted for a further 28% and car bombs for 13%. As is typically the case given their greater payload capacity, car bombs were the most injurious IED type for civilians, killing and injuring on average 16 civilians per incident.

Whilst non-specific IEDs saw an average of seven civilian casualties per incident and roadside bombs saw two.

For the majority of IED incidents no detonation mechanism was reported. Often the detonation mechanism is not reported. Nonetheless, AOA V recorded detonation mechanisms for 37% of reported incidents.

Figure 11 Locations where the most civilian harm resulted from IED attacks



VICTIM-ACTIVATED IEDS

Victim-activated devices are most commonly detonated when a person or animal stands on them, or when they are driven over.³³ IEDs detonated in this fashion are typically considered as de facto antipersonnel mines³⁴ under the Mine Ban Treaty and are therefore prohibited under international humanitarian law.³⁵ Their random trigger mechanism means that they cannot distinguish between armed actors and civilians, and as such are inherently indiscriminate.

AOAV recorded 217 incidents involving victim-activated IEDs in 2018, or 8% of the total number of victims from IEDs (5% of civilian casualties from IEDs) and 6% of the total number of explosive violent incidents world-wide.

In 2018, victim-activated IEDs resulted in the lowest average civilian deaths and injuries per incident, with an average of two civilians being killed or injured in each attack. This is consistent with AOA’s findings from previous years.

COMMAND-OPERATED IEDS

These are detonated generally by radio signals or command wire. AOA 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 four civilian deaths and injuries per remote-detonated IED attack in 2018. Even where they are used to target armed actors, civilians were often killed or injured by these IEDs in 2018, either because of their large blast effects or the deployment of these weapons in populated areas.

In 2018, 34% 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, 81% of those harmed were civilians (290 in total), compared to 9% in non-populated areas (114 in total).

SUICIDE BOMBINGS

Suicide bombings, including car bombs operated by suicide bombers, are a form of command-operated IEDs. In total AOA recorded 215 suicide bombings in 2018, killing a reported 6,818 people. 5,513 of those killed and injured were civilians (81%), representing a decrease of 26% compared to 2017.³⁶

On average, 26 civilians were killed and injured by each suicide bombing – 4 fewer than in 2017, when the average was 30.

Further, incidents using multiple types of explosive weapons but involving a suicide attacker resulted in an additional 182 casualties, including 131 civilians, from three incidents.

Although suicide bombings represented only 16% of all IED incidents recorded, they accounted for 54% of all deaths and injuries from IED attacks.

62% (134 incidents) of the suicide bombings reported were recorded as non-specific IEDs, which, in the case of suicide bombings, largely refers to suicide vests. 36% (78 incidents) were recorded as car bombs. Non-specific suicide IED attacks caused an average of 27 civilian deaths and injuries per incident, whilst

suicide car bombs caused an average of 21. This is not typically the case. In previous years, AOA has consistently found suicide car bombs to cause the greatest number of casualties.

AOAV recorded suicide attacks in 21 countries. The countries worst affected by suicide bombing in 2018 were Afghanistan (2,563 civilian deaths and injuries), Pakistan (685), Nigeria (645), Somalia (527) and Iraq (354).

After a consistent increase in civilian casualties from suicide attacks since 2013, in 2018 Afghanistan was the country worst impacted by suicide bombings.

Afghanistan saw an 18% rise in civilian deaths and injuries from suicide attacks in 2018 compared to the previous year – during which the country had already witnessed a 64% increase compared to 2016. 60% of all civilian casualties from suicide attacks in Afghanistan last year took place in just one city – Kabul. For incidents where the perpetrator group was identified, the Taliban was responsible for 26% of civilian casualties, whilst ISIS was responsible for 74%. This is quite different to the situation in 2017, when the Taliban was responsible for 59% of civilian casualties, whilst ISIS was responsible for 41% from suicide attacks in Afghanistan.



Remains of the car bomb in 2018 Chabahar suicide bombing. December 6, 2018. Tasnim News.



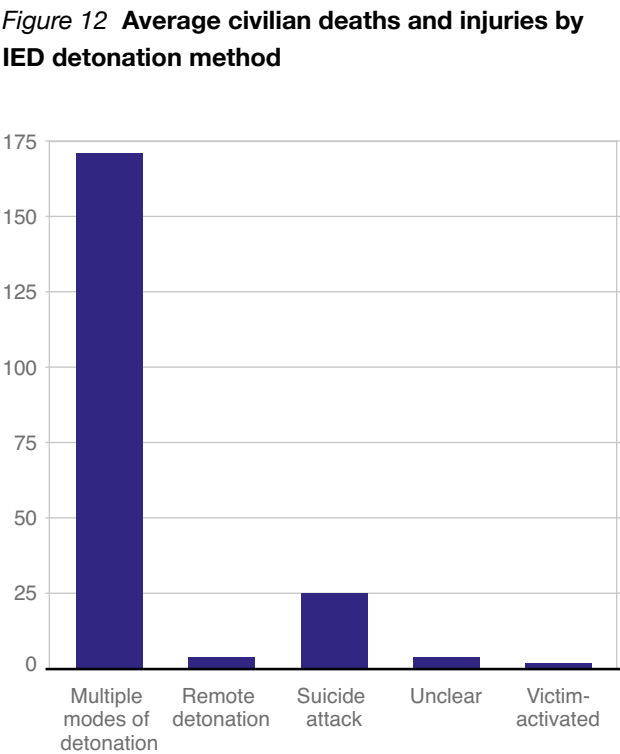
Waiting for the horror to end. Children watch as an aid convoy of Syrian Arab Red Crescent drives through the besieged town of Douma, Eastern Ghouta, Damascus, Syria, March 5, 2018. REUTERS/Bassam Khabieh, Jordi Bernabeu Farrús on Flickr.

Suicide attacks by ISIS also saw a higher percent of civilian casualties compared to those of armed actors, with civilians accounting for 86% of casualties from ISIS suicide attacks in the country.

ISIS suicide attacks caused an average of 46 civilian casualties per incident. The Taliban on the other hand saw civilians account for 78% of casualties from their suicide attacks, and their attacks killed or injured an average of 25 civilians per incident.

As with elsewhere, when suicide bombings were used in populated areas they inflicted much higher levels of civilian harm. 72% of recorded incidents took place in populated areas. In these attacks, around 89% of those killed and injured were civilians. This compares to 19% in other areas.

Suicide attacks in populated areas caused an average of 35 civilian deaths and injuries per incident.



Conclusion

Despite a global decrease in casualties from explosive violence, civilians continue to suffer disproportionately from the use of such weapons. This is especially so when explosive weapons, particularly those with wide area effects, are used in populated areas. AOA’s 2018 data on explosive harm continues to demonstrate that when explosive weapons are used in populated areas this will almost inevitably cause civilian deaths and injuries. Explosive violence in populated areas is used by both state and non-state actors alike, despite such evidence showing that over 90% of those killed and injured will be civilians.

Civilian deaths and injuries in populated areas represented 91% of all reported civilian deaths and injuries in 2018. In such contexts, even when a so-called ‘precision’ weapon is used, and rigorous targeting procedures are claimed to be utilised, it remains virtually impossible to avoid civilian casualties.

The use of explosive violence in these areas not only leads to civilian deaths and injuries but also destroys infrastructure, which may deprive communities of water, sanitation, electricity and/or medical care for example, and forces civilians to flee their homes.

AOA’s examination of the reverberating effects from the use of explosive weapons shows the long-term devastation that continues to plague the lives of civilians even decades after the violence has ended.

While the number of casualties from the use of IEDs continued to fall in 2018, such improvised weapons left over 12,000 casualties; their use by non-state actors remains a source of concern. Though much of the harm that had been seen from these weapons in Iraq and Syria has decreased as ISIS has been forced from the region, as civilians begin to return home, many are suffering the consequences of IEDs left behind by the group. Further, while ISIS’ presence has reduced in Iraq and Syria their presence increases in Afghanistan where the harm from such attacks saw that nation become the second worst impacted country from explosive violence last year, and the worst impacted by IEDs and suicide attacks globally.

Overall, the tragic reality is that numbers of civilians killed or injured by air and ground-launched explosive weapons, as well as by IEDs, is almost certainly higher than the 22,342 that AOA has recorded.



Lost Childhoods: Children are seen in front of makeshift tents at Darwan refugee camp in Amran north of Sana’a, Yemen on April 11, 2018 [Mohammed Hamoud/Anadolu Agency] via Felton Davis on Flickr.

In this 2018 publication, AOA V has sought to use numbers and statistics to illuminate the suffering caused by explosive weapons. Inevitably, as we sift through information and mark trends, it becomes easy to see each number as another piece of data, as another chalk mark scratched on a wall, not as a human life lost, a family destroyed.

The international community must not only take note of the scale of the figures we have included in this report, but be cognisant of the fact that each number represents a life, frequently young, and almost always a civilian.

We have given the population a loathsome image of what a Western-style liberation may be like, leaving behind the seeds for an imminent resurgence of a new adversary.

Col. François-Régis Legrier,
French artillery commander following mortar strikes in Baghouz, December 2018.³⁷

As a member of the International Network on Explosive Weapons (INEW), AOA V and its colleagues urges 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.

In developing these standards, states and other actors should make a commitment that explosive weapons with wide area effects will not be used in populated areas.



New York Times: Wedding is hit by airstrike in Yemen, killing more than twenty, via Felton Davis on Flickr, uploaded April 28, 2018.

Recommendations

- States and other actors should stop using explosive weapons with wide area effects in populated areas.
- Previous AOA V reports, along with other notable publications by UNOCHA, ICRC and CIVIC, have shown the impact that strong, progressive rules of engagement can have in limiting the impact of explosive weapons on civilians. States should review their policies and practices on the use of explosive weapons in populated areas, particularly those which may be expected to impact a wide area.
- States, international organisations and civil society should work together to further a process to develop an international political declaration to address the harm caused to civilians by the use of explosive weapons in populated areas, in line with the recommendations of the United Nations Secretary General.
- States should be transparent about civilian casualties and casualty recording methods, and should routinely investigate and report on every casualty caused by their use of explosive weapons.
- 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 stake-holders 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 be cognisant of the fact that even where civilians have not been immediately killed or injured as a result of explosive violence, the reverberating effects of attacks may have an impact on infrastructure and civilians' daily lives and survival.
- 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.
- 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.
- AOA V has demonstrated over eight 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.
- 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, 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.

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.³⁹

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 2018.

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. We also use the most credible data cited (i.e. the lower limit of civilian harm) from organisations such as Airwars.

RECORDING GUIDELINES

Civilian/ armed actor or security personnel:

All casualties are assumed to be civilians unless otherwise stated.⁴⁰ Casualties are recorded as 'armed actors' if they are reported as being members of the military,

members of non-state armed groups, or security personnel who are likely to be armed, for example; police, security guards, intelligence officers, and paramilitary forces.

Intended target:

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

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

Populated area:

Incidents are designated as occurring in populated areas likely to contain concentrations of civilians if: a) It is stated in the source (e.g. a busy street, a crowded market); b) If an incident occurs in or near a pre-defined location which is likely to contain concentrations of civilians e.g. commercial premises, entertainment venues, hospitals, hotels, encampments (containing IDPs, refugees, nomads), markets, places of worship, public gatherings, public buildings, public transport, schools, town centres, urban residential neighbourhoods, villages/ compounds.

This definition of a populated area is based on Protocol III of the 1980 Convention on Certain Conventional Weapons (CCW) which defines concentrations of civilians as: *"any concentrations of civilians, be it permanent or temporary, such as in inhabited parts of cities, or inhabited towns or villages, or as in camps or columns of refugees or evacuees, or groups of nomads."*⁴¹

User status:

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

- The group or actor responsible has claimed responsibility.
- The user of the explosive weapon is clearly stated in the report.
- If the user of the explosive weapon has employed technology clearly associated only with that user in the context in question.

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

LIMITATIONS

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

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

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

On a number of occasions firearms were also reported as having been used alongside explosive weapons. While AOAV always tries to determine the casualties specifically caused by explosive weapons, in these incidents new sources are not always able to clarify which casualties were caused by which weapon type, particularly in incidents that involved large numbers of casualties. It is therefore possible that some casualties in these incidents may not have been caused by explosive weapons.⁴²



Yemeni men carry the body of victim who was killed in air strike in the district of Al-Hali in Hodeida province, on April 2, 2018. ABDO HYDER/AFP/Getty Images, via Felton Davis on Flickr.

AOAV 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. Last year, AOA V recorded 88 incidents of accidental detonation resulting in 394 deaths and injuries, 173 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 2018, AOA V recorded 70 incidents involving unexploded ordnance causing 200 civilian deaths and injuries. The actual number of casualties from ERW is far higher.⁴³⁷

Poorly secured or stockpiled explosive weapons can also cause unintended harm to civilians. AOA V recorded eight stockpile explosion in 2018.

Media reports used by AOA V 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 159 incidents out of 3,461 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 school girl is being rushed on a stretcher to a hospital after she was injured by an airstrike near her school in Saada, Yemen, April 9, 2018. REUTERS photo by Naif Rahma. Via Felton Davis on Flickr.

Notes

1

United Nations, ‘Protection of civilians in armed conflict: Report of the Secretary-General’, 07 May 2019, S/2019/373, <https://aoav.org.uk/wp-content/uploads/2019/05/POC-report-2019-en.pdf> (accessed 17 May 2019).

2

Chris Hitchcock, ‘Patterns of Harm: Five years of explosive violence 2011-2015’, (AOAV 2016) <https://aoav.org.uk/wp-content/uploads/2016/08/Patterns-of-Harm.pdf> (accessed 08 Apr. 2019).

3

The definition of a populated area used by AOA V is based on Protocol III of the 1980 Convention on Certain Conventional Weapons (CCW) which defines concentrations of civilians as: “any concentrations of civilians, be it permanent or temporary, such as in inhabited parts of cities, or inhabited towns or villages, or as in camps or columns of refugees or evacuees, or group of nomads.” The full definition is available at: “Protocol on Prohibitions or Restrictions on the Use of Incendiary Weapons (Protocol III),” ICRC, Geneva, 10 October 1980, posted by U.S. Department of State, www.state.gov/documents/organization/190579.pdf (accessed 08 Apr. 2019). AOA V’s guidelines for recording an area as populated are included in the Methodology.

4

Iain Overton et al, ‘Wide-Area Impact: Investigating the wide-area effect of explosive weapons’, (AOAV 2015) <https://aoav.org.uk/wp-content/uploads/2016/03/Wide-Area-Impact-explosive-weapons-in-populated-areas.pdf> (accessed 08 Apr. 2019).

5

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.

6

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.

7

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 01.40:2015(E) 2nd Edition (2015-02-01) <https://unoda-web.s3-accelerate.amazonaws.com/wp-content/uploads/assets/convarms/Ammunition/IATG/docs/IATG01.40.pdf> (accessed 08 Apr. 2019).

8

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 01.40:2015(E) 2nd Edition (2015-02-01) <https://unoda-web.s3-accelerate.amazonaws.com/wp-content/uploads/assets/convarms/Ammunition/IATG/docs/IATG01.40.pdf> (accessed 08 Apr. 2019).

9

Mortars are generally indirect-fire weapons which fire projectiles over a high-trajectory and do not depend on a line-of-sight. Erich G. Berman, Pierre Gobinet and Jonah Leff, “Mortars,” Small Arms Survey, Research Notes - Number 2, February 2011, www.smallarmssurvey.org/fileadmin/docs/H-Research_Notes/SAS-Research-Note-2.pdf (accessed 08 Apr. 2019).

10

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 page 36.

11

SOHR, ‘155 were killed yesterday including 4 members of the regime forces and militiamen loyal to them and 146 civilians’, February 21 2018, <http://www.syriahr.com/en/?p=85344> (accessed 30 Apr. 2019).

12

Al Jazeera, ‘Syria chemical attack: Scores killed in Douma, rescuers say’, April 08 2018, <https://www.aljazeera.com/news/2018/04/suspected-chemical-attack-kills-dozens-syria-douma-180407202906316.html> (accessed 30 Apr. 2019).

13

SOHR, ‘In the highest death toll since the chemical-massacre in Ghouta, 250 civilians were killed by the hysterical attack of the regime and its allies on the besieged Ghouta in 48 consecutive hours’, February 20 2018, <http://www.syriahr.com/en/?p=85284> (accessed 30 Apr. 2019).

14

Dawn, ‘31 killed in suicide blast outside Quetta polling station’, July 25 2018, <https://www.dawn.com/news/1422529> (accessed 30 Apr. 2019).

15

Guardian, ‘We have no security’: Kabul reels from deadly ambulance bombing’, January 28 2018, <https://www.theguardian.com/world/2018/jan/28/afghanistan-kabul-reels-bomb-attack-ambulance> (accessed 30 Apr. 2019).

16

SOHR, ‘In the highest daily death toll in months, 389 at least were killed yesterday including 246 at least and they are 135 civilians including 34 children and women, and 111 gunmen were killed in al-Suwaidaa Province’, July 26 2018, <http://www.syriahr.com/en/?p=98874> (accessed 30 Apr. 2019).

17

New York Times, ‘Extreme’ Suffering in Syria as Government Steps Up Bombing’, February 06 2018, <https://www.nytimes.com/2018/02/06/world/middleeast/syria-bombing-damascus-united-nations.html> (accessed 30 Apr. 2019).

18

CNN, ‘Afghan suicide bombing kills 68 in deadly month for attacks’, September 12 2018, <https://edition.cnn.com/2018/09/12/asia/afghanistan-suicide-bombing-intl/index.html> (accessed 30 Apr. 2019).

19

Al Jazeera, ‘It was a massacre’: Dozens killed in Saudi air raids on Hodeidah’, August 03 2018, <https://www.aljazeera.com/news/2018/08/casualties-saudi-led-coalition-air-raids-hit-yemen-hodeidah-180802163441327.html> (accessed 30 Apr. 2019).

20

BBC, ‘Afghanistan: Kabul voter centre suicide attack kills 57’, April 22 2018, <https://www.bbc.co.uk/news/world-asia-43855884> (accessed 30 Apr. 2019).

21

In 2011 AOA V recorded an average of 16 civilian deaths per day; an average of 22 in 2012, 25 in 2013 and 29 in 2014, 30 in 2015, 38 in 2016.

22

In alphabetical order the 64 countries are: Afghanistan, Albania, Algeria, Argentina, Armenia, Azerbaijan, Bangladesh, Bolivia, Brazil, Burkina Faso, Burundi, Cambodia, Cameroon, Canada, Central African Republic, China, Colombia, Ecuador, Egypt, Ethiopia, Gaza, Greece, India, Indonesia, Iran, Iraq, Israel, Italy, Jordan, Kenya, Kuwait, Lebanon, Libya, Mali, Malta, Mexico, Moldova, Montenegro, Myanmar, Nepal, Niger, Nigeria, Pakistan, Peru, Philippines, Russia, Saudi Arabia, Serbia, Somalia, South Sudan, Sri Lanka, Sudan, Sweden, Syria, Tajikistan, Thailand, Tunisia, Turkey, Uganda, Ukraine, USA, Venezuela, Yemen, Zimbabwe.

23

These only include casualties from an explosive weapon at its time of use. AOA V 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 page 37.

- 24 In alphabetical order these were; Albania, Argentina, Bolivia, Brazil, Ecuador, Iran, Kuwait, Mexico, Moldova, Peru, Serbia, Sweden, Tajikistan, Tunisia, Uganda, Zimbabwe.
- 25 Abu Sayyaf (Philippines), Afrin Falcons (Syria), Al Qaeda affiliates: Jama'at Nasr al-Islam wal Muslimin/ Group to Support Islam and Muslims (Mali), Al Shabaab (Kenya and Somalia), Anarchist group (Greece), Ansar al-Furqan (Iran), Ansar al-Tawhid (Syria), AQIM (Tunisia), Baloch Liberation Army (Pakistan), BIFF (Philippines), Boko Haram (Cameroon, Niger and Nigeria), CPI (naxals) (India), ELN (Colombia), Former FARC rebels (Ecuador), Gulf Clan (Colombia), Hamas (Israel), Hayyaat Tahrir al-Sham (Syria), Hezbollah (Lebanon), Houthis rebels (Saudi Arabia and Yemen), ISIS (Afghanistan, Egypt, Indonesia, Iraq, Libya, Mali, Pakistan, Russia, Syria and Yemen), Jaish-e-Mohammad (India), Kurdish gangs (Iraq), Lashkar-e-Taiba (India), Libya (East) (Libya), Local Mafia group (Italy), NPA (Philippines), NSCN-K (India), Pakistan Taliban (Pakistan), People's Liberation Army (India), PKK (Iraq and Turkey), Popular Mobilisation Units (Syria), Pro-governemnt militias (Sudan), Pro-government militia (Afghanistan), SDF (Syria), Syrian rebels (Syria), Taliban (Afghanistan), Tehreek-ul-Mujahideen (India), Ukrainian separatists (Ukraine), United Liberation Frony of Assam Independent (India), United National Liberation Front (India), White supremacist group (USA), YPG (Syria and Turkey). There were also various other actors identified only as gangs, rebels or separatists and those that staged the Turkish coup.
- 26 *Washington Post*, "It was a horror scene": Scores of Afghan students killed in Kabul suicide bombing aimed at minority Shiites', August 15 2018, https://www.washingtonpost.com/world/suicide-bomber-kills-at-least-25-in-shiite-district-of-afghan-capital/2018/08/15/c404df6e-a08b-11e8-a3dd-2a1991f075d5_story.html?noredirect=on&utm_term=.1d04606f6a1b (accessed 01 May 2019).
- 27 *Guardian*, 'Yemen school bus bombing 'one of 50 strikes on civilian vehicles this year'', August 16 2018, <https://www.theguardian.com/world/2018/aug/16/yemen-school-bus-bombing-one-of-50-strikes-on-civilian-vehicles-this-year> (accessed 01 May 2019).
- 28 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.
- 29 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, 'Landmine Monitor 2018', November 2018, http://www.the-monitor.org/media/2918780/Landmine-Monitor-2018_final.pdf (accessed 08 Apr. 2019).
- 30 *Amnesty International*, 'Syria: Raqqa in ruins and civilians devastated after US-led 'war of annihilation'' June 05 2018, <https://www.amnesty.org/en/latest/news/2018/06/syria-raqqa-in-ruins-and-civilians-devastated-after-us-led-war-of-annihilation/> (accessed 01 May 2019).
- 31 *Amnesty International*, 'Syria: Hundreds of civilian lives at risk as Afrin offensive escalates', 28 February 2018, <https://www.amnesty.org/en/latest/news/2018/02/syria-hundreds-of-civilian-lives-at-risk-as-afrin-offensive-escalates/> (accessed 17 May 2019).
- 32 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.
- 33 33 percent of IED attacks with a reported mode of detonation in 2017 were triggered by victim-activation.
- 34 Though some IEDs may be designed to only be triggered by a vehicle. For instances of this please see: CAR, 'Dispatch from the Field: Mines and IEDs Employed by Houthi Forces on Yemen's West Coast', September 2018. Anti-vehicle mines are not covered by the Mine Ban Treaty.
- 35 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 (accessed 08 Apr. 2019).
- 36 In 2017 AOAV recorded 7,457 civilian deaths and injuries as a result of suicide bombings.
- 37 *Daily Beast*, 'The Obliteration of Baghouz: How Many People Died in the Last Stronghold of ISIS?', April 29 2019, <https://www.thedailybeast.com/the-obliteration-of-baghouz-how-many-people-died-in-the-last-stronghold-of-isis-3> (accessed 01 May 2019).
- 38 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 08 Apr. 19); 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 08 Apr. 2019).
- 39 For more information see www.insecurityinsight.org (accessed 08 Apr. 2019).
- 40 In a minority of cases in reported incidents there is a possibility that armed actors were among those killed and injured by explosive weapons, but the exact details of the number of armed actors killed or injured was not recorded. Incidents which meet this profile are coded as 'yes' in a column titled 'Could armed actors be included among the dead and injured?' Incidents coded in this manner represented just 1% of all incidents recorded by AOAV in 2018.
- 41 Protocol on Prohibitions or Restrictions on the Use of Incendiary Weapons (Protocol III), to the UN Convention on Certain Conventional Weapons, Geneva, 10 October 1980, www.icrc.org/ihl.nsf/FULL/515 (accessed 08 Apr. 2019).
- 42 AOAV recorded 65 such incidents in 2018.
- 43 International Campaign to Ban Landmines, 'Landmine Monitor 2018', November 2018, http://www.the-monitor.org/media/2918780/Landmine-Monitor-2018_final.pdf (accessed 08 Apr. 2019).

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