A DECADE OF EXPLOSIVE VIOLENCE HARM
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In this report, Action on Armed Violence (AOAV) presents the findings from ten years’ worth of data (2011 – 2020) collected as part of AOAV’s Explosive Violence Monitoring Project (EVMP). For the last decade, the EVMP has tracked the impact of explosive weapon use worldwide as reported in global English-language media.

Between 2011 and 2020, AOAV recorded 357,370 deaths and injuries as a result of the use of explosive weapons. Civilians have consistently borne the brunt of this violence; accounting for 73% (262,413) of the total casualties caused.

In this decade, at least 123 countries saw at least one death or injury from explosive violence, with some countries being frequently impacted. The five worst impacted countries were Syria, Iraq, Afghanistan, Pakistan and Yemen, according to the number of civilian casualties (killed and injured).

When explosive weapons are used in populated areas, such use massively raised the threat to civilians. Across the last decade, 91% of those reported killed or injured by explosive weapons in populated areas were civilians. Civilian casualties in populated areas also accounted for 91% of all civilian casualties from global explosive violence.

This pattern of harm has been constant throughout AOAV’s monitoring, as shown in our annual findings. So much so that it has fuelled AOAV’s advocacy efforts, as a member of INEW, to prevent the use of explosive weapons in populated areas.

To reiterate the urgency of this matter: when explosive weapons are used in populated areas, at least nine of every ten casualties are likely to be civilian.

Even when explosive weapons are targeted at urban military objectives, civilians are frequently 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 and colleagues. Such blast impacts continue to devastate civilians even beyond deaths and injuries through their reverberating impacts.

The reverberating impacts of explosive weapon use see thousands more civilians affected by explosive weapons than can possibly be hinted at by our casualty figures.

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

Since the monitor began, AOAV has recorded the appalling suffering caused across the globe by both manufactured and improvised weapons. We call on States and other users to commit politically to stop using explosive weapons with wide area effects in populated areas. The harm recorded over the last ten years and reflected in this report illustrates the stark urgency needed for a political declaration detailing such a 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.
OVERVIEW

• When explosive weapons were used in populated areas, **91% of those killed and injured were civilians. This compares to 25% in other areas.**

• In total, 238,892 civilians were killed and injured in populated areas over a decade.

• AOAV recorded 357,370 deaths and injuries by explosive weapons in 28,879 incidents in the last ten years. **Of these, 262,413 were civilians – 73%.**

• In total, 155,118 people were killed (of which 92,588 were civilians), and 202,252 were injured (of which 169,825 were civilians) by explosive weapons globally.

• Civilian deaths and injuries in populated areas represented 91% of all reported civilian deaths and injuries.

• Manufactured explosive weapons accounted for at least 123,485 civilian casualties (47%).
While improvised explosive devices (IEDs) accounted for at least 135,800 civilian casualties (52%). (A further 3,128 civilian casualties were caused by incidents using both improvised and manufactures explosive weapon types.)

- Air-launched explosive weapons were responsible for 23% of all civilian deaths and injuries.
- Ground-launched explosive weapons were responsible for 21%.
- The remaining 4% were caused by incidents using multiples types of explosive weapons (3%), mines (<1%), naval-launched explosives (<1%) and those recorded with an unclear launch method (<1%).
- Syria, Iraq, Afghanistan, Pakistan and Yemen saw the highest number of civilian deaths and injuries in the last decade with 77,534, 56,316, 28,424, 20,719 and 16,645 civilian casualties respectively.
- Nine countries and territories saw over 5,000 civilian deaths and injuries in the last decade.
- Incidents were recorded in 123 countries and territories around the world in the ten years.
EXPLOSIVE VIOLENCE FROM 2011 TO 2020

TOTAL CIVILIAN DEATHS & INJURIES, 2011 – 2020

- Total civilian casualties: 73%
- Total casualties: 262,413

TARGETED AREAS

POPULATED AREAS
- 91% civilian deaths & injuries in populated areas
- Attacks in populated areas: 17,412

NON-POPULATED AREAS
- 25% civilian deaths & injuries in non-populated areas
- Attacks in non-populated areas: 1,467

NUMBER OF INCIDENTS IN POPULATED AREAS PER YEAR

DEADLY WEAPONS

CIVILIAN DEATHS & INJURIES BY AIR-LAUNCHED, GROUND-LAUNCHED AND IEDS, 2011 – 2020

- IEDs (improvised explosive devices): 52%
- Ground-launched: 21%
- Air-launched: 23%
- Combinations or unclear: 4%

DATA: AOAV, BASED ON ENGLISH-LANGUAGE MEDIA REPORTS
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 AOAV considered likely to be armed. This includes police, security guards, intelligence officers, and paramilitary forces. All casualties not reported as belonging to these armed groups were recorded as civilians.

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

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

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.

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

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

- **Mine:** Refers to incidents where the explosive weapon was described as a mine or landmine. These include both antipersonnel and anti-vehicle mines.

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. 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.

- **Rocket:** Typically used to refer to unguided missiles, rockets were recorded wherever they are specified in a news source.
**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.¹¹

- **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.
In total, 155,118 people were killed (of which 92,588 were civilians), and 202,252 were injured (of which 169,825 were civilians) by explosive weapons globally. As has consistently been the case, civilians accounted for the majority of casualties from explosive weapon use in the last ten years, accounting for almost three-quarters (73%) of all recorded deaths and injuries.

Civilians were most at risk when explosive weapons were used in populated areas – a well-established pattern of harm.\textsuperscript{12}

60% of all recorded incidents took place in populated areas. In those attacks, AOAV recorded 263,798 casualties. Civilians accounted for 91% (238,892) of those killed or injured in populated areas. This compares to 25% of victims being reported as civilians when explosive weapons were used in areas not identified as highly populated areas.

### Worst incidents of the last decade

<table>
<thead>
<tr>
<th>Incident</th>
<th>Date</th>
<th>Location</th>
<th>Civilian casualties</th>
</tr>
</thead>
<tbody>
<tr>
<td>A truck bomb detonates in Mogadishu\textsuperscript{13}</td>
<td>14/10/2017</td>
<td>Somalia</td>
<td>828</td>
</tr>
<tr>
<td>Multiple suicide attacks occur at churches and hotels across West and East Sri Lanka\textsuperscript{14}</td>
<td>21/04/2019</td>
<td>Sri Lanka</td>
<td>753</td>
</tr>
<tr>
<td>Airstrike hits community hall in Sanaa as wake is held\textsuperscript{15}</td>
<td>08/10/2016</td>
<td>Yemen</td>
<td>735</td>
</tr>
<tr>
<td>Multiple aerial bombs hit crowded marketplace in Douma\textsuperscript{16}</td>
<td>30/10/2015</td>
<td>Syria</td>
<td>620</td>
</tr>
<tr>
<td>Near-simultaneous suicide bombings hit peace rally in Ankara\textsuperscript{17}</td>
<td>10/10/2015</td>
<td>Turkey</td>
<td>602</td>
</tr>
<tr>
<td>Airstrikes and shelling kills hundreds across Eastern Ghouta\textsuperscript{18}</td>
<td>20/02/2018</td>
<td>Syria</td>
<td>598</td>
</tr>
<tr>
<td>Airstrikes and barrel bombs (including toxic gas) are dropped on Douma\textsuperscript{19}</td>
<td>07/04/2018</td>
<td>Syria</td>
<td>570</td>
</tr>
<tr>
<td>Twin car bombing outside of Al-Salam Mosque and Al-Taqwa Mosque in Tripoli\textsuperscript{20}</td>
<td>23/08/2013</td>
<td>Lebanon</td>
<td>547</td>
</tr>
<tr>
<td>Bomb blast in Kabul during rush-hour in the diplomatic quarter\textsuperscript{21}</td>
<td>31/05/2015</td>
<td>Afghanistan</td>
<td>542</td>
</tr>
<tr>
<td>Islamic State car bomb attack in Baghdad’s commercial district\textsuperscript{22}</td>
<td>03/07/2016</td>
<td>Iraq</td>
<td>524</td>
</tr>
</tbody>
</table>
On average, AOAV recorded 26,241 civilian casualties reported each year, or 2,187 each month. This compares to an average of 9,495 armed actors a year, or 791 a month. This means that, every day, there were on average 72 civilians reported killed or injured by explosive weapons (compared to 26 armed actors).

25 civilians were reported killed on average every day from explosive weapon use in the last decade around the world, while 46 were left injured each day.

AOAV recorded at least one death or injury from an explosive weapon attack in 123 different countries and territories (see map on page 11). Syria was the country with the most civilian deaths and injuries in the last decade followed by Iraq, Afghanistan, Pakistan and Yemen.

Figure 1  Most affected countries and territories 2011-2020

<table>
<thead>
<tr>
<th>Position</th>
<th>Country/Territory</th>
<th>Civilian casualties</th>
<th>All casualties</th>
<th>Number of incidents</th>
<th>Average civilian casualties per incident</th>
<th>Percentage of casualties who were civilians</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Syria</td>
<td>77534</td>
<td>92831</td>
<td>7455</td>
<td>10</td>
<td>84%</td>
</tr>
<tr>
<td>2</td>
<td>Iraq</td>
<td>56316</td>
<td>73471</td>
<td>4637</td>
<td>12</td>
<td>77%</td>
</tr>
<tr>
<td>3</td>
<td>Afghanistan</td>
<td>28424</td>
<td>49107</td>
<td>4204</td>
<td>7</td>
<td>58%</td>
</tr>
<tr>
<td>4</td>
<td>Pakistan</td>
<td>20719</td>
<td>29666</td>
<td>2524</td>
<td>8</td>
<td>70%</td>
</tr>
<tr>
<td>5</td>
<td>Yemen</td>
<td>16645</td>
<td>24498</td>
<td>1422</td>
<td>12</td>
<td>68%</td>
</tr>
<tr>
<td>6</td>
<td>Nigeria</td>
<td>9798</td>
<td>11649</td>
<td>406</td>
<td>24</td>
<td>84%</td>
</tr>
<tr>
<td>7</td>
<td>Somalia</td>
<td>7740</td>
<td>11791</td>
<td>872</td>
<td>9</td>
<td>66%</td>
</tr>
<tr>
<td>8</td>
<td>Libya</td>
<td>6027</td>
<td>8518</td>
<td>626</td>
<td>10</td>
<td>71%</td>
</tr>
<tr>
<td>9</td>
<td>Gaza</td>
<td>5107</td>
<td>5700</td>
<td>764</td>
<td>7</td>
<td>90%</td>
</tr>
<tr>
<td>10</td>
<td>Turkey</td>
<td>3570</td>
<td>5349</td>
<td>324</td>
<td>11</td>
<td>67%</td>
</tr>
<tr>
<td>11</td>
<td>India</td>
<td>3139</td>
<td>5043</td>
<td>1141</td>
<td>3</td>
<td>62%</td>
</tr>
<tr>
<td>12</td>
<td>Ukraine</td>
<td>2705</td>
<td>5049</td>
<td>939</td>
<td>3</td>
<td>54%</td>
</tr>
<tr>
<td>13</td>
<td>Lebanon</td>
<td>2377</td>
<td>2620</td>
<td>143</td>
<td>17</td>
<td>91%</td>
</tr>
<tr>
<td>14</td>
<td>Philippines</td>
<td>2174</td>
<td>3462</td>
<td>495</td>
<td>4</td>
<td>63%</td>
</tr>
<tr>
<td>15</td>
<td>Egypt</td>
<td>2137</td>
<td>4377</td>
<td>343</td>
<td>6</td>
<td>49%</td>
</tr>
</tbody>
</table>

A few seconds later I heard two explosions. I thought that the building had collapsed on my head. I checked that I was okay and went outside. I saw people running towards the al-Heni mosque. The mosque was destroyed. Buildings around the mosque were also destroyed. I started checking who was alive and who was not... The closest Islamic State base is 2km away and there are no checkpoints or vehicles around the mosque.

A local teacher reports of bombing in Raqqa.
AOAV recorded explosive violence in 123 countries and territories across the world. Explosive violence was particularly intense in several contexts.

Casualty-causing incidents of explosive violence recorded by AOAV 2011–2020

- **Countries and territories with between 1,001 and 7,500 incidents**
  - Syria 7,455, Iraq 4,637, Afghanistan 4,204, Pakistan 2,524, Yemen 1,422, India 1,141

- **Countries and territories with between 501 and 1,000 incidents**
  - Ukraine 939, Somalia 872, Gaza 764, Libya 626

- **Countries with between 101 and 500 incidents**
  - Philippines 495, Nigeria 406, Thailand 381, Egypt 343, Burma 218, Israel 182, Kenya 152, Lebanon 143, Saudi Arabia 143, Mali 132, Colombia 124, Sudan 109

- **Countries with between 11 and 100 incidents**
  - Russia 90, Azerbaijan 82, USA 64, Burundi 54, Cameroon 52, South Sudan 45, Mexico 42, Bangladesh 37, Bahrain 34, China 32, Nepal 30, Tunisia 27, Indonesia 26, Cambodia 26, Burkina Faso 26, Democratic Republic of the Congo 25, Algeria 25, Iran 24, Rwanda 24, Armenia 19, Ethiopia 19, Niger 18, Chad 12, Sri Lanka 12, Venezuela 12, UK 12, West Bank 12, Central African Republic 11

- **Countries with between 2 and 10 incidents**
  - Bosnia and Herzegovina 10, Chile 10, France 10, Jordan 10, South Africa 10, Sweden 10, Tanzania 10, Greece 9, Canada 8, Italy 8, Malaysia 8, Uganda 8, Serbia 7, Côte d’Ivoire 7, Kazakhstan 7, Australia 6, Malta 6, South Korea 6, Germany 5, Guatemala 5, Montenegro 4, Republic of Ireland 4, Belgium 3, Cyprus 3, Ecuador 3, El Salvador 3, Kosovo 3, Vietnam 3, Zimbabwe 3, Albania 2, Belarus 2, Brazil 2, Bulgaria 2, Croatia 2, Czech Republic 2, Georgia 2, Guinea 2, Japan 2, Kuwait 2, Laos 2, Madagascar 2, Mauritania 2, Moldova 2, Papua New Guinea 2, Paraguay 2, Peru 2, Senegal 2, Taiwan 2

- **Countries and territories with 1 incident**
  - Argentina, Austria, Bhutan, Bolivia, Congo, Denmark, Djibouti, Estonia, Finland, Guinea-Bissau, Guyana, Hungary, Jamaica, Kyrgyzstan, Macedonia, Malawi, Morocco, Netherlands, North Korea, Norway, Switzerland, Tajikistan, Trinidad and Tobago, Western Sahara
SYRIA

The start of this dataset coincided with the beginning of the conflict in Syria; a conflict that has brought death and destitution to many across the country. Over the course of the conflict hundreds of thousands are thought to have been killed, while 6.6 million have been internally displaced, and 5.6 million have fled Syria. The destruction to infrastructure, the psychological toll, the explosive weapon contamination and the continuing violence are among the many reasons why the Syrian population will remain impacted for decades to come.

In the last decade, AOAV recorded 92,831 deaths and injuries from explosive violence in Syria alone, including 77,534 civilian casualties. As reporting has been hampered by the continued violence and the targeting of journalists, our figures are sure to be an underestimate.

The worst years of violence in Syria were seen in 2016 and 2017 when 13,313 and 13,062 civilian casualties were recorded respectively. These years saw the sieges of Aleppo and Deir Ezzor and the Battle of Raqqa; each, terribly, contributed significantly to the casualty tolls of these years.

Aleppo has seen the highest numbers of civilian casualties over the last ten years, with 20,986 civilian casualties recorded in this period, though most (7,959) occurred in 2016. Idlib has been a consistent target of explosive violence, particularly in the latter years of the conflict. In total, AOAV has recorded 11,390 civilian casualties in this governorate.

Rif Dimashq has seen 9,981 civilian casualties, with a further 8,696 occurring in Damascus. Most casualties occurred in the final months of the siege of Eastern Ghouta in early 2018.

In the last decade, airstrikes accounted for the greatest levels of harm with 34,851 civilian deaths and injuries from airstrikes in Syria: accounting for 45% of all civilian harm from explosive weapons. Ground-launched explosive weapons resulted in 22,546 civilian deaths and injuries, or 29% of civilian casualties. While IEDs accounted for 14,582 civilian casualties, or 19% of civilian harm.

A few seconds later a missile hit the mosque. The explosion destroyed several buildings near the mosque. It was one of the deadliest attacks I have seen. It was prayer time and the mosque was full of people.

A civilian reports of the devastation when al-Heni mosque is bombed.
In total, Syria saw state actors account for the majority of harm caused by explosive weapons. At least 47,857 civilian casualties were caused by state use of explosive weapons, while non-state use accounted for at least 19,938 civilian casualties (70% and 30% respectively).

The states which caused the most civilian casualties included Syria (23,947), Russia (3,968), the US-led coalition (3,737), and Turkey (1,151). Many incidents were recorded with an unknown perpetrator. This frequently occurred in incidents where it could not be identified whether Syria or Russia carried out the attack.
Iraq has seen the second largest number of civilian casualties from explosive violence in the last decade – though this has decreased significantly in recent years. In total, AOAV recorded 73,471 deaths and injuries from explosive violence in Iraq, including 56,316 civilian casualties.

Iraq saw the highest levels of civilian casualties from such violence in 2013 and 2014 with 12,799 and 10,735 deaths and injuries recorded each year respectively. These years reflect the height of Islamic State’s violence. The lowest levels of violence have been seen in the last couple of years, with only low-level explosive violence.

Despite the sieges and battles across Iraq, it is Baghdad that has seen, by far, the highest levels of civilian casualties from explosive violence in the country. AOAV has recorded at least 26,545 civilian casualties in Baghdad between 2011 and 2020. These casualties account for 47% of the total civilian casualties seen in Iraq in this period.

In the last decade, IEDs have accounted for the vast majority of civilian harm with 46,093 civilian deaths and injuries from such weapons in Iraq: accounting for 82% of all civilian harm from explosive weapons.

Ground-launched explosive weapons resulted in 3,506 civilian deaths and injuries, or 6% of civilian casualties. While airstrikes accounted for 5,790 civilian casualties, or 10% of civilian harm.

Of the 3,392 IED attacks recorded, 500 were suicide attacks. These suicide bombings resulted in 18,067 deaths and injuries, of which 14,112 (78%) were civilians.

Non-state actors, then, accounted for the majority of harm caused by explosive weapons. Islamic State were behind attacks that caused at least 11,611 civilian casualties from explosive violence, though it should be borne in mind that they have not consistently claimed responsibility for their attacks and are likely responsible for far more.

The house collapsed – the ceiling fell down on us. I saw the shrapnel hit my grandmother in the head. She died immediately. I called for my wife and ran to her. She was bleeding. Shrapnel had hit her back. Then I realized my son was bleeding. Shrapnel hit his right temple and his nose. By the grace of God most of us survived.

Abu Ali describes an airstrike on his home in Mosul.28
Afghanistan has consistently been among the countries worst impacted by explosive violence each year; remaining among the worst five every year except one, in 2014, where the country dropped to sixth. In 2020, it was the worst impacted country in the world as the levels of violence dropped elsewhere and Afghanistan’s remained high.

In total, AOAV has recorded 49,107 casualties in Afghanistan in the last ten years. Of these, 28,424, or 58%, have been civilians. The levels of violence in this period have been relatively consistent, though rising gradually since 2013 and peaking in 2019, when AOAV recorded the highest levels of civilian casualties from explosive violence in Afghanistan, with 4,630 civilian deaths and injuries.

The worst impacted provinces of Afghanistan have been Kabul, Nangarhar, Kandahar and Helmand, though none of the 34 provinces have escaped the violence. Kabul has frequently been the stage of violent and large-scale attacks by non-state groups in Afghanistan. In the last decade AOAV has recorded 8,296 civilian casualties.

Similar to Iraq, it has been IEDs that have resulted in the most civilian harm with 22,350 civilian deaths and injuries from IEDs in Afghanistan: accounting for 79% of all civilian harm from explosive weapons. Ground-launched explosive weapons resulted in 2,902 civilian deaths and injuries, or 10% of civilian casualties. While airstrikes accounted for 2,406 civilian casualties, or 8% of civilian harm.

Of the 2,362 IED attacks recorded, 511 have been suicide attacks. These bombings have resulted in 17,124 deaths and injuries, of which 13,654 were civilians.

In Afghanistan, non-state groups have been responsible for the majority of civilian harm. The most prolific of the groups causing civilian harm in Afghanistan have been the Taliban and splinter groups, and, in recent years, Islamic State. When a perpetrator of an incident has been identified, the Taliban has accounted for at least 8,473 civilian casualties, while Islamic State has accounted for 3,219.

Among state users of explosive weapons, Afghanistan, NATO, USA and Pakistan have been responsible for the most civilian casualties, accounting for 700, 678, 668 and 302 civilian casualties respectively.

In Afghanistan, it has been continuously difficult to identify the perpetrators behind the attacks, so it is likely that all actors that have used explosive weapons in the country are responsible for more casualties than our data reflects.

**There was a huge boom and the hall went dark. People were running and falling in all corners. It was like doomsday.**

Sakhi Mohammed, a guest at a wedding in Kabul which was targeted by a suicide bomber in August 2019.29
in the country. Ground-launched explosive weapons resulted in 4,198 civilian deaths and injuries, or 20% of civilian casualties. While airstrikes accounted for 238 civilian casualties, or 1% of civilian harm. A further 1,072 civilian casualties were caused by attacks which used multiple launch method types; these almost always were a form of IED attack alongside the use of grenades or sometimes rockets or RPGs.

Of the 1,224 IED attacks recorded, 168 were suicide attacks. These resulted in 7,082 deaths and injuries, of which 5,836 were civilians.

Non-state groups have been responsible for the majority of civilian harm. While there are many non-state groups using explosive weapons in Pakistan, the most frequent causers of civilian harm have been the Tehrik-e-Taliban, and splinter groups Islamic State affiliates and Lashkar-e-Jhangvi. Given the frequent splits and reuniting of groups in Pakistan, it is hard to keep track of the casualties from each group.

Nevertheless, when a perpetrator of an incident has been identified, the Tehrik-e-Taliban have accounted for at least 3,619 civilian casualties, while a further 1,058 were recorded from explosive violence by splinter group, Jamaatul Ahrar. Islamic State groups accounted for 1,361 and Lashkar-e-Jhangvi for 1,310. Among state users of explosive weapons, India and Pakistan have been responsible for the most civilian casualties, accounting for 1,020 and 230 civilian casualties respectively. Those caused by India typically occur in Azad Kashmir, as the dispute over Kashmir continues.
Between 2011 and 2020, AOAV recorded 24,498 deaths and injuries from explosive violence in Yemen, including 16,645 civilian casualties.

The worst year for civilian casualties was 2015 as the onset of the war quickly resulted in many civilian deaths and injuries. AOAV recorded 7,705 casualties from the use of explosive weapons in Yemen in 2015, of which 6,298 - 82% - were civilians. While the casualty toll remained high in the following years it has been consistently decreasing; in 2020 AOAV record 683 civilian casualties.

The worst impacted regions have been Sanaa, Taiz, Al Hudaydah, and Saada with 5,406, 2,833, 1,930, and 1,454 civilian casualties recorded in each region respectively.

In Yemen, airstrikes have accounted for the most civilian casualties with 10,248 civilian deaths and injuries from airstrikes in Yemen, or 62% of all civilian harm from explosive weapons in the country. Ground-launched explosive weapons resulted in 3,842 civilian deaths and injuries, or 23% of civilian casualties. While IEDs accounted for 2,324 civilian casualties, or 14% of civilian harm.

In Yemen explosive violence by state actors has accounted for the majority of reported harm from explosive weapons. At least 10,998 civilian casualties were caused by state use of explosive weapons, while non-state use accounted for at least 4,159 civilian casualties.

The states which caused the most civilian casualties included the Saudi-led coalition (9,866) and Yemen (719). While there are many non-state groups engaged in Yemen, the Houthi rebels were identified as causing the most civilian casualties among these groups, with 2,286 civilian deaths and injuries recorded from their use of explosive violence.
Regional Overview

This section provides an overview of explosive violence by region (as defined by the World Bank groupings): East Asia and Pacific, Europe and Central Asia, Latin America and the Caribbean, Middle East and North Africa, North America, South Asia and Sub-Saharan Africa. Given the levels of explosive violence that have taken place in the Middle East and North Africa, this region has been split into two sections in the below analysis to provide greater insight.

EAST ASIA AND PACIFIC

The worst day for civilian casualties from explosive violence in Thailand in the past decade came on March 31st, 2012, when two car bombs exploded near a shopping and dining area in Yaia, killing 11 civilians and injuring 106. The same day, a car bomb in a hotel basement in Hat Yai caused a fire, killing three people and injuring a further 416.

Explosive violence has generally been in steady decline since 2012, as tentative and intermittent peace talks began between the Thai state and Patani Consultative Council.

Similarly, in the Philippines, violence has been characterized by concurrent hostilities between government forces and either Muslim separatist or Maoist rebel groups.

The Moro conflict in the Mindanao region between government forces and Moro Muslim separatist rebels began the 1960s. Since the turn of the century, the conflict has been complicated and exacerbated by the growing involvement of jihadist groups such as Abu Sayyaf, the Bangsamoro Islamic Freedom Fighters (BIFF), and Islamic State of Lanao.

The original non-jihadist separatist cause of the Moro conflict was brought to an end in February

SOCIO-POLITICAL CONTEXT

In many of these countries the violence occurs through the use of IEDs and grenades, with small scale attacks as part of protracted conflict.

Over the past 15 years, Thailand’s mostly Malay-Muslim South has been gripped by a bloody insurgency as ethnic Malay militants continued to seek autonomy for the culturally and religiously distinct region bordering Malaysia.

The worst day for civilian casualties: 8,805
Total civilian casualties: 6,107
Worst impacted countries: Philippines, Thailand, Myanmar and China
Key perpetrators in the region:
Abu Sayyaf [Philippines],
New People’s Army [Philippines],
Bangsamoro Islamic Freedom Fighters (BIFF) [Philippines], Myanmar
Casualties by weapon type:
Air-launched: 344 (124 civilians)
Ground-launched: 2,314 (1,764 civilians)
IEDs: 5,630 (3,942 civilians)
2019 with the establishment of the Bangsamoro Autonomous Region in Muslim Mindanao but jihadist groups remain in operation.

The country has also been gripped by a communist rebellion led by the New People’s Army (NPA), originally the armed wing of the Marxist-Leninist-Maoist Communist Party of the Philippines. After four failed attempts at peace, attacks have continued.

The Philippines’ worst explosives attack of the past decade came on January 27th, 2019, when twin bombings struck a church service at a cathedral in Jolo in the south. Abu Sayyaf was believed to be behind the attack, with Islamic State claiming responsibility. At least 23 people were killed, 16 of whom were civilians, and a further 125 injured.

In the latter part of the decade, and particularly in 2019, Myanmar emerged as one of the region’s hotspots for explosive violence. Many of the civilian casualties recorded have been attributed to state explosive weapon use in civilian areas. Most incidents however are recorded without the perpetrator identified, with both the state and many non-state groups engaged in fighting.

The Northern Alliance comprises a coalition of the Arakan Army, the Kachin Independence Army, the Myanmar National Democratic Alliance Army and the Ta’ang National Liberation Army. The Arakan Army is the largest insurgent group in Rakhine State, where minority groups have fought for self-determination since the 1950s. The Rohingya Muslim population have suffered attempted genocide and mass displacement by government forces in recent years, triggering international outcry.

In Kayin state, the Karen people, the third largest ethnic group in Myanmar, have historically been the subject of alleged “scorched earth” tactics by the government. The Karen National Union (KNU) is the area’s main armed group waging a battle for independence.

The Kachin Independence Army (KIA) is the main secessionist group in Kachin state. The conflict in the state, which has displaced tens of thousands in recent years, is drawn primarily along religious lines.
In Ukraine, most of the violence has occurred in the Donbas region near the border with Russia, between Ukrainian forces and Russian-backed separatist fighters. While the worst of the fighting was seen in 2014 at the onset of the violence, there have been far fewer casualties in recent years. In 2014 and 2015, AOAV recorded 1,428 and 862 civilian casualties respectively. While the violence in the areas has decreased, the reduction in civilian casualties is also likely to be linked to the huge levels of internal displacement caused. The violence continues to disrupt the lives of those in the Donbas region.

In Russia, the Dagestani region has been a key area of conflict, partly due to an insurgency in the North Caucasus. A third of all casualties from explosive violence in Russia happened in this region. The struggle was between the Russian state and Islamist militants wanting to establish an independent Islamic emirate in Russia. Foreign civilians as well as Russians were killed in the conflict. The deadliest incident of explosive violence in Russia during this decade was the Domodedovo International Airport bombing. The attack resulted in 204 civilian casualties and was also a part of the insurgency in the North Caucasus, as were the 2013 Volgograd bombings, and the 2014 Grozny bombing.

Islamic State has also been responsible for multiple incidents of explosive violence across Europe, particularly in Belgium, the United Kingdom and France, and are largely responsible for the explosive violence casualties in these countries.

**EUROPE AND CENTRAL ASIA**

**Total casualties:** 13,533
**Total civilian casualties:** 8,865

**Worst impacted countries:**
Turkey, Ukraine, Russia, Belgium, Azerbaijan, United Kingdom

**Key perpetrators in the region:**
Islamic State affiliated groups or individuals, PKK [Turkey], Ukraine, Ukrainian separatists

**Casualties by weapon type:**
- Air-launched: 407 (146 civilians)
- Ground-launched: 5,805 (3,429 civilians)
- IEDs: 6,795 (5,132 civilians)

**SOCIO-POLITICAL CONTEXT**
Turkey has seen by far the highest levels of violence in the region, with 3,570 civilian deaths and injuries recorded in the last ten years; most due to IED attacks by Islamic State actors and the PKK. The worst year for violence in Turkey was seen in 2016; the year of the suicide bombings in one of Istanbul’s airports. Many large scale complex IED attacks occurred throughout the year in key cities.

While the levels of explosive violence have decreased since 2016, a rise in attacks by Kurdish-affiliated groups led to a slight rise in 2019, when 200 civilians were killed and injured. Turkey has been in conflict with the PKK throughout the duration of AOAV’s monitor as Kurds seek autonomy for the populations within Turkey.
While Azerbaijan and Armenia have seen mostly small-scale attacks over the Nagorno-Karabakh region, this significantly escalated in 2020. The COVID-19 pandemic and lack of journalists on the ground meant casualty figures coming out of the region were sporadic and unclear. In total AOAV recorded 318 civilian casualties in Azerbaijan in 2020, including the Nagorno-Karabakh region. The real toll is likely to be higher.
Liberation Army (ELN). Both FARC and the ELN have cited poverty levels, income disparity and the gap between Columbia’s rural and urban population as justification for their violence.

With the formal ratification of the peace agreement in 2016 there has been a notable decrease in explosive violence across the country. However, the ELN and FARC dissidents have continued intermittent violence, with at least 523 casualties from explosive violence since the agreement was signed.

Whilst Mexico has only experienced a fraction of the explosive violence that Colombia has witnessed in the last decade, the country still accounts for 15% of civilian casualties in the region since 2011. AOAV data suggests that these incidents are largely driven by attacks conducted by narcotics cartels in Mexico.

Whilst varied and divided in their power and structure, the majority of cartels use indiscriminate grenade attacks in attempts to kill rival cartel members or security service operators. The consequence of this, however, is often the death or injury of civilians too.

Patterns of explosive violence in Mexico also reflect patterns of cartel escalation, which can be witnessed in the surge in violence in 2011, a year of intense drug-turf conflict. The number of incidents in 2011 accounts for half of the recorded amount in the decade.

It should be borne in mind that as AOAV has only utilised English-language sources: in a majority Spanish-speaking area, it is likely that some casualties have gone unrecorded in this monitoring.
Whereas in previous operations Israel’s Rules of Engagement (ROE) safety distances did not permit shells to land within 300 metres of residential homes, by 2014 this had been reduced to 100 metres. Such a shortening invariably placed civilians at far greater risk. The civilian casualty tolls of this period reflect this, with 3,757 civilian casualties recorded from explosive violence in Gaza in the months of July and August 2014. While casualties have fallen since 2014, Gaza is still a place marked by intermittent flare-ups of explosive violence and consistent blockade and unrest.

In Lebanon, AOAV has recorded 2,377 civilian casualties as the result of explosive violence; with 2,032 of these civilian deaths and injuries caused by IEDs. Most these casualties occurred in 2013 when Beirut and Tripoli saw large explosive attacks. In August 2013, a twin car bombing outside Al-Salam Mosque and Al-Taqwa Mosque killed 47 people and injured 500. Just a week earlier 22 were killed and 290 were injured in a car bomb explosion in Lebanon’s capital, Beirut. This attack was said to target a Hezbollah stronghold. Similar attacks were seen throughout the year.

In Gaza, AOAV has recorded 5,107 civilian casualties from explosive violence in the last decade. Most of these casualties are the results of airstrikes and cross-border shelling by Israeli forces. While Gaza has seen constant violence in this period, the worst episode came in 2014, during an intense period of violence in July and August. The period was characterised by heavy Israeli shelling on populated areas. At least 34,000 unguided shells were launched by Israel into Gaza in 2014, an average of 680 shells a day during the operation.

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this more apparent than the conflict in Libya. After heavy fighting between anti-Qaddafi rebels and pro-government forces resulted in defeat and death of President Qaddafi in 2011, conflict has continued as various forces – governments, jihadist fighters, militias and foreign soldiers – have fought for control of key cities such as Sirte, Benghazi and Tripoli and control of oil.

The instability produced in the region allowed the spread of radicalism in Libya and the rise of a military government under President Sisi in Egypt. There has also been a significant increase in the use of IEDs in both countries. This form of explosive violence, including the rise in the use of suicide bombers, is a weapon that has been exported by foreign fighters to neighbouring countries and Europe. In the United Kingdom, Salam Abedi, a British man who fought in Libya, blew himself up in the Manchester Arena, murdering 22 others in May 2017.

In Egypt, three major IED attacks in Cairo, Tanta and Alexandria resulted in the deaths of at least 70 people and wounded hundreds more.

The outside intervention of regional powers such as Turkey and the United Arab Emirates and the continued utilisation of drone power and airpower by NATO has led to a surge in airstrikes. In 2019, an airstrike which hit a detention centre in Libya’s Tajoura killed over 53 refugees.

In recent years Libya’s violence has worsened, however, and a ceasefire agreed in October 2020 was struck hoping to see violence decrease despite the violations.
package bomb explosions resulted in the deaths of two civilians and the injury of five. The culprit was eventually tracked down – he detonated a bomb as police approached, killing himself and injuring a police officer. Though the exact motives of the bomber remain unclear, he was labelled a domestic terrorist due to the harm caused.

The largest of bombings in the United States in the last ten years took place during the Boston Marathon in April 2013. Two women and a boy were killed, while 264 others were injured. Two individuals lost both legs in the attack and a further 15 lost one leg. The bombings were caused by two pressure cookers made by two self-radicalised Chechen Kyrgyzstani-American brothers, said to be motivated by the wars in Iraq and Afghanistan.

The last bomb explosion of the decade in the United States occurred on Christmas Day, December 25th 2020, in Nashville, Tennessee. There a van played a message warning of its detonation and asking residents to clear the area, before it then detonated, killing the bomber inside and injuring three civilians. The explosion was large enough to damage 40 buildings, with ten being later classified as unsafe and two buildings, it was reported, having to be demolished. While no motive has, as of writing, been established, the bomber sent packages detailing conspiracy theories to acquaintances.

The United States has seen at least two IED attacks each year which have caused at least one death or injury since 2011, with some years seeing as many as 13.
further intensified after February 2019 when India carried out airstrikes in the Khyber Pakhtunkhwa province of Pakistan and an aerial engagement occurred between the Pakistani and Indian Air Forces. These air strikes were in response to a suicide bombing on an Indian convoy by Pakistan-based Kashmiri separatist group Jaish-e-Mohammed that killed 40 troops.

Kashmiri separatist groups have carried out many attacks in Kashmir. Beginning in 1989, the insurgency in Kashmir reached peak intensity from 1999-2003. In the past decade, explosive violence casualties caused by Kashmiri separatists were low, but the 2019 attack that killed 40 Indian troops shows there are still active elements.

The cross-border shelling, however, has had considerable impact on the civilian populations on both sides of the Line of Control, causing physical and psychological harm, as well as hampering education for many children.

Ambulances were scurrying and we only heard the wailing of the wounded - and families of those victims. What a terrible day! God will never forgive this carnage.

a shopkeeper in Colombo’s Muslim neighbourhood told reporters after the Sri Lanka’s Easter Sunday suicide bombings in 2019.
Internally, India has several groups that have deployed violent means to pursue political goals. Since 2004, the Naxalite-Maoist insurgency has claimed to carry out attacks in support of land rights and jobs for the rural poor. Mainly affecting the ‘Red Corridor’ in eastern, central and southern India, the Naxalite insurgency traces its roots back to the 1967 split in the Indian Communist Party between Maoist and Marxist-Leninist ideologies. The Naxalites have caused hundreds of casualties in the past decade, mostly security personnel.

India’s North-East region has also experienced explosive violence from separatist movements seeking autonomy and independence. This low-level insurgency has been going on for decades, and the goals of groups such as the ULFA in Assam, the UNLF in Manipur and NSCN-K in Nagaland is regional autonomy and independence for their respective states. In the past decade, the number of casualties caused by these insurgent groups has been low.

Islamic State’s ideology has spread through many areas of South Asia and in Sri Lanka. This was felt most noticeably during the Easter Sunday bombings in 2019. The bombing of three churches and three luxury hotels on Easter Sunday across Sri Lanka is one of Islamic State’s deadliest attacks and highlights the threat Islamic State continue to pose in South Asia even as it is defeated in what were the main strongholds in Iraq and Syria.
Burkina Faso, Cameroon, Chad, Kenya, Mali, Niger and Somalia.

Since the overthrow of Siad Barre’s 21-year government in 1991, Somalia has been torn apart by civil conflict between armed Islamist groups and government forces. Al Shabaab is the main security threat in Somalia and the worst single perpetrator of civilian harm from explosive violence in the country.

The first attack outside of the country took place in 2010 when several suicide bombings killed 74 people in Kampala, the capital of Uganda. Al-Shabaab have since claimed many attacks in Kenya; further gun attacks by the group in Kenya have also caused many casualties including the Westgate mall attack in 2013 which killed 67, and another in 2015 on the University campus of the city of Garissa which killed 148.

US airstrikes saw an increase during the Trump administration. Since 2010, the US has been responsible for at least 1,306 casualties including 1,216 armed actors and 90 civilians.

In Nigeria, violence by insurgent groups and government corruption has resulted in economic and political instability. One of the largest Islamist militant groups in the continent, Islamic State-aligned Boko Haram has caused significant harm from explosive weapons in Nigeria as well as in Cameroon, Chad and Niger.

In fact, the emergence of the insurgency is widely attributed to the poverty level, the dearth of infrastructure, and the high illiteracy level, as well as the
Boko Haram have caused the displacement of nearly 2.4 million people across the Lake Chad Basin. Since 2011, AOAV has recorded more than 9,039 civilian casualties from IEDs in Nigeria, as well as 1,080 in Cameroon, 475 in Chad and 109 in Niger.

High level of inequality in the area. The country saw a peak in Boko Haram related violence in 2014 and 2015, after which casualties attributed to the group substantially declined due to multilateral efforts by countries in the region to combat the group.
WHO IS BEHIND THE EXPLOSIVE VIOLENCE?
A significant proportion of explosive violence incidents recorded by AOAV go unclaimed and cannot be attributed to a specific actor. In total, in 29% of incidents over the last decade it was unclear from reporting whether a state or non-state actor was responsible.

State actors
The 10,244 incidents that were attributed to a state, rather than a non-state group, caused 128,460 deaths and injuries over the last ten years. Of these 67%, 81,730, were civilians. The most prolific state users of explosive weapons are listed in Figure 2.

Non-State Actors
Collectively, non-state actors caused 132,909 casualties between 2011 and 2020, of whom 76% were civilians (101,652). AOAV recorded 179 different non-state actors using explosive weapons over the last decade. The most prolific non-state actors in this period are listed in Figure 3.

Figure 2  Biggest state users of explosive weapons

<table>
<thead>
<tr>
<th>States</th>
<th>19% of incidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syria</td>
<td>19%</td>
</tr>
<tr>
<td>Israel</td>
<td>8%</td>
</tr>
<tr>
<td>US-led coalition</td>
<td>7%</td>
</tr>
<tr>
<td>Saudi-led coalition</td>
<td>5%</td>
</tr>
<tr>
<td>Pakistan</td>
<td>5%</td>
</tr>
</tbody>
</table>

Figure 3  Biggest non-state users of explosive weapons

<table>
<thead>
<tr>
<th>Non-State Actors</th>
<th>9963</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISIS</td>
<td>11%</td>
</tr>
<tr>
<td>Taliban</td>
<td>7%</td>
</tr>
<tr>
<td>Syrian rebels</td>
<td>5%</td>
</tr>
<tr>
<td>Ukrainian separatists</td>
<td>5%</td>
</tr>
<tr>
<td>Al Shabaab</td>
<td>3%</td>
</tr>
</tbody>
</table>

AOAV recorded 1,916 incidents of explosive violence by Syrian regime forces, resulting in 24,345 civilian deaths and injuries. This is the case despite many attacks occurring with an unknown perpetrator in Syria, likely due to the sheer number of actors engaged in the country.

The Saudi-led coalition caused at least 9,866 civilian casualties recorded from 562 incidents. All of these occurred in Yemen.

The US-led coalition saw the third-highest levels of civilian casualties caused by their explosive weapon use in the last decade, with 5,316 civilian deaths and injuries recorded.

Israel and Russia were fourth and fifth. However, given how few state actors claim their attacks when civilian casualties are caused it is likely that some actors should be higher up this list than they are.

Over the last decade Islamic State has caused the most civilian harm among the non-state groups, having caused at least 20,698 casualties, including 17,376 civilian deaths and injuries. Across the globe groups affiliated with and individuals loyal to Islamic State caused further civilian harm. Islamic State affiliates in Afghanistan, for example, caused at least an additional 3,219 civilian casualties in this period.

Following Islamic State, the largest numbers of civilian deaths and injuries were caused by Syrian rebel groups with 9,431, the Taliban which caused at least 8,375 civilian casualties, and Al Shabaab with 3,991.

Due to AOAV’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.
In the last ten years, 91% of casualties in populated areas were reported as civilians.

This is compared to 25% in other areas.

Civilian deaths and injuries in populated areas represented 91% of all reported civilian deaths and injuries from explosive weapons.

**POPULATED AREAS**

As Figure 4 shows, when explosive weapons were used in populated areas in the last decade, 91% of the deaths and injuries were reported to be civilians. This compares to 25% in other areas. In total, 238,892 civilians were killed and injured in populated areas.

This is consistent with the pattern of harm AOAV has persistently recorded since 2011. In every year of AOAV’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, 2017, 2018, 2019 and 2020 this was 91%, 92%, 91%, 92%, 92%, 92%, 90%, 90%, 90% and 88% respectively.

As this data set has consistently shown, when explosive weapons are used in populated areas, more civilians are likely to be killed and injured as a result. Both state and non-state actors alike continue to utilise explosive weapons in populated areas, despite the likelihood of civilian casualties from such use.

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.

Due to this high likelihood of civilian casualties from the use of explosive weapons in populated areas and the continuation of such violence each year, AOAV has supported efforts by states and organisations to prevent the use of explosive weapons in populated areas. It is hoped that there will soon exist a political declaration to this effect, with states committing to avoiding the use of these weapons in areas where civilians are likely to be present.

**Figure 4 Total casualties by populated area / non-populated area**

**LOCATIONS**

**RESIDENTIAL**

The highest number of civilians killed and injured from explosive violence was from incidents in residential areas or civilian houses. AOAV recorded 4,166 incidents in the last decade in such locations. These resulted in 36,726 civilian deaths and injuries.
Due to the frequency of bombardment in some areas, with some incidents seeing multiple explosives used across larger areas, many incidents in urban areas became categorised under “multiple (urban)”. An additional 2,125 incidents of explosive violence were recorded in this location, resulting in 41,465 civilian casualties. Such incidents were regularly recorded from Syrian shelling or airstrikes when bombardment would fall upon multiple neighbourhoods.

Airstrikes and shelling account for most of the civilian casualties from incidents recorded in urban residential areas; air-launched explosives accounted for 40% of the civilian casualties caused there; ground-launched explosive attacks accounted for 38%, while IEDs accounted for 20%.

MARKETS
1,008 incidents were recorded from the use of explosive violence at markets. These incidents resulted in 27,195 casualties, including 26,305 civilians.

This makes such incidents devastating for civilians, who account for 97% of casualties when explosive violence is used at markets. An average of 26 civilian casualties were recorded per incident in these locations.

Markets are frequently the targets of non-state actors, with IEDs accounting for 18,701, or 71%, of the civilian casualties recorded in market bombings.

PLACES OF WORSHIP
When explosive violence targets places of worship there are usually many casualties and the casualties are almost always civilian. AOAV has recorded 572 incidents in the last decade, resulting in 18,416 casualties, of which 17,574, or 95%, were civilians.

The average explosive violence incident in a place of worship resulted in more than 30 civilian casualties.

IEDs make up the majority of civilian casualties recorded in places of worship, accounting for 69% of attacks and 81% of civilian deaths and injuries.

Explosive weapons in populated areas

<table>
<thead>
<tr>
<th>Place</th>
<th>Total Deaths &amp; Injuries</th>
<th>Civilian Deaths &amp; Injuries</th>
<th>Average Civilian Deaths &amp; Injuries Per Attack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban Residential</td>
<td>39,890</td>
<td>92%</td>
<td>9</td>
</tr>
<tr>
<td>Markets</td>
<td>27,195</td>
<td>97%</td>
<td>26</td>
</tr>
<tr>
<td>Places of Worship</td>
<td>18,416</td>
<td>95%</td>
<td>31</td>
</tr>
</tbody>
</table>

91% of civilian deaths and injuries occurred in populated areas.
In incidents where women were recorded among the casualties, women accounted for 17% of the civilian casualties. This figure does not include armed actors. Likewise, it does not include female suicide bombers. The majority of women who were killed or injured were from attacks in populated areas. It was found that of female casualties recorded, 88% occurred in populated areas.

CHILDREN
Similarly, the majority of media sources did not include reporting of the age of victims. Between 2011 and 2020, AOAV recorded 16,512 child deaths and injuries in 5,096 incidents. Of these, a gender was given for 2,975 individuals, of whom 1,431 were girls and 1,544 were boys. The rest were reported without specifying gender. In a further 522 incidents, no figures were given for numbers of children killed or injured but children were reported to be amongst the victims.

WOMEN
The majority of media sources do not report on the gender of victims. Where such data is recorded, often women may be recorded among the dead, but no figure is given for those among the injured. The reporting of gender among incident casualties has been consistently poor and AOAV encourages journalists to report such data when it is available.

Nevertheless, women were reported among those killed and injured in 3,807 incidents, 13% of all incidents. A further 476 incidents reported that women were among the casualties, but no figure was given. Overall, 8,383 women were reported killed or injured in the 3,807 incidents.

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TARGETING
As has consistently been the case throughout AOAV’s records, simply targeting armed actors with explosive weapons did not prevent civilians from being killed or injured. Across the last decade, a third (33%) of those killed or injured by attacks which were explicitly coded as targeting armed actors were civilians. In populated areas this rose to 69%, whilst in non-populated areas it fell to 8%.

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.

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In incidents of explosive violence where a figure was given for the number of children among the casualties, children accounted for at least 23% of total civilian casualties. Of the children killed or injured, at least 89% were due to incidents that took place in populated areas.
AOAV records information on the explosive weapon used in any incident. The full list of the recording types used can be found on pages 7-8. These are kept deliberately broad in order to reflect the language commonly used in source reporting (i.e. ‘shelling’, which can cover several types of ground-launched weapons). More specific weapon types are used where such information is available in the source material.

The total number of civilian casualties recorded by AOAV from each explosive weapon type is shown in Figure 6. There are different ways of evaluating the threat that various explosive weapons have had for civilians in the last ten years. These are explored over the following sections.

In order to better understand how these different explosive weapon types have endangered civilians in the last decade, AOAV has split them into three different groups based on their launch method.

**Air-launched weapons** include any explosive munition dropped from an aircraft. If a bomb, missile or rocket is specified in the reporting of an incident (e.g. ‘Hellfire’ missile, FAB aircraft bomb) it is recorded under these narrower categories.\(^4\) Other explosive attacks from the air are coded more generally as ‘Air strike’.

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

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

In addition to these three categories, AOAV records casualties from attacks where multiple launch methods are used to deploy explosive weapons. AOAV also records reported casualties of landmines. These are excluded from analysis in the following sections.\(^6\)

### Figure 6 Civilian casualties by weapon type 2011-2020

<table>
<thead>
<tr>
<th>Weapon type</th>
<th>Civilian casualties</th>
<th>Average civilian casualties per incident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air-launched</td>
<td>60202</td>
<td>8</td>
</tr>
<tr>
<td>Air Strike</td>
<td>46888</td>
<td>8</td>
</tr>
<tr>
<td>Air-dropped bomb</td>
<td>8905</td>
<td>15</td>
</tr>
<tr>
<td>Missile</td>
<td>3184</td>
<td>5</td>
</tr>
<tr>
<td>Multiple explosive weapons</td>
<td>740</td>
<td>44</td>
</tr>
<tr>
<td>Rocket</td>
<td>485</td>
<td>10</td>
</tr>
<tr>
<td><strong>Ground-launched</strong></td>
<td>54910</td>
<td>7</td>
</tr>
<tr>
<td>Artillery shell</td>
<td>3544</td>
<td>6</td>
</tr>
<tr>
<td>grenade</td>
<td>8951</td>
<td>5</td>
</tr>
<tr>
<td>Missile</td>
<td>2036</td>
<td>9</td>
</tr>
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Civilian casualties from airstrikes account for 23% of all civilian casualties from explosive weapons in the last ten years.

Since 2011, AOAV recorded the numbers of civilian deaths and injuries from airstrikes steadily increasing until 2017, when 14,346 civilian casualties were recorded from air-launched explosives. 2017 saw intense aerial bombardment in Syria, particularly across Deir Ezzor by Russian forces and Raqqa by US-led coalition forces, and Iraq, particularly the US-led coalition’s bombardment of Mosul.

In the years following 2017 the number of civilian casualties from airstrikes steadily declined.

When aerial explosive weapons were used in areas reported as being ‘populated’, 90% of those killed and injured were civilians. In areas that were not recorded as populated, that figure dropped to 14%.

COUNTRIES AND USERS
Casualties from airstrikes have been recorded in 31 countries in the last decade. The majority of civilian casualties from air-launched explosive weapons in the last decade occurred in Syria (see Figure 8). The civilians killed and injured by air-launched weapons in Syria accounted for 58% (34,851) of all civilians killed or injured worldwide by such weapons.

**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.

In total, AOAV recorded 101,266 casualties from airstrikes in the last decade, of which 60,202 were civilian.

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**Figure 7** Civilian casualties from air-launched weapons by year
Yemen, Iraq, Gaza and Afghanistan also saw high numbers of casualties from airstrikes, with 10,248, 5,790, 3,074, and 2,406 civilian casualties from air-launched explosive violence respectively.

The perpetrators of airstrikes are often recorded as unknown as they are not identified in the news reports. This is particularly the case in places like Syria and Libya where there have been many states conducting airstrikes, making attribution difficult. Nevertheless, Syria, the Saudi-led coalition, Russia, the US-led coalition and Israel are clearly identified from the data as the key perpetrators of civilian harm from airstrikes over the last ten years.
In total, these weapons reportedly killed and injured 68,024 people between 2011 and 2020; 54,910 of whom were civilians (81% of total deaths and injuries from this weaponry).

Civilian casualties from ground-launched weapons accounted for 21% of total civilian casualties from explosive weapons over the last decade.

Ground-launched explosive attacks have been more likely to be reported in populated areas than other kinds of incidents. 72% of all ground-launched incidents recorded were reported as taking place in populated areas, compared to 54% of air-launched incidents and 59% of IED incidents.

**COUNTRIES**

AOAV recorded casualties from ground-launched explosive weapons across 90 countries and territories over the last decade.

The worst impacted country was Syria, with 22,546 civilian casualties, accounting for 41% of the total civilian casualties from ground-launched explosive weapons.

Pakistan, Yemen, Iraq, Libya, Afghanistan, Ukraine, India and Somalia all saw over 1,000 civilian casualties from ground-launched explosives.

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**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 they are all launched from surface level.
**PERPETRATORS**

Ground-launched explosive weapons have been used by state and non-state actors for a similar number of incidents. Non-state actors were recorded as responsible for 34% of incidents and state actors for 31% of all ground-launched attacks. 2,660 incidents (33%) were recorded without it being known whether it was caused by a state or non-state actor.

**SPECIFIC TYPES**

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

Non-specific shelling accounted for the largest amount (27%) of civilian deaths and injuries from ground-launched weaponry. Grenades, mortars and rockets also caused a significant amount of civilian harm, responsible for 8,951 (16%), 13,327 (24%) and 5,841 (11%) civilian casualties respectively.

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**Figure 10  Casualties by ground-launched weapon type**
Improvised explosive devices (IEDs)

In the last decade, AOAV recorded **171,223** deaths and injuries from IEDs.

IEDs accounted for **52%** of all civilian casualties recorded in the last ten years.

IEDs resulted in at least one casualty in **100** different countries and territories.

**DEATHS AND INJURIES**

IEDs accounted for 52% of all civilian casualties recorded from explosive violence between 2011 and 2020.

As with other launch-method types, IEDs caused particularly high levels of civilian harm when used in populated areas, which was the case in 59% of all recorded attacks – totalling some 7,046 incidents. In these incidents, 90% of reported deaths and injuries were civilians, contrasting with 36% in other areas.

On average, IED incidents in populated areas killed or injured 18 civilians per attack.

**COUNTRIES**

Between 2011 and 2020, IEDs resulted in at least one casualty in 100 different countries and territories. Figure 12 shows the seven countries that saw the most civilian casualties from IEDs in this period.

At least 14 countries saw more than 1,000 civilian deaths and injuries from IED attacks: Iraq, Afghanistan, Pakistan, Syria, Nigeria, Somalia, Turkey, Yemen, Lebanon, Thailand, India, Egypt, Philippines and Cameroon.

Iraq has been the country worst impacted by IEDs, with the most civilian casualties from this weapon type. Iraq, in total, saw 3,392 IED incidents, resulting in 53,706 casualties, including 46,093 civilians.

Since 2013, the impact of IEDs in Iraq has been steadily decreasing. Whereas in Afghanistan, in the period examined, the peak was seen in 2019, with a decrease last year, in 2020.

**USERS**

IEDs were almost exclusively used by non-state actors in the last decade. AOAV recorded IED usage by 114 non-state entities.

![Figure 11: Civilian casualties from IEDs by year](image-url)
DELIVERY METHOD AND DETONATION SYSTEM
AOAV’s recording distinguishes between car bombs, roadside bombs and more general non-specific IEDs. The majority of incidents (52%) reported were recorded as non-specific IEDs. Roadside bombs accounted for a further 28% and car bombs for 19%. 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 24 civilians per incident. Whilst non-specific IEDs saw an average of 10 civilian casualties per incident and roadside bombs saw three.

The group that caused the most civilian harm from IEDs was Islamic State, having caused at least 18,789 casualties, including 15,910 civilian deaths and injuries. Their affiliated groups caused significant levels of further harm across the globe. Following Islamic State, the largest numbers of civilian deaths and injuries from IEDs were caused by the Taliban which caused at least 6,998 civilian casualties using IEDs, Boko Haram (affiliated with Islamic State) which caused 3,750 and Al Shabaab with 3,681. As attacks go unclaimed, these figures are certain to be lower than the true levels of harm from these groups’ IEDs.

Figure 13 shows the locations where the most civilian harm resulted from IED attacks. IED attacks at markets caused the highest number of civilian deaths and injuries in the last decade. AOAV recorded 732 incidents of this kind resulting in 19,450 deaths and injuries, of which 96% (18,701) were civilians.

Other particularly badly affected areas included places of worship, roads, commercial premises and public gatherings. Locations with particularly dense concentrations of civilians were frequently targeted.

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For the majority of IED incidents no detonation mechanism was reported. Often the detonation mechanism is not reported. Nonetheless, AOAV recorded detonation mechanisms for 35% of reported incidents.

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

AOAV recorded 1,264 incidents involving victim-activated IEDs in the last decade, 11% of IED incidents. These resulted in 5,951 casualties, including 3,960 civilians. The last decade saw an average of three civilian casualties in these attacks.

**COMMAND-OPERATED IEDS**

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

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

AOAV recorded an average of eight civilian deaths and injuries per remote-detonated IED attack between 2011 and 2020. Even where they are used to target armed actors, civilians were often killed or injured by these IEDs, either because of their large blast effects or the deployment of these weapons in populated areas.

**SUICIDE BOMBINGS**

Suicide bombings, including car bombs operated by suicide bombers, are a form of command-operated IEDs. In total AOAV recorded 2,097 suicide bombings the last decade, killing a reported 74,816 people. 59,119 of those killed and injured were civilians (79%).

On average, 28 civilians were killed and injured by each suicide bombing.

Although suicide bombings represented only 17% of all IED incidents recorded, they accounted for 44% of all civilian deaths and injuries from IED attacks.

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**Figure 13** Locations where the most civilian harm resulted from IED attacks

- **Civilian deaths and injuries**
- **Armed actors deaths and injuries**

![Locations where the most civilian harm resulted from IED attacks](image-url)
59% (1,233 incidents) of the suicide bombings reported were recorded as non-specific IEDs, which, in the case of suicide bombings, largely refers to suicide vests. 39% (827 incidents) were recorded as car bombs. Non-specific suicide IED attacks caused an average of 33 deaths and injuries per incident, including 27 civilians. Suicide car bombs caused an average of 37, including 28 civilians.

AOAV recorded suicide attacks in 46 countries. The countries worst affected by suicide bombings in the last decade were Iraq (14,112 civilian deaths and injuries), Afghanistan (13,654), Nigeria (6,196), Syria (6,032) and Pakistan (5,836).

Suicide attacks and their casualties were generally on the rise when AOAV started recorded explosive violence data but in the last few years this trend has started to shift with decreasing attacks since 2017.

Afghanistan appears to be the current hotspot for this kind of violence, overtaking Iraq in 2017.

As with other explosive weapon types, when suicide bombings were used in populated areas, they inflicted much higher levels of civilian harm. 68% of recorded incidents took place in populated areas. In these attacks, around 90% of those killed and injured were civilians. This compares to 27% in other areas.

In total, 94% of the civilian casualties from suicide attacks occurred in populated areas. Suicide attacks in populated areas caused an average of 39 civilian deaths and injuries per incident.

![Destroyed cars near the Village Restaurant after a double suicide attack by Al Shabaab at the popular Mogadishu eatery in the Somali capital. AU-UN IST PHOTO / STUART PRICE. 7 September 2013, Flickr, AMISOM Public Information.](image-url)
In October 2019, Austria hosted an international conference on Protecting Civilians in Urban Warfare, attended by more than 100 states. At this conference Ireland announced it would hold a series of consultations with a view towards developing a political declaration to address the humanitarian harm arising from the use of explosive weapons in populated areas. While the first two rounds of consultations have taken place, further consultations were delayed due to the COVID-19 pandemic. Ireland, however, has released a draft political declaration and have welcomed comments on the text. It is hoped that the political declaration will be adopted this year after a final round of negotiations.

For civilians living in conflict zones this declaration cannot come soon enough – states and civil society must ensure that stronger standards are not watered-down by states that reject the need for constraint. States should also seek to improve their policies and practices in light of the harm that is predicted when explosive weapons are used in populated areas.

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.

As a member of the International Network on Explosive Weapons (INEW), AOAV and its colleagues urges states and all users of explosive weapons to:

- Acknowledge that use of explosive weapons in populated areas causes 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.
Recommendations

• States and other actors should stop using explosive weapons with wide area effects in populated areas.

• Previous AOAV 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 continue to work together to develop and adopt the international political declaration to address the harm caused to civilians by the use of explosive weapons in populated areas.

• 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 in populated areas, as well as tracking civilian harm including data segregated by age, sex and disability where possible.

• 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.

• AOAV has demonstrated over a decade 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.
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 the Syrian Observatory for Human Rights, AP, Reuters, AFP and Xinhua. We also use the most credible data cited from organisations such as Airwars and the Syrian Observatory which are frequently cited in the news sources.

RECORDING GUIDELINES
Civilian/ armed actor or security personnel:
All casualties are assumed to be civilians unless otherwise stated. Casualties are recorded as ‘armed actors’
If 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 news sources are not always able to clarify which casualties were caused by which weapon type, particularly in incidents that involved large numbers of casualties. It is therefore possible that some casualties in these incidents may not have been caused by explosive weapons.
AOAV is focused on capturing the harm caused by explosive weapons at the time of use. Accidental detonations are recorded but not included in the overall figures. In total over the last decade, AOAV recorded 783 incidents of accidental detonation resulting in 7,025 deaths and injuries, 4,781 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 the last ten years, AOAV recorded 714 incidents involving unexploded ordnance causing 2,279 civilian deaths and injuries. The actual number of casualties from ERW is far higher.75

Poorly secured or stockpiled explosive weapons can also cause unintended harm to civilians. AOAV recorded 80 stockpile explosions between 2011 and 2020.

Media reports used by AOAV 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 2,681 incidents out of 28,879 reported damage to a location. Effects which are the result of cumulative levels of explosive violence, for instance communities displaced by heavy shelling or continued insecurity, cannot be fully represented by this research.
Notes


4 The reverberating impacts of explosive weapon use has been documented by many in the humanitarian sector and includes devastating consequences to civilian healthcare and other vital infrastructure.

5 The definition of a populated area used by AOAV is based on Protocol III of the 1980 Convention on Certain Conventional Weapons (CCW) which defines concentrations of civilians as: “any concentrations of civilians, be it permanent or temporary, such as in inhabited parts of cities, or inhabited towns or villages, or as in camps or columns of refugees or evacuees, or group of nomads.” The full definition is available at: “Protocol on Prohibitions or Restrictions on the Use of Incendiary Weapons (Protocol III),” ICRC, Geneva, 10 October 1980, https://ihl-databases.icrc.org/ihl/full/CCW-Protocol-III (accessed 06 Jan 2021). AOAV’s guidelines for recording an area as populated are included in the Methodology.


7 The category of ‘mines’ includes both antipersonnel landmines and antivehicle mines. In many incidents, news sources often report what were likely actually victim-activated IEDs as ‘mines’ or in ambiguous language and it is not clear in many incidents whether these incidents involve manufactured or improvised explosive weapons.

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


10 Rockets, both air and ground-launched, are defined as “munitions consisting of a rocket motor 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 05 Jan 2021).


12 A populated area is one that is likely to contain concentrations of civilians. It is based on Protocol III of the 1980 Convention on Certain Conventional Weapons (CCW). The full definition and guidelines for recording an area as being populated is detailed on pages 32-33.


18 SOHR, ‘155 were killed yesterday including 4 members of the regime forces and militiamen loyal to them and 146 civilians’, 21 Feb 18, https://www.syriahrm.com/en/85344/ (accessed 02 Jan 2021).

19 It is unclear how many casualties occurred as a result of the suspected chemical-filled bombs or explosive weapons. Arab News, ‘Syrians hit by new “toxic gas attack” as regime resume airstrikes on Douma’, 08 Apr 18, https://www.arabnews.com/node/1280711/middle-east (accessed 02 Jan 2021).


23 In alphabetical order the 123 countries are: Afghanistan, Albania, Algeria, Argentina, Armenia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Bhutan, Bolivia, Bosnia and Herzegovina, Brazil, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Canada, Central African Republic, Chad, Chile, China, Colombia, Congo, Côte d’Ivoire, Croatia, Cyprus, Czech Republic, Denmark, Djibouti, DRC, Ecuador, Egypt, El Salvador, Estonia, Ethiopia, Finland, France, Gaza, Georgia, Germany, Greece, Guatemala, Guinea, Guinea-Bissau, Guyana, Hungary, India, Indonesia, Iran, Iraq, Israel, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kosovo, Kuwait, Kyrgyzstan, Laos, Lebanon, Libya, Macedonia, Madagascar, Malawi, Malaysia, Mali, Malta, Mauritania, Mexico, Moldova, Montenegro, Morocco, Myanmar, Nepal, Netherlands, Niger, Nigeria,
North Korea, Norway, Pakistan, Papua New Guinea, Paraguay, Peru, Philippines, Republic of Ireland, Russia, Rwanda, Saudi Arabia, Senegal, Serbia, Somalia, South Africa, South Korea, South Sudan, Sri Lanka, Sudan, Sweden, Switzerland, Syria, Taiwan, Tajikistan, Tanzania, Thailand, Trinidad and Tobago, Tunisia, Turkey, Uganda, UK, Ukraine, USA, Venezuela, Vietnam, West Bank, Western Sahara, Yemen, and Zimbabwe.


25 While there are no recent official estimates, the Syrian Observatory estimated that 593,000 had been killed by the end of 2020 in Syria. This estimate does not appear to be an overcount considering the last estimate made in April 2016 by the United Nations and the Arab League Envoy to Syria, estimated that 400,000 had been killed.


30 This corresponds to regions identified by the UN in their SDG reports, though the World Bank groupings place Australia with the data analysis. The countries corresponding to each grouping can be seen in the footnotes and are identified here: https://data.worldbank.org/country.

31 This includes: American Samoa, Australia, Brunei Darussalam, Cambodia, China, Fiji, French Polynesia, Guam, Hong Kong SAR (China), Indonesia, Japan, Kiribati, DPR Korea, Republic of Korea, Lao PDR, Macao SAR (China), Malaysia, Marshall Islands, Micronesia, Mongolia, Myanmar, Nauru, New Caledonia, New Zealand, Northern Mariana Islands, Palau, Papua New Guinea, Philippines, Samoa, Singapore, Solomon Islands, Thailand, Timor-Leste, Tonga, Tuvalu, Vanuatu, Vietnam.


35 This includes: Albania, Andorra, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Kazakhstan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Moldova, Monaco, Montenegro, Netherlands, North Macedonia, Norway, Poland, Portugal, Romania, Russia, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, UK, Vatican City, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan.


37 This includes: Clipperton Island, Mexico, Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Anguilla, Antigua and Barbuda, Aruba, Barbados, Bonaire, Sint Eustatius and Saba, British Virgin Islands, Cayman Islands, Cuba, Curacao, Dominicana Republic, Grenada, Guadeloupe, Haiti, Jamaica, Martinique, Montserrat, Puerto Rico, Saint Barthlemy, Saint Kitts and Nevis, Saint Lucia, Saint Martin, Saint Vincent and the Grenadines, Sint Maarten, Trinidad and Tobago, United States Virgin Islands, Bahamas, Turks and Caicos Islands, Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Falkland Islands / Islas Malvinas, French Guiana, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela.

38 This includes: Akrotiri and Dhekelia, Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Palestine, Qatar, Saudi Arabia, Syria, UAE, Yemen.


43 This includes: Algeria, Egypt, Libya, Morocco, Tunisia, Ceuta, Melilla, Western Sahara.


This includes: Canada and the United States.


This includes: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka.


This includes: Angola, Burundi, DRC, Cameroon, CAR, Chad, RoC, Equitorial Guinea, Gabon, Kenya, Nigeria, Rwanda, Sao Tome and Principe, Tanzania, Uganda, Sudan, South Sudan, Djibouti, Eritrea, Ethiopia, Somalia, Botswana, Comoros, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Zambia, Zimbabwe, Benin, Mali, Burkina Faso, Cape Verde, Ivory Coast, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mauritania, Niger, Senegal, Sierra Leone, Togo.


Given the ten-year period these incidents were recorded in, it is possible that some of the groups are included more than once due to name changes, group splits and group factions.

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.

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 the Landmine and Cluster Munition Monitor by International Campaign to Ban Landmines, http://www.themonitor.org/en-gb/home.aspx (accessed 04 Jan 2021).

Car bombs’ 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.

11 percent of IED attacks with a reported mode of detonation in the last ten years were triggered by victim-activation.

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.


For more information of this process see Reaching Critical Will’s ‘Process for a political declaration on the use of explosive weapons in populated areas’, https://reachingcriticalwill.org/disarmament-fora/ewipa/political-declaration (accessed 06 Jan 2021).


For more information see www.insecurityinsight.org (accessed 05 Jan 2021).

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 4% of all incidents recorded by AOAV in the last decade.


AOAV recorded 990 incidents where firearms may have also been used in the attacks.

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