ACTION ON ARMED VIOLENCE

AOAV

EXPLOSIVE EVENTS

Monitoring explosive violence in 2013

Report by
Henry Dodd and Robert Perkins

Editor
Iain Overton

With thanks to
Nerina Čevra, Jane Hunter, Jacob Parakilas, Saara Jaffrey-Roberts, Steven Smith

Cover illustration
Men gather at a damaged site after aerial bombing in Aleppo, 23 December 2013.
(REUTERS/Mohamed Mounzer Masri)

Infographics
Sarah Leo

Clarifications or corrections from interested parties are welcome.

Research and publication funded by the Government of Norway, Ministry of Foreign Affairs.

Design and printing
Tutaev Design

Contents

Introduction

> ***All parties to conflict should avoid using explosive weapons with wide-area effect in populated areas. This includes roadside bombs, heavy weapons and artillery, and air strikes. I urge the [United Nations Security] Council to recognize and act on this fundamental humanitarian issue.***
>
> **United Nations Secretary-General, Ban Ki-moon,**
> 12 February 2013[1]

For the last three years, Action on Armed Violence has monitored the impact of explosive violence around the world. In this time we have watched the recorded toll from explosive weapons continue to climb, year on year.

This trend, regrettably, has continued in 2013. Our findings, presented here in *Explosive Events*, conclude that, in 2013, civilian deaths and injuries from weapons like artillery shells, rockets and car bombs increased by 15% from 2012.

Year on year civilians make up the majority of casualties from these weapons. Civilians continue to be at risk as they pray, shop, celebrate, mourn, and even rest in their own homes. That has not changed in the last twelve months.

The problem is not isolated to just a couple of warzones. For the third year running, explosive violence was reported in over 50 different countries and territories. Places as diverse as Burma, Egypt, Mali and India were directly affected.

The last year has seen an alarming escalation of explosive violence in Iraq, an under-reported crisis, despite the country having been the most-affected in terms of civilian casualties recorded in 2013. Most of these casualties were caused by improvised explosive devices (IEDs) detonated in crowded markets, mosques and restaurants. Such pernicious weapons were often used in Iraq to inflict the highest possible numbers of civilian casualties, and their impact is real and horrific.

Armed violence more generally in Iraq has reached levels not seen since 2008. *Explosive Events* explores the crisis in Iraq in more detail on pages 15-16.

Bombs and shells continued to fall on Syrian cities, killing and injuring thousands in 2013. The terrible intensity of the conflict, and the limitations this imposes on accurate reporting as the conflict heads into its fourth year means that it is likely that many casualties in Syria were not captured by AOAV's methodology (see page 14).

Explosive weapons:
Weapons that share common characteristics causing injuries, deaths 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 and artillery shells.[2]

In *Explosive Events* AOAV investigates some of the emerging threats, the most harmful trends and some of the most devastating weapons seen in 2013.

This report reiterates the reality that explosive weapons are especially harmful to civilians when used in populated areas. In this report AOAV explores the locations in which civilians were most at risk in 2013, and the circumstances in which they, as opposed to armed actors, bore the greatest burden.

It is important to note that only some of the horrendous impact from these weapons is ever going to be reflected in AOAV's data. Casualty figures alone cannot capture the homes lost, the psychological suffering inflicted and the life-changing economic deprivation that can follow after an explosion. Many more people are indirectly affected by explosive weapons and their pain cannot be reflected in these casualty figures.[3]

AOAV's data is also not an attempt to capture every casualty of every incident around the world, and no claims are made that this sample of data represents the total impact of explosive weapons on civilians in 2013. The full story is far, far worse.

This data should instead be considered an indicator of the scale and scope of explosive violence impacts. It should be considered an indicator of a need for change.

The UN Secretary-General Ban Ki-moon has repeatedly highlighted the urgent need to tackle the short and long-term harm from explosive weapons use. His urgings echo those of the ICRC, humanitarians, and human rights activists who have seen the impact of these weapons first-hand. Now, more and more concerned governments are joining the call for action to address the harm to civilians that explosive weapons continue to cause, year in, year out.

As the evidence in *Explosive Events* shows, these calls for action must be heeded.

A warning pasted on a street in Duma neighbourhood in Damascus, 3 October 2013.
The poster reads "Do not gather here, there is a possibility of shelling." (REUTERS/William Ismail)

Key findings

OVERVIEW

There was a 15% rise in the number of civilian casualties from explosive weapons in 2013, up from 2012.

- 37,809 people were killed or injured by explosive weapons in 2013, in 2,430 incidents. In 2012 AOAV recorded 34,758 total casualties from 2,742 incidents.
- Civilians made up 82% of total casualties (31,076 deaths and injuries). This is up from 2012 when civilians made up 78% of total casualties.
- This is the second consecutive year in which civilian casualties have increased.

When explosive weapons were used in populated areas 93% of casualties were civilians.

In other areas this figure fell to 36%.

Iraq, Syria, Pakistan, Afghanistan and Lebanon saw the highest number of civilian casualties in 2013.

- There was a 91% increase in civilian casualties in Iraq in 2013 compared to 2012 (12,799, up from 6,710).
- In terms of media coverage of the civilian casualties from explosive violence, Iraq was reportedly the most-affected country in the world in 2013. More than a third of civilian casualties from explosive violence were recorded there.
- Incidents were recorded in 58 different countries and territories around the world.

POPULATED AREAS

- On average, 18 civilians were killed or injured every time explosive weapons were used in populated areas. In other areas, that number was just three.
- Markets were the location that saw the highest number of civilian casualties (3,608). Attacks in markets took place in 15 countries and territories.
- Child casualties were recorded in 34 different countries and territories.

EXPLOSIVE WEAPON TYPES

Air-launched explosive weapons

- Air-launched explosive weapons were responsible for 6% of recorded civilian casualties from explosive violence in 2013 (2,012 civilian deaths and injuries).
- These weapons were less likely to be used in populated areas than ground-launched or IEDs. 45% of aerial attacks were in populated areas.
- When air-launched weapons were used in populated areas, 85% of casualties were civilians.
- A third of air-attacks and 85% of civilian casualties from air-launched explosive weapons were in Syria.
- AOAV recorded an average of 30 civilian casualties in every reported barrel bomb strike in Syria.

Ground-launched explosive weapons

- Ground-launched explosive weapons were responsible for 16% of civilian casualties from explosive violence in 2013 (5,030 civilian deaths and injuries).
- 89% of casualties were civilians, higher than from either air-launched weapons or IEDs.
- 85% of mortar incidents were reported in populated areas, higher than for any other weapon type.
- There was an average of 49 civilian casualties in every ballistic missile strike in Syria, the highest for any weapon type.

IEDs

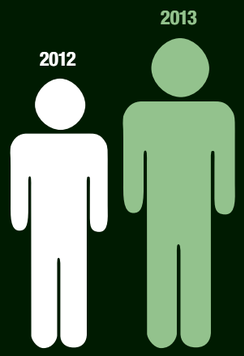
- IEDs were responsible for 73% of civilian casualties from explosive violence in 2013 (22,829 civilian deaths and injuries).
- The number of recorded civilian casualties from IEDs rose by 35% in 2013.
- There were three times as many civilian casualties from IEDs in Iraq as in the second-most affected country, Pakistan.
- In Iraq, mass casualty IED attacks (incidents where there were 25 or more civilian casualties) almost doubled in 2013 (150 up from 82 in 2012).
- Globally, AOAV recorded a 17% increase in civilian casualties from suicide bombs in 2013 (6,333 civilian deaths and injuries up from 5,398).

EXPLOSIVE VIOLENCE IN 2013

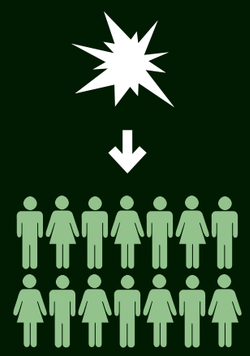
DATA: AOAV, BASED ON ENGLISH-LANGUAGE MEDIA REPORTS.

82%
CIVILIAN CASUALTIES

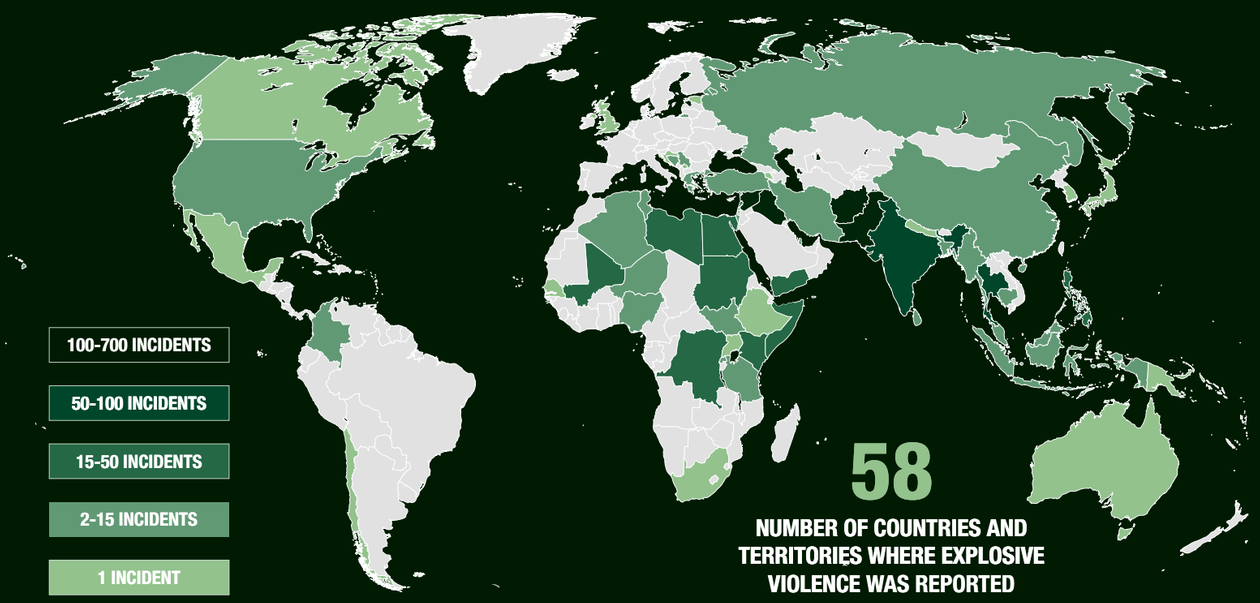
TOTAL REPORTED CASUALTIES: 37,809
TOTAL CIVILIAN CASUALTIES: 31,076



+15%
INCREASE IN TOTAL CIVILIAN CASUALTIES (KILLED & INJURED)



14
AVERAGE NUMBER OF CIVILIAN CASUALTIES PER INCIDENT



58
NUMBER OF COUNTRIES AND TERRITORIES WHERE EXPLOSIVE VIOLENCE WAS REPORTED

TARGETED AREAS

93% CIVILIAN CASUALTIES IN POPULATED AREAS

1,544 ATTACKS IN POPULATED AREAS

36% CIVILIAN CASUALTIES IN NON-POPULATED AREAS

886 ATTACKS IN NON-POPULATED AREAS

MARKETS

PLACES OF WORSHIP

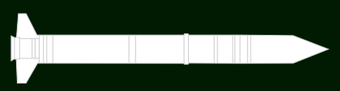
PUBLIC GATHERINGS (E.G. PROTESTS, FUNERALS OR WEDDINGS)

3,707 TOTAL CASUALTIES	**97%** CIVILIAN CASUALTIES	**25** AVERAGE CIVILIAN CASUALTIES PER ATTACK
3,604 TOTAL CASUALTIES	**97%** CIVILIAN CASUALTIES	**36** AVERAGE CIVILIAN CASUALTIES PER ATTACK
2,670 TOTAL CASUALTIES	**99%** CIVILIAN CASUALTIES	**39** AVERAGE CIVILIAN CASUALTIES PER ATTACK

DEADLY WEAPONS

AVERAGE CIVILIAN CASUALTIES PER INCIDENT BY EXPLOSIVE WEAPON TYPE

49



BALLISTIC MISSILES

24

CAR BOMBS

19

AIR-DROPPED BOMBS

CIVILIAN CASUALTIES BY WEAPON LAUNCH METHOD

4 IN 10 STRIKES IN POPULATED AREAS

8 IN 10 STRIKES IN POPULATED AREAS

6 IN 10 STRIKES IN POPULATED AREAS

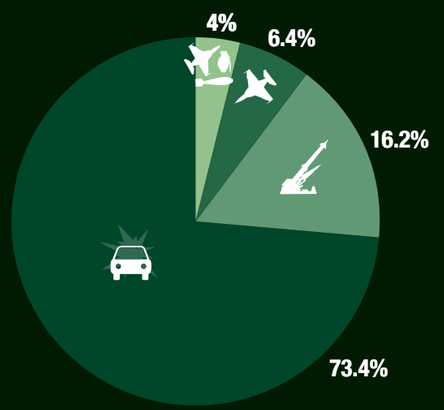
4 IN 10 STRIKES IN POPULATED AREAS

AIR-LAUNCHED WEAPONS

GROUND-LAUNCHED WEAPONS

IEDs (IMPROVISED EXPLOSIVE DEVICES)

COMBINATIONS OR UNCLEAR



Key terms

CASUALTY:
Refers to people who were killed or physically injured.[4]

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

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

POPULATED AREA:
Refers to areas likely to contain concentrations of civilians.[5]

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 WEAPON TYPES:
Refers to incidents where a combination of different explosive weapons were used and it was not possible to attribute casualties to each munition. These can involve any combination of air, ground-launched, or IEDs. The category most commonly includes attacks where ground-launched weapons such as rockets and artillery shells were fired together.

MINES:
Refers to incidents where the explosive weapon was described as a mine or landmine. These include both antipersonnel and anti-vehicle mines.[6]

AIR-LAUNCHED:

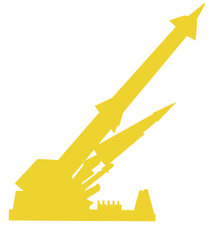
- **Air strike:** The broadest recording category in this grouping. It refers to incidents where explosive weapons were reported as delivered by drones, planes, helicopters, or other aircraft, and the type of munition fired was not specified in the news source.[7] Where the munition used is specified in news sources it is recorded as one of the following more specific weapon categories below.

- **Air-dropped bomb:** Refers to bombs reported as being delivered by air. References to areas being 'bombed' by military aircraft were recorded as air-dropped bomb incidents. This can include make-shift manually-deployed bombs, as well as cluster bombs.[24]

- **Missile:** Recorded where explosive missiles delivered by air were reported in a news source, most commonly in drone attacks.[8]

- **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.[9] 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.[10]

- **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. IEDs which were reported as being attached to vehicles, such as a sticky bomb attached to a 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.

- **Multiple IED types:** Incidents where a combination of different IEDs were used in an incident, and where news sources did not separately attribute casualties from individual devices.

2013 Overview

AOAV recorded **37,809** people killed and injured by explosive weapons in **2,430** incidents in 2013.

This was a **15% increase** in the number of civilian casualties from explosive violence from 2012. (31,076 up from 27,025 in 2012).

Of these casualties in 2013, **82%** were civilians (**31,076** civilian deaths and injuries).

THE CASUALTIES

AOAV recorded an increase in civilian casualties from explosive violence for the second consecutive year. In 2013 more than 31,000 civilians were reportedly killed and injured by explosive weapons. This is 4,000 more civilian casualties than were recorded in 2012, an increase of 15%.[12]

Civilians yet again made up the majority of the reported casualties. In 2013, 82% of all casualties recorded by AOAV were reported to be civilians. This is also an increase from 2012.[13]

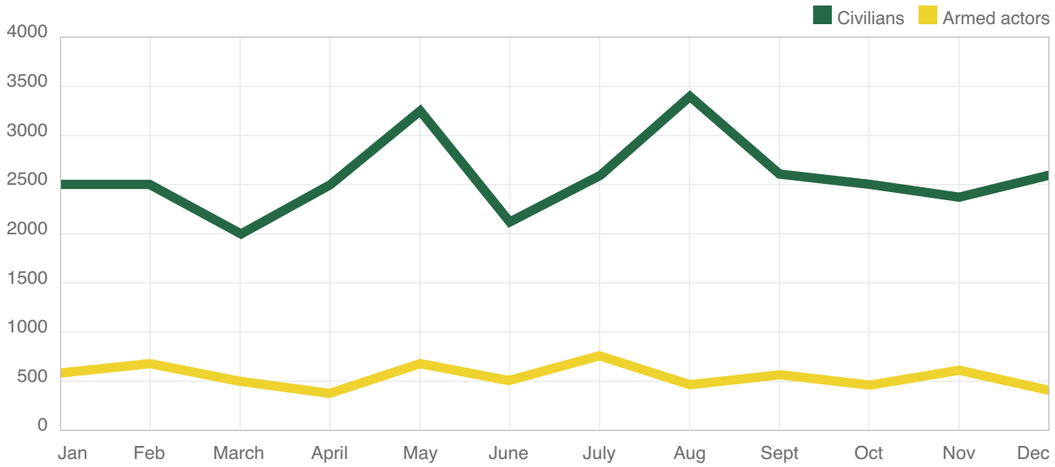
Despite the rise in casualties, there was a fall in the number of recorded incidents. AOAV recorded 2,430 incidents of explosive violence in 2013, down from 2,742 the previous year.[14] The fact that AOAV recorded a higher number of casualties from a smaller number of incidents suggests an escalation in the intensity of attacks in some countries. This is an issue that is explored throughout the report.

As in previous years, civilians were most at risk when explosive weapons were used in populated areas.[15] Almost two-thirds of all attacks in 2013 were reported in populated areas (1,544 incidents, or 64%). In these incidents, the proportion of casualties who were civilians climbed to 93%, compared to 36% in other areas.[16] The full impact of explosive weapons in populated areas is investigated further in pages 18-20.

As shown in *Figure 1*, the reported civilian casualties of explosive weapons consistently outnumbered armed actors. AOAV recorded an average of 2,590 civilian casualties per month in 2013. In both May and August, AOAV recorded more than 3,000 civilian deaths and injuries from explosive weapons.[17]

The spikes in both months broadly correspond with particularly-fierce outbreaks of explosive violence in Iraq, with car bombs detonating in markets or outside crowded commercial centres. In August, for example, there were six separate days in which AOAV recorded over 100 civilian deaths and injuries in Iraq.

Figure 1 **Casualties by month in 2013**



A GLOBAL PROBLEM

In 2013 AOAV recorded at least one casualty from explosive violence in 58 different countries and territories. This is the same number of affected countries as in 2012. There were 12 countries where a casualty was recorded in 2013 but not in 2012. These included Tanzania, Uganda and Niger.[18]

By some distance the country with the most recorded civilian casualties from explosive violence was Iraq *(Figure 2)*. The dramatic increase in IED use in populated areas of Iraq, from levels that were already extremely high in 2012, is one of the most striking developments in the last year. Iraq had been the second most-affected country in the world in 2012, with almost 7,000 civilian casualties from explosive violence recorded. Yet in 2013 AOAV saw a 91% increase in civilian casualties in Iraq, up to 12,799. More than a third of all civilian casualties from explosive weapons in 2013 were recorded in Iraq (see page 15 for more details).[19]

With the conflict in Syria continuing into its fourth year in March 2014, the nature of the violence means AOAV's incident-based monitoring methodology is unable to capture the full extent of the suffering in that country.

This particular challenge is discussed in greater detail on page 14. Even so, more casualties and more incidents of explosive violence were recorded in Syria than anywhere in the world outside Iraq. Syria accounts for 38% of all manufactured explosive weapon incidents. These are commercially-produced weapons like aircraft bombs or artillery (see pages 23-28).

Iraq, Syria, Pakistan and Afghanistan were the four most-affected countries in 2013, as they had been in 2012.[20]

Figure 2 shows notable increases in civilian casualties in countries such as Lebanon, the USA and India, all of which were hit by large IED attacks, (in Beirut, Boston and Hyderabad respectively).[21]

Several countries and territories that suffered from high levels of explosive violence in 2012 saw notable decreases in both the frequency and intensity of incidents in 2013. The two most prominent declines came in Gaza and Nigeria, neither of which now feature among the most-affected countries.[22]

Figure 2 **The most-affected countries and territories in 2013, by civilian casualties**

	Country	Civilian casualties	Number of incidents	Average civilian casualties per incident	Percentage of casualties that were civilians	Global ranking in 2012
1	**Iraq**	12,799	689	19	89	2
2	**Syria**	7,011	431	16	88	1
3	**Pakistan**	4,279	409	10	77	3
4	**Afghanistan**	1,704	310	5	61	4
5	**Lebanon**	1,304	39	33	98	15
6	**India**	438	71	6	81	14
7	**Somalia**	408	41	10	82	8
8	**Yemen**	392	46	9	53	11
9	**Libya**	306	18	17	92	12
10	**USA**	272	4	68	99	39
11	**Turkey**	241	9	27	96	18
12	**Russia**	221	14	16	89	17
13	**Egypt**	211	34	6	39	45
14	**Philippines**	210	49	4	72	13
15	**Thailand**	154	56	3	41	6

THE EMERGING HOTSPOTS OF 2013

Egypt

Egypt saw the largest proportional increase in reported civilian casualties from explosive weapons.[23] In 2013 AOAV recorded 211 civilian deaths and injuries in Egypt from 34 incidents. This is a dramatic escalation from the previous year, when explosive violence was extremely limited. AOAV recorded just four civilian casualties from five incidents in 2012. More than three-quarters of incidents took place in the second half of 2013, suggesting a worsening crisis in the country.

While there have been periodic outbreaks of armed violence in Egypt in recent years, 2013 witnessed a significant surge in the use of explosive weapons. Both state forces and non-state actors used explosive weapons in Egypt.[24]

Attacks were recorded in seven provinces, including seven incidents in the capital city Cairo. The most-affected province was the disputed Sinai Peninsula, where there were frequent air strikes against militants as well as IED and mortar attacks on military convoys and bases. The worst incident occurred in the town of Mansoura on 24 December 2013, where a suicide bomb destroyed a police residential compound. Fifteen people were killed by the bomber, including four civilians.[25]

In total, AOAV recorded five suicide attacks in Egypt last year. There had only been six such attacks in the country between 1981 and 2012.[26]

Lebanon

AOAV recorded over 1,300 civilian casualties from explosive violence in Lebanon last year, more than seven times the total recorded in 2012.[27]

It makes Lebanon the fifth most-affected country in the world in 2013 (see *Figure 2* on page 10).

Explosive violence in Syria was a persistent threat to civilians across the Lebanese border, including Syrian refugees. Half of all incidents recorded by AOAV in Lebanon were a direct result of spillover explosive violence from inside Syria. Ground-launched weapons like mortars and rockets were responsible for almost two-thirds of incidents in Lebanon (64%).

The majority of civilian casualties in Lebanon were, however, a result of several massive car bombings in the two largest cities in the country, Beirut and Tripoli.[28] Groups claiming responsibility for IED attacks in Lebanon explicitly linked their actions to the Syrian conflict.[29]

> ***I came here and saw the catastrophe. Bloodied people were running in the street, several other dead, bodies were scattered on the ground. It looked like doomsday, death was everywhere.***
>
> **Samir Darwish,**
> Tripoli resident, 24 August 2013[30]

Mali

Explosive violence in Mali escalated dramatically at the start of 2013 as French armed forces carried out an intervention that included an aerial bombing campaign, in response to an armed rebellion in the north of the country.

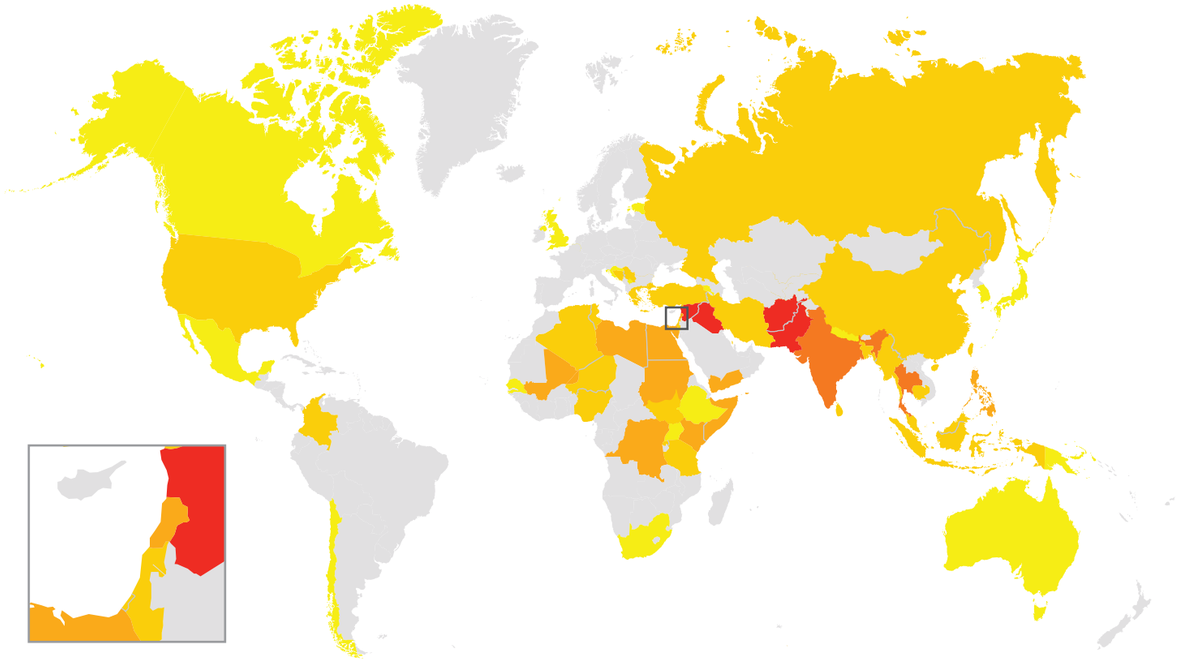
The majority of civilian casualties (63%) and incidents of explosive violence (58%) were recorded by AOAV in the first two months of the year.[31]

The year also saw significant new threats to civilians in the form of IED attacks. AOAV recorded 12 suicide attacks in Mali in 2013. Most did not take place in populated areas but instead occurred outside military checkpoints and armed bases. AOAV recorded four civilian casualties from these attacks compared to 82 armed actors. However these are thought to be the first suicide bombings in Mali.[32]

Civilians in Mali are also increasingly at risk from reported landmines and roadside bombs, adding to an ongoing threat from explosive remnants of war.[33] On 4 November four civilians were killed when their vehicle drove over a mine-like device in the northern Gao region.[34]

Incidents of explosive violence recorded by AOAV in 2013

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



Countries and territories with between 100 and 500 incidents
Iraq 689, Syria 431, Pakistan 409, Afghanistan 310

Countries with between 50 and 100 incidents
India 71, Thailand 56

Countries with between 15 and 50 incidents
Philippines 49, Yemen 46, Somalia 41, Lebanon 39, Egypt 34, Mali 26, Kenya 18, Libya 18, Democratic Republic of Congo 16, Sudan 16

Countries with between 2 and 15 incidents
Burma 14, Russia 14, Nigeria 12, Israel 10, Turkey 9, Gaza 9, Rwanda 9, Bahrain 8, China 7, Tunisia 6, Colombia 5, Indonesia 4, South Sudan 4, USA 4, Algeria 3, Bangladesh 3, Bosnia and Herzegovina 3, Cambodia 3, Greece 3, Iran 3, Malaysia 3, Niger 2, Serbia 2, Sri Lanka 2, Tanzania 2

Countries and territories with 1 incident
Armenia 1, Australia 1, Canada 1, Chile 1, Croatia 1, Estonia 1, Ethiopia 1, Japan 1, Kosovo 1, Mexico 1, Nepal 1, Papua New Guinea 1, Senegal 1, South Africa 1, South Korea 1, Uganda 1, UK 1

WHO IS BEHIND THE BOMBINGS?

As in previous years, many incidents of explosive violence in 2013 went unclaimed and it was unclear who was responsible for the majority of explosive weapon use.

Figure 3 **Civilian casualties by reported user**

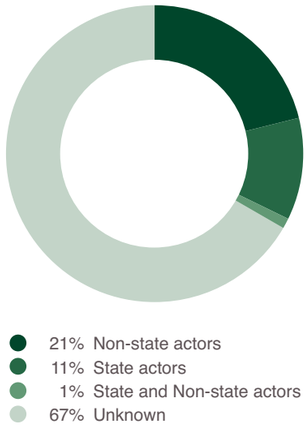


Figure 3 shows that responsibility could not be assigned in many of the incidents recorded in 2013. This was in large part because of the dramatic increase in civilian casualties in Iraq, where 92% of civilian casualties were caused by users not clearly identified in the reporting. State actors were responsible for 16% of recorded incidents of explosive violence in 2013 while non-state actors were behind 14% of incidents. The rest were unknown.

Most incidents in which the perpetrator was unknown involved the use of IEDs (73%). This issue was highlighted by AOAV in 2012.[35] As the Syrian government's use of so-called 'barrel bombs' are the only incidents where a state is known to have used IEDs in 2013 the proportion of incidents that can be attributed to non-state actors is likely far higher than shown in *Figure 3*.

More states were recorded as having used explosive weapons in 2013 than in 2012. Twenty-one different states were recorded to have used explosive weapons in 2013, in addition to the NATO ISAF coalition in Afghanistan (North Atlantic Treaty Organisation International Security Assistance Force).[36] In 2012 AOAV recorded 19 different state users. Ten states that had not used explosive weapons in 2012 used them in 2013.[37]

State use of explosive weapons caused 4,987 casualties in 2013, of whom 68% were civilians. The state users involved in the largest number of incidents in 2013 are listed in *Figure 4*. For a second year running, Syrian government forces were the most prolific state user of explosive weapons. Either alone, or in tandem with other actors, Syrian government forces caused 10% of all the civilian casualties that AOAV recorded from explosive violence in 2013, the greatest share of any single named actor.

Figure 4 **Biggest state users of explosive weapons in 2013**

	States
1	**Syria**
2	**NATO ISAF**
3	**US**
4	**Pakistan**
5	**India**
6	**Sudan**

AOAV recorded more than 50 different non-state armed groups using explosive weapons in 2013.[38] These groups were responsible for 7,956 casualties recorded by AOAV, 84% of which were civilians. Multiple Syrian rebel groups claimed responsibility for incidents of explosive violence. Combined, these groups were the most prolific non-state users of explosive weapons in 2013, as shown in *Figure 5*. The non-state groups recorded as responsible for the most incidents of explosive violence in 2013 are very similar to those identified in 2012.[39]

Figure 5 **Biggest non-state users of explosive weapons in 2013**

	Non-state
1	**Syrian rebels**
2	**Islamic State of Iraq**
3	**Taliban (Afghanistan)**
4	**Tehrik-i-Taliban Pakistan**
5	**Al-Shabaab (Somalia)**
6	**New People's Army (Philippines)**

Spotlight on Syria

The conflict in Syria, which began in March 2011, has now entered its fourth year. The intensity of fighting in the country has meant that detailed reporting on casualties through the media in 2013 was severely-limited.

The nature of explosive violence in Syria meant that in many cases it was almost impossible from media reporting to identify the specific time and location of attacks, the weapon used, or the number of persons killed or injured. As such, under AOAV's project methodology it was particularly difficult to record casualties occurring in Syria.[40]

This problem was particularly acute in 2013. The global media focus on the chemical weapon attacks in the suburbs of Damascus on 21 August, and on the subsequent threat of international military intervention, meant that the casualties of conventional explosive weapons were often overlooked.[41]

AOAV's data allows for comparison of patterns of harm across the casualties caused by explosive weapons. It can identify the circumstances in which civilians are most at risk from this group of weapons. Additional analysis of other datasets helps to establish the extent to which civilians are at risk from explosive weapons as opposed to other types of weapon.

Such analysis shows that explosive weapons have killed more civilians in Syria than any other weapon type.

In March 2014 AOAV carried out an analysis of data collected by the Violations Documentation Center (VDC) in 2013. The VDC is a Syrian casualty-recording organisation which disaggregates fatalities in the Syrian conflict by cause. In 2013, the VDC recorded 26,269 civilian deaths in Syria. More than 15,000 deaths (60%) were the result of explosive weapons.[42]

AOAV and the VDC datasets both revealed that approximately nine out of every 10 casualties of explosive violence in Syria were civilians.[43]

AOAV's data indicates that there were more civilians killed and injured in Iraq in 2013 than in any other country. However, AOAV recorded almost as many civilian *deaths* in Syria (3,219) as in Iraq (3,320).

More than half of the incidents in Syria were reported without any information on civilian injuries (52%) while less than a quarter (23%) of incidents in Iraq had no reported civilian injuries.[44]

In Syria the ratio of civilian deaths to injuries was far higher than the global average of 29%. In 2013, 46% of recorded civilian casualties were deaths. This is suggestive in part of the great intensity of explosive violence in Syria. It also reflects the nature of reporting of casualties in the conflict.

It is likely that many of the injuries caused by explosive weapons in Syria went unreported. If they were documented to the same degree as in Iraq then Syria would be the most-affected country in AOAV's 2013 dataset.

These issues impact the overall total of casualties recorded by AOAV for a given year. For 2013, the figure of 37,809 persons killed and injured by explosive weapons is likely to be significantly higher. However, AOAV's research gives a clear sense of the world's hotspots for explosive violence in 2013, and the trends emerging from these conflicts.

> ***Syria is in free-fall. Relentless shelling has killed thousands of civilians and displaced the populations of entire towns […] Civilians have been killed by mortars landing in the streets; others have been crushed by rubble after their homes were destroyed by barrel bombs. [..] The Government must cease using imprecise weaponry, such as unguided missiles, on civilian areas.***
>
> **Paulo Sérgio Pinheiro,**
> Chair of the Independent International Commission of Inquiry on Syria,
> 29 July 2013[45]

Spotlight on Iraq

AOAV recorded 12,799 civilians killed and injured by explosive weapons in Iraq in 2013. This is a 91% increase compared to 2012. This rise took Iraq back to the top of AOAV's list of countries most affected by explosive violence, a position it had previously held at the end of 2011 but was taken by Syria last year.

Civilian casualties in Iraq were highest during the month of May when 1,788 people were recorded as killed and injured by explosive weapons, 92% of whom were reported to be civilians. Incidents in May included an IED attack on a Sunni mosque which killed 43 worshippers, and a series of ten car bombs directed at markets and bus stops across Baghdad that killed and injured 163 civilians.[46] May's attacks followed provincial elections on 20 April and a subsequent violent crackdown by the Iraqi security forces against protesters in the city of Hawija three days later. These events in turn triggered a wave of violence across the country.[47]

Explosive violence in Iraq increased in its intensity in 2013. An average of 19 civilians were killed and injured in each incident, up from 14 the previous year.

2013 also saw an increase in incidents in Iraq that caused mass casualties.[48] The number of incidents reported as killing and injuring at least 25 civilians almost doubled in a single year, from 85 in 2012 to 150 in 2013. In 2013, 7,743 civilians were killed and injured in these mass casualty incidents.

As well as increases in large attacks, there were more days in which a large number of incidents occurred across the country. In 2013 there were 18 days where AOAV recorded ten or more incidents of explosive violence in Iraq compared to eight the previous year.

The vast majority of civilian casualties from explosive violence in Iraq were caused by IEDs (96%). The worst explosive weapons recorded across the country in 2013 were car bombs which killed and injured 7,618 people, 92% of whom were civilians.

Measures to address this threat appear to be having little impact. In Baghdad older vehicles with temporary black license plates were banned in May as they are often used by bombers since they are difficult to trace.[49]

There was also a sharp increase in the number of attacks involving suicide bombs recorded by AOAV. The increasing prevalence of these attacks in Iraq is behind much of the rise in civilian casualties. In 2013, 127 incidents in Iraq were reported to have involved suicide bombings, dwarfing the previous year's tally of 36. Attacks involving suicide bombers caused particularly high levels of harm with an average of 29 civilians killed and injured in each incident compared to 19 for all incidents in Iraq. In total 3,706 civilians were killed and injured by suicide bombers in Iraq, compared to 904 in 2012, a rise of 309%.

> ***Before we could escape to Syria, but with the violence there where can we go? There is no way out.***
>
> **An unnamed Iraqi,**
> quoted in *The Independent*, 2 May 2013[50]

Some locations likely to contain packed crowds of civilians saw huge increases in the number of attacks. Incidents in markets across Iraq rose by 132% compared to 2012. Attacks on places of worship like mosques rose by 105%.[51]

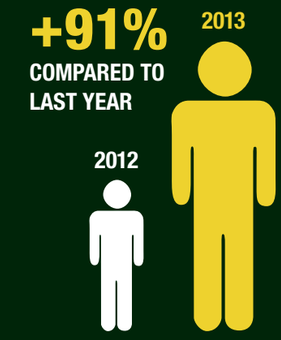
Iraq's escalating violence is not confined to casualties caused by explosive weapons. The organisation Iraq Body Count claimed that 9,500 civilians died in violence in 2013.[52] This is more than double the number of deaths they recorded in 2012. According to estimates by the United Nations 7,818 civilians were killed by violence in Iraq in 2013 and a further 17,981 civilians were injured.[53] These are the highest figures they have recorded since 2008 when the sectarian civil war was at its peak.

> ***The people who used to come here and eat and to smoke now prefer to […] take their orders to their house, they are afraid to sit in the cafe.***
>
> **Anwar Mohammed,**
> a cafe owner in Baghdad,
> 22 July 2013[54]

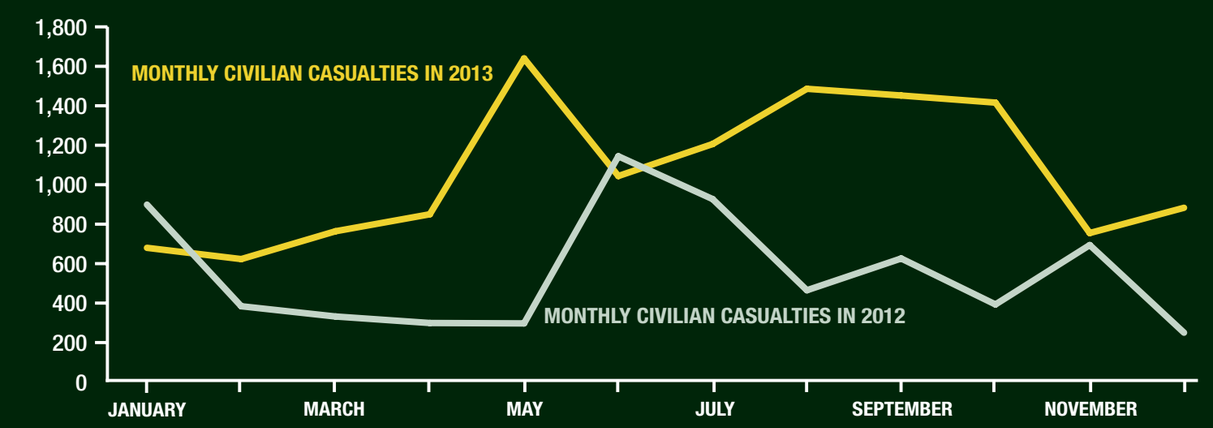
THE HARDEST-HIT PROVINCES IN IRAQ

12,799
CIVILIANS KILLED AND INJURED IN IRAQ IN 2013

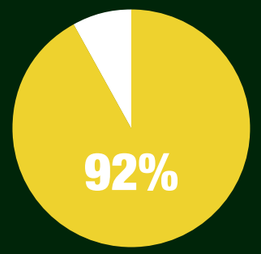
+91%
COMPARED TO LAST YEAR



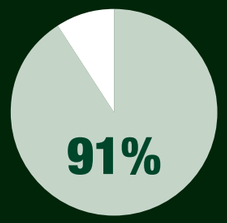
CIVILIAN CASUALTIES BY MONTH: 2013 v 2012



CIVILIANS KILLED & INJURED: 2013 v 2012



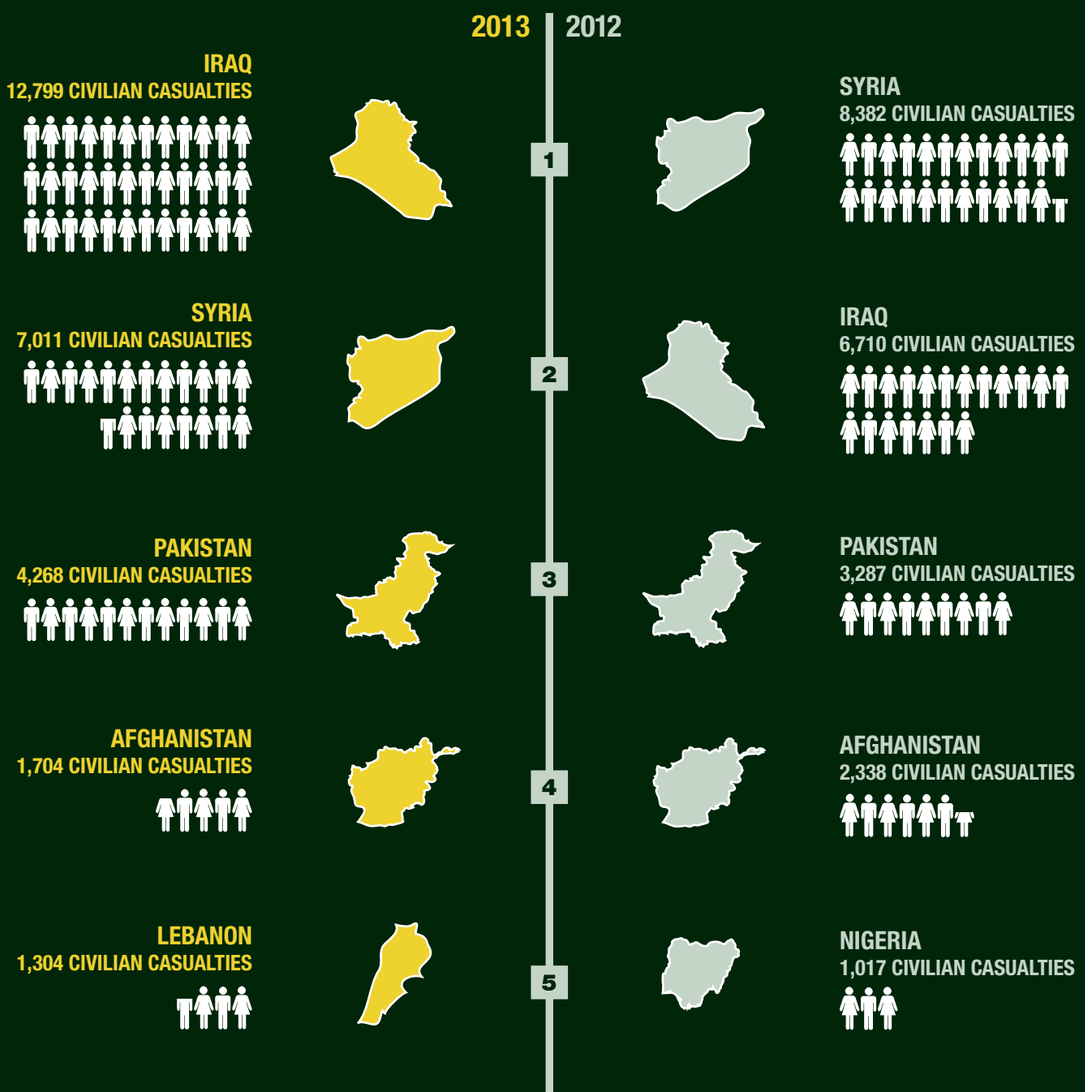
28,473
CIVILIAN CASUALTIES IN POPULATED AREAS IN 2013



24,603
CIVILIAN CASUALTIES IN POPULATED AREAS IN 2012

+15%
INCREASE IN TOTAL CIVILIAN CASUALTIES (KILLED & INJURED)

THE MOST DANGEROUS PLACES TO BE A CIVILIAN



Explosive weapons in populated areas

In 2013, **93%** of casualties in populated areas were reported as civilians. This is compared to **36%** in other areas.

On average **18** people were killed or injured in every incident of explosive weapon use in populated areas. In other areas in 2013 the average number was three.

3,608 civilians were killed or injured in marketplaces, a **33%** increase from 2012.

Child casualties were recorded in **34** different countries and territories.

POPULATED AREAS

In 2013 when explosive weapons were used in populated areas, 93% of the casualties were reported to be civilians. This compares to 36% in other areas.

This pattern is very similar to the one that has been evident in previous years. In 2012, 91% of the casualties in populated areas were reported as civilians, compared to 32% elsewhere.

It is a consistent trend in AOAV's data that reflects a clear relationship; the use of explosive weapons in areas where civilians are concentrated is likely to lead to elevated levels of civilian harm and suffering.

As in the year before, over half of the total incidents that AOAV recorded in 2013 were in areas reported to be populated (1,544 incidents, or 64%).

The heightened impact of incidents in populated areas can be seen in the fact that AOAV recorded an average of 18 civilian casualties per incident of explosive violence in a populated area, compared to just three in other areas.

LOCATIONS

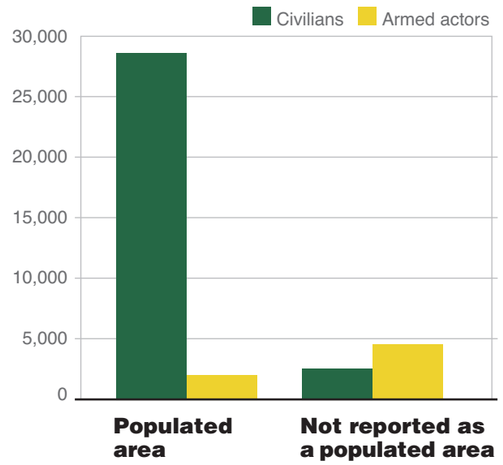
As *Figure 7* overleaf shows, markets were the location type in which the highest number of civilian casualties was recorded. AOAV documented 3,608 civilian death and injuries in markets. Civilians made up 97% of all the casualties that were reported in markets, souks and bazaars around the world.

AOAV recorded 142 attacks in markets (6% of all incidents). Markets were bombed and shelled in 15 countries and territories, places as diverse as Burma, Colombia, Rwanda and Yemen. More than half of attacks in markets took place in Iraq. The majority (79%) of attacks in markets involved the use of IEDs (112 out of 142).

In 2013 AOAV recorded almost a thousand additional civilian casualties in market attacks. This is a 33% rise from 2012.[55]

Places of worship also saw particularly high numbers of civilian casualties in 2013. A total of 3,509 civilians were recorded killed or injured in churches, mosques and temples around the world. Again, this represented a significant increase from 2012.[56] The majority of these civilian casualties were concentrated in Iraq (42%), Pakistan (28%), and Syria (10%).

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

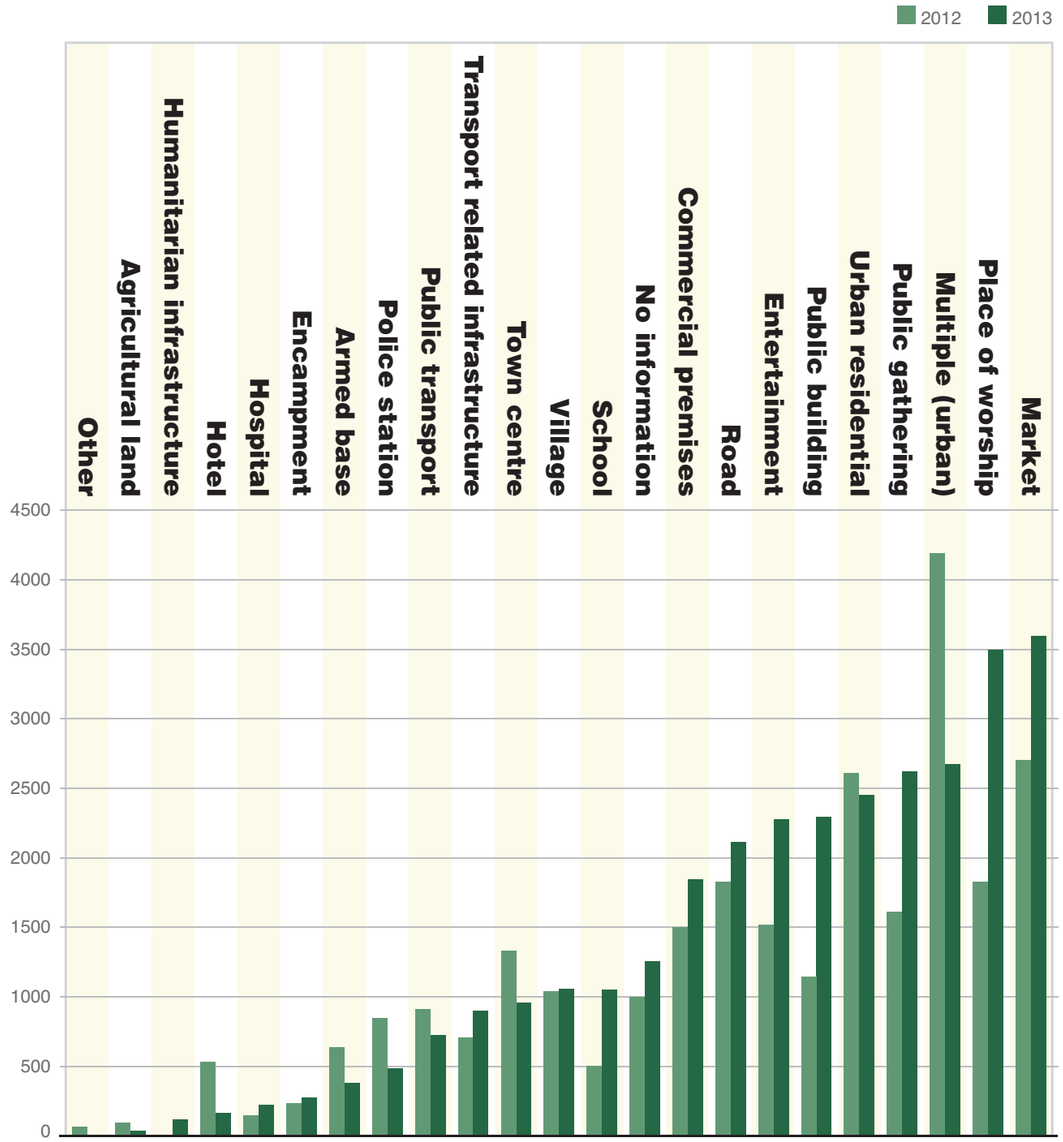


Not captured in AOAV's dataset is some of the physical destruction caused by explosive weapons in locations such as markets. The damage can have economic and social consequences that continue long after the blast itself. In addition, such attacks can have huge psychological impacts on civilians, leaving them reluctant to return to locations where they are entitled to feel safe.

TARGETING

In attacks where armed actors were the clearly-reported targets, civilians still made up 45% of the casualties.[57] When attacks directed against armed actors took place in populated areas, that percentage rose significantly to 74%, while in other areas civilians made up only 12% of recorded casualties.

Figure 7 **Civilian casualties by incident location**



In such incidents, civilian casualties in populated areas were sometimes caused by the use of explosive weapons with particularly large blast effects. On 6 April, for example, aircraft bombs were dropped on the Afghan village of Suno during a joint NATO and Afghan operation against Taliban fighters. UN investigators found that 13 civilians died as a result of the bombing, including ten children and two women. While the cause is still in dispute, all the casualties died in one room and may have resulted from the use of bombs with airburst fuses.[58] These bombs detonate above ground, creating shockwaves that can have a devastating effect in enclosed spaces.[59] The use of multiple large bombs whose effects were hard to contain in a populated area was criticised by the UN.[60]

Civilians faced a similar threat from the use of large IEDs to attack armed actors in populated areas. A suicide attack targeted against military vehicles in the Afghan capital Kabul on 16 May not only killed several soldiers, but the blast on a busy commercial street was so powerful that nine Afghan civilians were killed, including two children.[61]

WOMEN AND CHILDREN

As in previous years, the reporting of the age and gender of casualties in 2013 was extremely limited.[62] Many sources simply did not report the age or gender of victims. In 2013 AOAV recorded 1,462 child casualties from explosive weapons, while 826 casualties were reported to be girls and women. From the sample of incidents that did report information on the age of casualties, children made up 17% of civilian casualties.

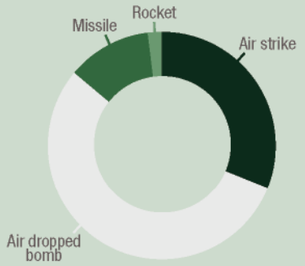
AOAV recorded child casualties of explosive violence in 34 different countries and territories in 2013. Almost half of child casualties were reported in Syria (49%).

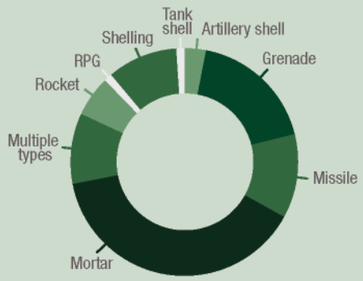
> ***The injuring of innocent children who are studying for a better future is appalling. Attacks that affect Iraqi children's education show disregard for fundamental principles of humanity. No cause justifies them and they have gone on for far too long. They must stop.***
>
> **Dr. Marzio Babille,**
> UNICEF Representative to Iraq,
> 13 March 2013[63]

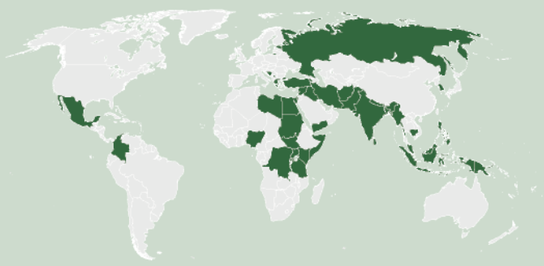
Children in Syria have suffered massively from the impact of explosive weapons. A survey of data collected on the casualties of the conflict in Syria from March 2011 to the end of August 2013 showed that explosive weapons were by far the primary cause of death in Syria, causing 71% of child fatalities in the conflict.[64]

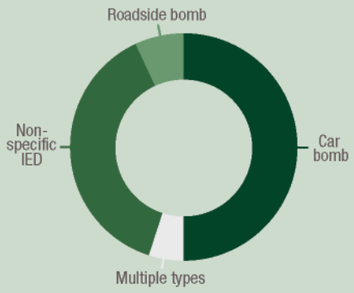
In 2013 AOAV recorded a notable increase in explosive weapons use in and around schools. In total AOAV recorded 1,060 civilian casualties in schools, almost double the amount recorded in 2012.[65] More than a quarter of these casualties were children (27%).

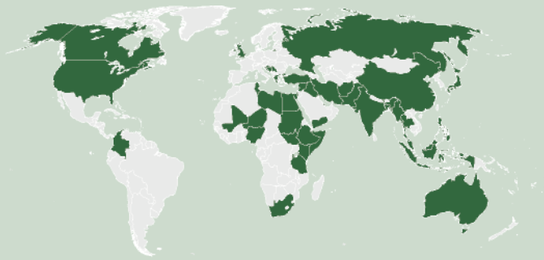
On 11 March in northern Iraq, more than 100 children were injured by a bomb that exploded outside the Wlad secondary school in northern Iraq. Six children were in critical condition immediately after the attack, with another ten suffering fractures and significant bleeding from the shrapnel and blast waves.[66] As children are smaller and their bodies more fragile, they are known to be especially vulnerable to the blast and fragmentation effects of explosive weapons.[67]











Explosive weapons types

AOAV records information on the explosive weapon used in any incident, the full list of categories can be found on pages 7-8. Some are kept deliberately broad in order to reflect the language used in source reporting (i.e. 'shelling', which can cover several types of ground-launched weapons). More specific weapon categories are used where such information is available in the source material.

In order to better understand the differing impacts of these weapons, they have been split into three different groups of similar weapons; those delivered by air, by ground, or if they are improvised explosive devices (IEDs).[68]

The total number of civilian casualties recorded by AOAV from each weapon type is shown in *Figure 8*.

Figure 8 **Civilian casualties by weapon type**

Weapon type	Civilian casualties
Air-launched	
Air strike	618
Air-dropped bomb	1,108
Missile	244
Rocket	42
Ground-launched	
Artillery shell	131
Grenade	933
Missile	598
Mortar	1,965
Multiple types	498
Rocket	305
RPG	58
Shelling	495
Tank shell	47
IEDs	
Car bomb	11,477
Multiple types	1,234
Non-specific IED	8,571
Roadside bomb	1,547

Air-launched explosive weapons

Air-launched explosive weapons were responsible for 2,012 civilian casualties in 2013 (**6%** of all those recorded).

85% of civilian casualties from air-launched explosive weapons were in Syria.

AOAV recorded an average of **30** civilian casualties per 'barrel bomb' attack in Syria.

Air-launched explosive weapons include a wide variety of ordnance, from bombs dropped out of planes or helicopters to missiles fired by unmanned drones. Air-launched explosive weapons were used exclusively by state forces in 2013.

AOAV recorded 2,012 civilian casualties from 273 incidents where planes, helicopters and other aircraft deployed explosive weapons in 2013. Air-launched weapons caused 6% of the total number of civilian casualties from explosive weapons in 2013, which marks a marginal decline from the total recorded in 2012.[69]

Civilians made up 60% of the total recorded casualties from air-launched explosive weapons in 2013. These casualties were recorded in 13 countries and territories.[70] As in 2012, most civilian casualties from aerial weapons were recorded in Syria. In 2013, 85% of civilian casualties from air-launched explosive weapons were recorded in Syria, from a third of all reported aerial attacks worldwide. This reflects not only an increase in Syria itself but also significant declines in Gaza and Afghanistan, places which had previously seen the highest number of air-launched incidents in 2012.[71]

As in 2012, air-launched weapons were reportedly used less often in populated areas than other launch methods. Fewer than half of all incidents involving air-launched explosive weapons were recorded in populated areas (45%).[72] As a comparison, 78% of ground-launched explosive weapon use was recorded in populated areas. This possibly shows a tacit acknowledgement by many militaries that the use of air-launched weapons is not likely to be appropriate in populated areas.

When air-launched weapons were used in populated areas, the proportion of casualties who were civilians rose to 85%. This is compared to 17% of casualties being civilians in other areas.

Figure 9 **Percentage of casualties from air-launched weapons who were civilians (Total casualty number shown)**

As shown in *Figure 9*, air-dropped bombs had the most destructive impact on civilians in 2013. In 57 incidents where bombs were used, AOAV recorded 1,108 civilian deaths and injuries.

Within the category of air-dropped bombs there is a broad range of weapons, many of which have the capacity to impact a wide area.

BARREL BOMBS

In 2012, AOAV reported the first recorded instances in Syria in which so-called 'barrel bombs' caused casualties.[73] Barrel bombs are improvised weapons comprised of containers filled with fuel, explosives and chunks of jagged metal.[74]

The use of these weapons increased significantly in 2013, with the majority of recorded incidents occurring during a sustained bombing campaign in Aleppo during December.[75]

AOAV recorded 571 civilian casualties from barrel bombs attacks in Syria. The ferocity of the Aleppo bombing during December, in particular, means that very few injuries could be accurately documented; of those that were, it was reported that 487 of casualties from barrel bombs were fatalities (85%).

Child casualties were reported in 13 of the 19 barrel bomb incidents, and children made up 19% of the civilian deaths that AOAV recorded from barrel bombs (92).

Barrel bomb attacks appear to be extremely destructive. There was an average of 30 civilian casualties for every incident in 2013. This was greater than the average for air-dropped bomb attacks in Syria that did not include reported barrel bombs.

> ***I condemn the use of brutal and indiscriminate weapons in densely-populated civilian areas, such as we have seen in Aleppo in recent days.***
>
> **William Hague,**
> UK Foreign Secretary,
> 23 December 2013[76]

This reflects both the destructive force of the bombs themselves, which are also completely unguided, as well as the nature of the incidents themselves. All but one of the barrel bomb attacks recorded by AOAV in Syria were reported in populated areas, mostly in residential districts in Aleppo. Many of the incidents involved a large number of bombs being dropped in quick succession.[77] The worst day came on 15 December when more than 125 people were killed in attacks on more than ten different neighbourhoods of Aleppo.[78]

A man carries a wounded girl who survived what activists say was an air strike in Aleppo's al-Ansari al-Sharqi neighbourhood, 9 December 2013. (REUTERS/Ammar-Abdullah)

CLUSTER BOMBS

Cluster bombs contain smaller explosive submuntions which are released over a wide area. Some cluster munitions are air-launched, while others can be ground-launched. These explosive weapons have been banned by the international community due to their indiscriminate and inhumane wide area effects.[79]

> ***Why is the world doing nothing while we continue to be bombed to pieces every day, even inside our homes?***
>
> **Noura,** 20-year-old Syrian speaking to Amnesty International, March 2013[80]

The use of cluster bombs in Syria continued in 2013 after having first been reported in the country in 2012.[81] AOAV recorded civilian casualties in ten cluster munition strikes in 2013, nine of which were in aerial attacks.[82] AOAV recorded 266 civilian casualties in these attacks, half of whom were fatalities (52%).

On 1 March nine RBK cluster bombs, each carrying as many as 150 submunitions, were dropped on densely-populated residential districts in Aleppo in northern Syria. At least 19 people were killed and 60 injured by the bomblets.[83] The use of cluster munitions has been widely-condemned, including in a resolution passed by the United Nations General Assembly in May 2013.[84]

FUEL-AIR EXPLOSIVES

On 29 September an ODAB fuel-air bomb fell on a high school in the city of Raqqa in northern Syria. Sixteen civilians died, including 10 students under the age of 18.[85] It was the first day of school, and children were gathered in a courtyard when the bomb landed.

The ODAB-500PM is a fuel-air explosive bomb, also known as a vacuum bomb. These weapons spit out a cloud of explosive high-energy fuel, which then ignites. They affect a very wide area.[86] They are particularly destructive in built-up environments, and have been condemned by Human Rights Watch as indiscriminate when used in populated areas.[87]

DRONES

A drone is the common name for a UAV (unmanned aerial vehicle). AOAV recorded fewer drone strikes in 2013 than in 2012, with 67 incidents compared to 92. Attacks in which drones were reported took place in Afghanistan, Egypt, Pakistan, Somalia and Yemen.

Recorded casualties from drone strikes fell in 2013, with a 23% global drop from 2012 levels.[88]

The decline in incidents and casualties was most notable in Pakistan where AOAV recorded less than half as many drone strikes in 2013 (24, down from 50), and a 53% drop in casualties (173, down from 371). This is consistent with the reporting of other civil society groups that investigate the impacts of drones.[89]

As in previous years, the impact that drone strikes have had on civilians in 2013 was unclear. AOAV recorded that 19% of the total casualties from drones were civilians. As drone strikes largely occur in remote locations where independent access is restricted, the full impact on civilians could be higher than is reported.

Twelve civilians are thought to have been killed in one drone attack in Yemen on 12 December. Four Hellfire missiles were reported to have missed an intended target and instead hit a wedding procession.[90]

> ***I saw a piece of skull on the ground, some of the student's bowels were showing. There is nothing surounding the school at 200-meter distance [sic]...***
>
> **Mohammad al-Raqqawi,**
> opposition activist with Raqqa Media Center, 30 September 2013[91]

Ground-launched explosive weapons

Ground-launched explosive weapons were responsible for 5,030 civilian casualties in 2013 (**16%** of the total recorded).

89% of casualties were civilians. This is higher than the proportion recorded from IED attacks (85%) or air-launched explosive weapons (60%).

85% of mortar strikes were in populated areas, more than any other explosive weapon type.

There was an average of **49** civilian casualties in each reported ballistic missile incident.

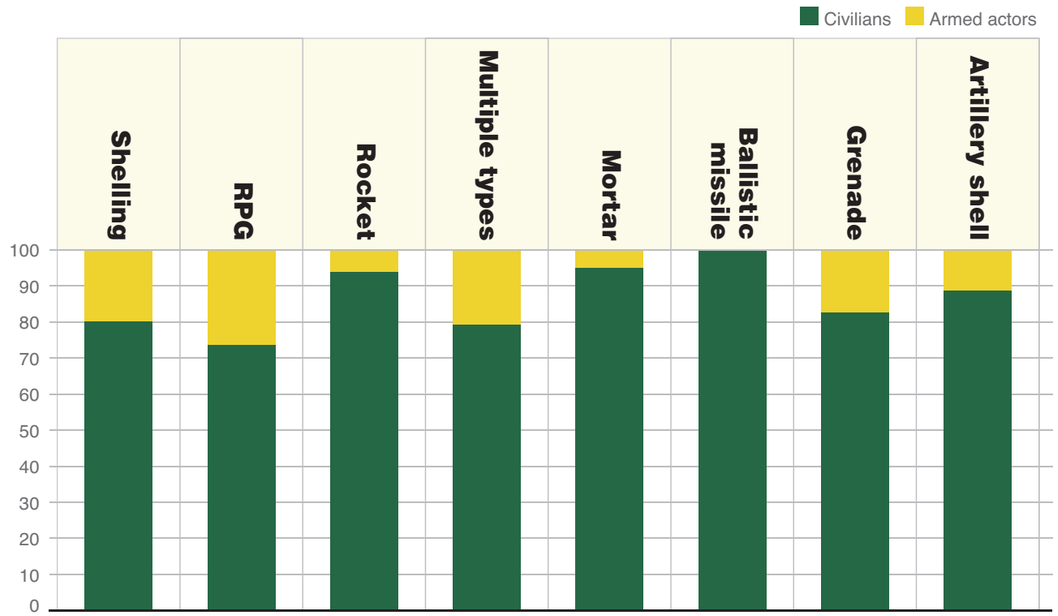
Ground-launched manufactured explosive weapons range from small hand grenades to heavy artillery and multiple rocket launchers.[92] They can be fired from a variety of platforms, but are all launched from surface level.

In 2013 these weapons were responsible for 16% of all civilian casualties of explosive violence recorded by AOAV (5,030). This is a decrease compared to the proportion recorded in 2012, and may in part reflect the escalation in IED use in Iraq.[93]

However, AOAV's data shows that ground-launched weapons were more likely than other launch methods to kill and injure civilians than armed actors. Eighty-nine per cent of casualties caused by ground-launched weapons were civilians in 2013. This is higher than the proportion recorded from IED attacks (85%) or air-launched explosive weapons (60%).[94]

Ground-launched weapons were also far more likely to be used in populated areas than other explosive weapons. In 2013, 78% of incidents involving ground-launched explosive weapons took place in populated areas. This is compared to 45% of air-launched incidents and 62% of IED incidents in 2013.

Figure 9 **Percentage of casualties from ground-launched explosive weapons were civilians**



Ground-launched weapons were widely used by both state and non-state actors. States were reported to be responsible for a quarter of ground-launched incidents in 2013.[95]

Some ground-launched weapons, most notably ballistic missiles and mortars, were particularly harmful for civilians as *Figure 9* on page 26 shows. [96]

MORTARS

Mortars have been identified in AOAV's data as one of the most harmful explosive weapons to civilians.[97] In 2013, there were more reported mortar incidents and a greater number of recorded casualties, than in 2012.[98] Reporting problems in Syria (see page 14), in particular, means that their impact on civilians was likely to have been even higher.

AOAV recorded 1,965 civilian deaths and injuries from mortars in 2013. This constitutes a 41% increase from the number of civilian casualties recorded in 2012.[99]

Globally, 95% of casualties recorded from mortars were civilians. This was higher than for any explosive weapon type other than ballistic missiles. Mortars are commonly fired in barrages into populated areas, and were more likely to be used in these locations than any other weapon type in 2013. Eighty-five per cent of all mortar strikes in 2013 were in populated areas.

The increase in civilian casualties from 2012 was partly due to the proliferation of mortar attacks in Syria in 2013. AOAV recorded twice as many civilian casualties from mortars in Syria in 2013 as in 2012.[100] Although mortar strikes were reported in 17 separate countries and territories including Burma, Democratic Republic of Congo and Mali, 79% of the civilian casualties that AOAV recorded from mortars occurred in Syria.

Mortars caused civilian casualties in eight of Syria's fourteen governorates. More than half of the civilian casualties from mortar fire in Syria were recorded in the city of Damascus and its suburbs (923 casualties, 59%). Most of this mortar fire was reportedly carried out by opposition and rebel fighters, though in very few attacks were claims of responsibility reported. Incidents of mortar fire were highly concentrated in populated areas of the city. On eight separate occasions mortars caused casualties in schools in Damascus. On 28 March, mortar rounds struck the canteen of Damascus University's agricultural college. Fifteen students were killed and at least 20 others were wounded.[101] The college is located in a central district of the city, near to the regime Defence Ministry.

> ***Mortars are completely inappropriate for use in civilian areas. Even if the intended target was a military objective, the choice of mortars to attack a target in proximity to civilians displays a callous disregard for their fate and the rules of international humanitarian law.***
>
> **Philip Luther,**
> Middle East and North Africa Director, Amnesty International,
> 28 March 2013[102]

BALLISTIC MISSILES

In 2013 ballistic missiles caused civilian casualties in Syria for the first time in the conflict. The use of these weapons had not been recorded anywhere in the world by AOAV in previous years.[103]

Ballistic missiles, often labelled 'Scuds', are extremely powerful explosive weapons.[104] The FROG-7, a missile known to have been used in Syria this year, travels at speeds three times greater than the speed of sound.[105]

These weapons are also notoriously inaccurate and can travel vast distances. They are guided only by gravity after their initial launch, yet the missiles in Syria's arsenal can travel up to 800 km.[106]

The decision to use such weapons in populated areas was explicitly condemned by governments,[107] human rights groups[108] and the United Nations.[109]

AOAV recorded 12 ballistic missile attacks that caused casualties in Syria. All but one of the attacks that caused casualties took place in clearly populated areas. In those 12 attacks, 591 people were killed or injured. All were reported to be civilians.

AOAV's data reveals some of the devastating impacts of ballistic missiles. There was an average of 49 civilian casualties recorded in every incident of ballistic missile use in Syria. This is by far the highest for any explosive weapon type.[110]

Among those killed by ballistic missiles were at least 108 children.

The northern province of Aleppo was most affected by ballistic missiles, with 85% of incidents recorded as occurring there.

On 18 February three separate missile attacks in the city of Aleppo killed 128 civilians. In the worst attack, 78 people died in the Ard al-Hamra neighbourhood. Thirty-eight children were killed by the missile, and at least 65 houses were instantly destroyed in the blast.[111]

The partial or complete destruction of physical infrastructure is common to explosive weapons that affect a wide-area.

> ***There is nothing left. My own house is over here and it is also destroyed. 27 of my relatives are dead or badly wounded. I am alive because I had left my house the minute before the tremendous, lightning blast. The regime has not only killed or maimed my family, but everyone I know.***
>
> **'Abdullah',** Aleppo resident, speaking to Human Rights Watch investigators, February 2013[112]

Houses in Kafr Hamreh, a town in northern Aleppo, that were destroyed during an apparent ballistic missile attack on 2 June 2013. (Human Rights Watch)

Improvised explosive devices (IEDs)

IEDs were responsible for 22,829 civilian casualties in 2013 (**73%** of the total recorded.

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

There was a **35%** increase in the number of civilian casualties caused by IEDs compared to 2012.

There were **three times** as many civilian casualties from IEDs in Iraq as in the second-most affected country, Pakistan

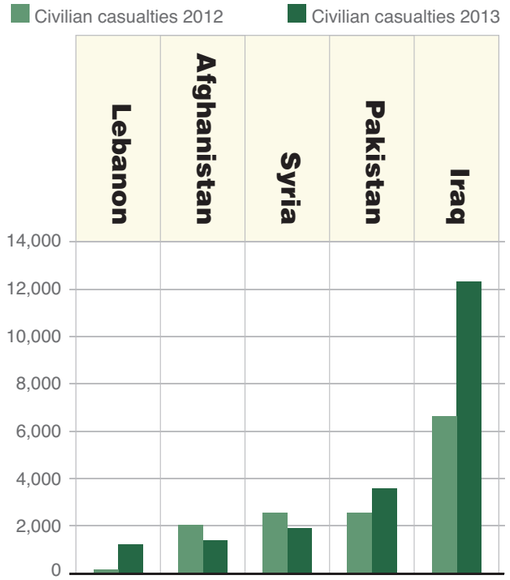
The majority of explosive violence casualties in 2013 were caused by improvised explosive devices (IEDs) like roadside and car bombs.[113] AOAV recorded 26,993 casualties from IEDs in 2013 making them responsible for 71% of all reported casualties, up from 60% the previous year.

Once again most of the casualties from IEDs were not armed patrols or military targets but civilians going about their daily lives. AOAV recorded 22,829 civilian casualties from IEDs meaning that 85% of those killed and injured by IEDs were civilians. This total represents a 35% increase in the number of civilian casualties caused by IEDs compared to 2012.[114]

IEDs caused at least one casualty in 41 different countries and territories.[115] The five countries with the highest levels of civilian casualties from IEDs were Iraq, Pakistan, Syria, Afghanistan and Lebanon. Attacks in these countries were responsible for 59% of civilian casualties from IEDs, but large attacks were also recorded in countries like India, the USA and Turkey. There were 12 countries where AOAV recorded only a single instance of an IED causing a casualty.[116]

Iraq was the country most heavily affected by IEDs. Over 12,000 civilians were killed and injured in IED attacks across the country, more than three times as many as in Pakistan (see *Figure 10*), the next most affected country, and six and a half more than in Syria.

Figure 10 **Top five countries for civilian IED casualties in 2013**



IEDs drove a 91% increase in civilian casualties in Iraq, and pushed it to the top of AOAV's list of affected countries in 2013. IED violence in Iraq has reached its highest level for years. Read more about the high levels of explosive violence in Iraq on page 15.

While Iraq saw the bulk of incidents and casualties from IEDs, the deadliest incidents in 2013 were actually in Pakistan. Four of the IED attacks that caused the most civilian deaths occurred in Pakistan (see *Figure 11*). In total 3,558 civilians were killed and injured by IEDs in Pakistan, over a thousand more than 2012 (a 43% increase). Over half of these civilian casualties occurred when IED attacks took place in markets (992 casualties) and places of worship (898 casualties).[117]

Figure 11 **The five IED attacks that killed the most civilians in 2013**

Incident	Country	Civilian casualties
16 February An IED hidden in a water tanker detonated in a busy market in Quetta killing shoppers including 17 children from a nearby school.	**Pakistan**	**89 killed** 221 injured
22 September Christian worshippers were killed at the All Saints Church in Peshawar by two suicide bombers.	**Pakistan**	**85 killed** 140 injured
11 January A suicide bombing in a snooker club in Quetta is part of a series of IED attacks across the city.	**Pakistan**	**79 killed** 105 injured
21 September Two suicide bombers attack a Baghdad funeral.	**Iraq**	**72 killed** 100 injured
26 July Two bombs, one a suicide attack, in a busy marketplace in Parachinar.	**Pakistan**	**57 killed** 167 injured

ATTACK LOCATIONS

Most IED attacks occurred in populated areas like town centres or public gatherings, (62%).[118]

As was the case in 2012 markets and places of worship were among the locations of IED attacks which saw the highest levels of civilian casualties. AOAV recorded 112 IED attacks in markets across 10 different countries causing 3,170 casualties.[119]

The worst attack on a market occured on 16 February, in Quetta, Pakistan. Eighty-nine people were killed when a thousand kilograms of explosives hidden in a tanker vehicle were detonated by a suicide bomber. Over 40 shops were levelled and the blast left a crater six feet deep and twelve feet wide.[120]

AOAV recorded 71 IED attacks in places of worship. Each of these incidents caused an average of 45 civilian casualties. These attacks took place in 11 different countries though 85% were in Iraq, Pakistan and Syria. Places of worship saw higher numbers of attacks by suicide bombers; 32% of IED attacks in these sites involved suicide as the means of detonation compared to 19% of all other locations.

The single incident with the highest number of civilian casualties was a twin car bombing of the As-Salam and Al-Taqwa mosques in Tripoli, Lebanon. At least 47 people were killed and 500 more were injured. The bombs struck just as Friday prayers were ending and were the deadliest in Lebanon since the end of the civil war in 1990.[121]

> ***We were just bowing down to pray for the second time and the bomb went off. The air cleared, and I looked around me and saw bodies.***
>
> **Samir Jadool,**
> a witness to the Tripoli mosque bombings[122]

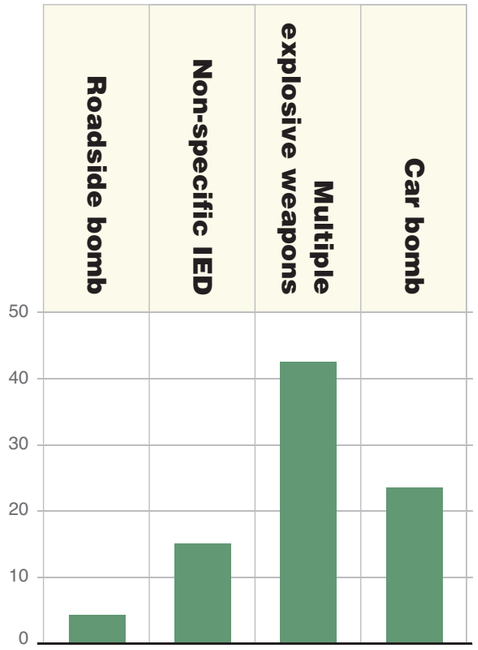
The site in central Beirut, Lebanon where 23 civilians were killed by two suicide bombers outside the Iranian Embassy on 19 November 2013. (REUTERS/Hasan Shaaban)

TYPES OF IED

As *Figure 12* shows, attacks involving a number of different IEDs in a single incident predictably caused the highest levels of harm. An average of 43 civilian casualties occurred in attacks involving a combination of different devices. In Somalia, on 7 September, a car bomb outside a popular restaurant in Mogadishu ripped the roof off the building. A suicide bomber then detonated his device as people gathered at the scene. Fifteen people were killed and dozens more were injured.[123]

Larger, vehicle-borne bombs, commonly referred to as car bombs in reports, also caused higher levels of civilian harm. Car bombs caused an average of 24 civilian casualties in each incident compared to the average of four civilian casualties per incident caused by roadside bombs. In part this is because vehicle-borne IEDs can carry larger quantities of explosive materials so that their harmful effects are spread over a wider area. Car bombs were also used more frequently in populated areas where civilians are more likely to be present; 70% of incidents occurred in these locations compared to 37% of roadside bombs.

Figure 12 **Average civilian casualties by IED type**



On 11 May two car bombs detonated in the Turkish town of Reyhanli near the Syrian border killing at least 46 people and injuring 140 others. The first bomb exploded outside the town hall with the second detonating minutes later near a post office. Several of those killed were Syrian refugees. The bombs damaged almost 500 shops and 300 homes according to an investigation by the Turkish government.[124]

Not only did roadside bombs cause a lower average number of casualties in each incident in which they were used in, but also a lower proportion of the resulting casualties were civilians. Fifty-nine per cent of roadside bomb casualties were civilians compared to 87% for car bombs and other IED types.

They could however, still cause significant harm to civilians. For example, on 27 October a roadside bomb in Afghanistan's Ghazni province killed 18 people including 14 women and one child travelling in a minibus to a wedding party.[125]

ACTIVATION METHODS[126]

Just under a fifth of IED incidents were reported to involve suicide bombers. In part the large proportion of attacks involving suicide may be due to media outlets focusing on this detail and underreporting other forms of detonation. However, these can be extremely destructive attacks with a huge impact on civilians.

In total AOAV recorded 271 incidents of IEDs being detonated by suicide bombers. Over 6,300 civilians were killed and injured in these attacks, a 17% increase in the previous year.[127]

AOAV recorded suicide bombings in 19 different countries including China, Niger and Turkey. The majority of attacks occurred in Iraq.[128] In December, Libya witnessed its first ever suicide bombing when at least seven people were killed by a blast at a checkpoint near Benghazi.[129]

Of the suicide bomb casualties recorded by AOAV, 75% were civilians. This contrasts with 73% of casualties from remotely-detonated IEDs, 80% for victim activated and 93% for timed detonation.

There were an average of 31 people killed and injured in each attack involving suicide bombers. This is far higher than for either victim-activated IEDs (six), timed detonation (18) and remote detonation (11). These numbers suggest that suicide bombing is a form of attack that can both be precisely timed to hit military or police targets and yet is also able to infiltrate dense crowds of civilians inflicting maximum casualties.

Civilians gather at the site of a suicide bomb attack in the village of Mwafaqiya in Iraq. Eleven civilians died in the bombing on 17 October 2013. (REUTERS/Stringer)

Conclusion

2013 is the second consecutive year in which AOAV has recorded a rise in the number of civilian casualties from explosive weapons, up 15% from 2012.

The proportion of civilians among the total number of victims also rose. In 2013, 82% of recorded casualties were civilians, up from 78%.

Once again, however, civilians in 2013 made up the vast majority of casualties when explosive weapons were used in populated areas. The data presented in *Explosive Events* reflects a world where explosive weapons, both manufactured and improvised, are used on a daily basis in places where civilians should feel safe.

But 2013 also saw a growing engagement to back a call for action led by, among others, the UN Secretary-General Ban Ki-moon.[130]

Countries from around the world have lined up to condemn and object to the continuing bombing of civilians.[131] On 8 May 2013, 107 countries endorsed a UN General Assembly resolution that explicitly and strongly condemned the use of heavy weapons, including shelling, ballistic missiles and other such weapons in population centres in Syria.[132]

In September 2013 the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) convened a meeting in London that brought together experts on the impact of explosive weapons. This was the first meeting of its kind and signalled the development of a process to reduce the humanitarian harm from explosive weapons in populated areas. It laid out a roadmap for future action.

More needs to be done, however, to protect civilians from the impact of explosive weapons. AOAV is a founding member of the International Network on Explosive Weapons (INEW). Together with other INEW members, AOAV calls on states and users of explosive weapons, as a matter of urgency:

- To acknowledge the unacceptable harm caused by the use of these weapons in populated areas;
- To strive to avoid this harm by reviewing and strengthening national policies and practices;
- To work towards fulfilling the rights of victims of explosive violence; and
- To develop stronger international standards, including prohibitions and restrictions on the use of explosive force.

Recommendations

- All users of explosive weapons should refrain from using them in populated areas.
- 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.
- The United Nations Security Council should call upon parties to refrain from using explosive weapons in populated areas. Whenever relevant Security Council resolutions should include specific recommendations for civilian protection from such use of these weapons, building on recent examples in Syria, Libya and Cote d'Ivoire.[133]
- States should publically condemn any use of explosive weapons in populated areas. International organisations should also continue to build up a common language around this issue by publically condemning the use of explosive weapons in populated areas.
- States, international organisations and civil society should work together to further a process to develop a political commitment and guidance to reduce the impact on civilians of the use of explosive weapons in populated areas, in line with the recommendations of the UN Secretary-General.[134]
- Recognising the large number of civilian casualties caused by IEDs, all parties should work on measures which address the high level of humanitarian harm caused by these weapons.
- States and users of explosive weapons should work towards the full realisation of the rights of victims, including those killed and injured, their families, and affected communities. They should strive to ensure the timely and adequate provision of needed services for the recovery, rehabilitation, and inclusion of victims of explosive violence, without discrimination.
- States, international organisations, and non-governmental organisations should gather and make available data on the impacts of explosive weapons. Data on the casualties of explosive violence should be disaggregated so that stakeholders can accurately assess the impact of explosive weapons. More should also be done to protect and support people and organisations who gather such data, including providing access to journalists on the ground.
- More research is needed to better understand the long-term harm from explosive weapons, including on the impact of these weapons on vital infrastructure and services, public health, economic livelihoods, and environmental contamination.

Methodology

AOAV uses a methodology adapted from an incident-based methodology used by Landmine Action and Medact in 2009 which in turn was based on the Robin Coupland and Nathan Taback model.[135] Data on explosive violence incidents is gathered from English-language media reports on the following factors: the date, time, and location of the incident; the number and circumstances of people killed and injured; the weapon type; the reported user and target; the detonation method and whether displacement or damage to the location was reported. AOAV does not attempt to comprehensively capture all incidents of explosive violence around the world but to serve as a useful indicator of the scale and pattern of harm. **No claims are made that this data captures every incident or casualty of explosive violence in 2013.**

SELECTING INCIDENTS

An RSS reader is used to scan Google News for key terms which relate to explosive weapon use: air strike* artillery* bomb* bombing* cluster bomb* cluster munitions* explosion* explosive* grenade* IED* mine* missile* mortar* rocket* shell.*

At least one casualty from an explosive weapon must be reported in order for an incident to be recorded. Incidents with no clear date or which merely give a location as a country are excluded, as are incidents which occur over a period of more than 24 hours (e.g. 150 people killed by shelling over the last week). Casualty numbers must be clearly stated; reports which only describe 'several' or 'numerous' cannot be recorded. When there are multiple sources for the same incident, those which provide the most detail or most recent casualty information are selected.

SOURCES

AOAV uses a wide range of English-language news sources, many of which are translated by the publisher. In total there were 436 different sources used in 2013, with the ten most used being *The Associated Press* (used as a either the first or second source for 724 incidents in 2013), *Reuters* (297), *Agence France-Press* (283), *Press TV* (226), *Xinhua* (224), *NINA* (181), *Al Jazeera* (151), *The International News* (122), *The Express Tribune* (116), *DAWN* and *BBC* (both 114).

RECORDING GUIDELINES

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

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

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

Populated area: Incidents are designated as occurring in populated areas likely to contain concentrations of civilians if: a) It is stated in the source (e.g. a busy street, a crowded market); b) If an incident occurs in or near a pre-defined location which is likely to contain concentrations of civilians e.g. commercial premises, entertainment venues, hospitals, hotels, encampments (containing IDPs, refugees, nomads), markets, places of worship, public gatherings, public buildings, public transport, schools, town centres, urban residential neighbourhoods, villages/ compounds. This definition of a populated area is based on Protocol III of the 1980 Convention on Certain Conventional Weapons (CCW) which defines concentrations of civilians as: *"any concentrations of civilians, be it permanent or temporary, such as in inhabited parts of cities, or inhabited towns or villages, or as in camps or columns of refugees or evacuees, or groups of nomads."*[136]

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

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

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

LIMITATIONS

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

The methodology is designed to capture distinct incidents of explosive violence with a clear date and location. In some contexts of explosive violence, particularly during intense armed conflict, casualties cannot be assigned to specific incidents but a total number is reported as the result of a period of days. These casualties cannot be included in the dataset. This limitation is discussed with specific reference to the conflict in Syria on page 14.

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

On a number of occasions firearms were also reported as having been used alongside explosive weapons. While AOAV always tries to determine the casualties specifically caused by explosive weapons, in these incidents new sources are not always able to clarify which casualties were caused by which weapon type, particularly in incidents that involved large numbers of casualties. It is therefore possible that some casualties in these incidents may not have been caused by explosive weapons.[137]

AOAV is focused on capturing the harm caused by explosive weapons at the time of use. Explosive weapons that fail to explode as intended can linger in the form of explosive remnants of war (ERW) for years, if not decades, to come. In 2013 AOAV recorded 207 civilian casualties from unexploded or abandoned ordnance. These casualties occurred in 27 different countries and territories. The actual number of casualties from ERW is likely to be far higher.[138]

Poorly secured or stockpiled explosive weapons can also cause unintended harm to civilians. AOAV recorded ten stockpile explosions in nine different countries around the world in 2013.[139]

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 335 incidents out of 2,430 reported damage to a location. Effects which are the result of cumulative levels of explosive violence, for instance communities displaced by heavy shelling or continued insecurity, cannot be fully represented by this research.

Notes

1 Secretary-General Ban Ki-moon, "Secretary-General's remarks to Security Council Open Debate on the Protection of Civilians in Armed Conflict," 12 February 2013, www.un.org/sg/statements/index.asp?nid=6597 (accessed 22 April 2014).

2 The characteristics of explosive weapons are further detailed in Maya Brehm and John Borrie, "Explosive Weapons: Framing the Problem," Background Paper No.1. of the Discourse on Explosive Weapons (DEW) project, UNIDIR, www.inew.org/site/wp-content/uploads/2011/07/DEW-paper-No-1.pdf (accessed 4 April 2014).

3 For more information on the varied long-term harm caused by explosive weapons see Henry Dodd, "Anatomy of a suicide bombing, Moon Market attack, Lahore, Pakistan," Action on Armed Violence, December 2013, http://aoav.org.uk/wp-content/uploads/2014/04/Anatomy-of-a-suicide-bombing-Moon-market-Lahore-Pakistan.pdf; and Robert Perkins, "Syria's Shockwaves: The consequences of explosive violence for Syrian refugees," December 2013 http://aoav.org.uk/wp-content/uploads/2014/04/Syrias-shockwaves-the-consequences-of-explosive-violence-for-Syrian-refugees.pdf

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

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, www.icrc.org/ihl.nsf/FULL/515 (accessed 10 March 2014). AOAV's guidelines for recording an area as populated are included in the Methodology.

6 The category of 'mines' includes both antipersonnel landmines and antivehicle mines. In many incidents, news sources often report what were likely actually victim-activated IEDs as 'mines' or in ambiguous language and it is not clear in many incidents whether these incidents involve manufactured or improvised explosive weapons. For detailed information on the incidents of antipersonnel and other types of mine use around the world see International Campaign to Ban Landmines and Cluster Munition Coalition, *The Landmine and Cluster Munition Monitor 2013,* October 2013, www.the-monitor.org/index.php/publications/display?url=lm/2013/ (accessed 11 March 2014).

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

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

9 AOAV does not employ a single strictly technical definition of an artillery shell in its categorization of media reporting, and relies on definitions based in part on International Ammunition Technical Guideline, "Glossary of terms, definitions and abbreviations," *United Nations Office for Disarmament Affairs,* IATG 01.40:2011(E) 1st Edition (2001-10-01), www.un.org/disarmament/convarms/Ammunition/IATG/docs/IATG01.40-Glossary_and_Definitions(V.1).pdf (accessed 7 March 2014); and NATO, "Glossary of terms and definitions concerning the safety and suitability for service for munitions, explosives and related products," AOP-38, April 2002, www.nato.int/structur/ac/310/pdf/aop-38-3.pdf (accessed 12 March 2014).

10 *"Ballistic missiles are powered initially by a rocket, or several rockets in stages. After burn out of the last stage, the missile follows a high-arched, unpowered, parabolic trajectory to the target."* Definition taken from The Center for Arms Control and Non-Proliferation, Fact Sheet: U.S. Ballistic Missile Defense, July 2012, http://armscontrolcenter.org/issues/missiledefense/articles/fact_sheet_us_ballistic_missile_defense/ (accessed 11 April 2014).

11 Mortars are generally indirect-fire weapons which fire projectiles over a high-trajectory and do not depend on a line-of-sight. Erich G. Berman, Pierre Gobinet and Jonah Leff, "Mortars," *Small Arms Survey,* Research Notes - Number 2, February 2011, www.smallarmssurvey.org/fileadmin/docs/H-Research_Notes/SAS-Research-Note-2.pdf (accessed 1 March 2014).

12 In 2012, AOAV recorded 27,025 civilian casualties.

13 In 2012, 78% of all recorded casualties were civilians.

14 AOAV defines an incident as the use of explosive weapons that caused at least one casualty and took place in a 24-hour period.

15 A populated area is on that is likely to contain concentrations of civilians. The full definition and guidelines for recording an area as being populated is detailed on pages 34-35.

16 In 2012 civilians made up 91% of casualties in populated areas, and 32% of casualties elsewhere.

17 In the two previous years in which AOAV monitored information on casualties of explosive violence, 2011 and 2012, there was no month in which more than 3,000 civilian deaths and injuries could be recorded.

18 The 12 newly-affected countries are; Croatia, Estonia, Ethiopia, Greece, Japan, Niger, Papua New Guinea, Senegal, South Korea, Tanzania, Tunisia and Uganda.

19 41% of civilian casualties from explosive violence in 2013 were recorded by AOAV in Iraq.

20 The term 'most-affected' is used in this context to refer to highest numbers of civilian casualties.

21 98% of the 272 civilian casualties recorded in the US were a result of the Boston bombings on 15 April 2013, while 30% of civilian casualties in India in 2013 came in two simultaneous IED explosions in Hyderabad on 21 February 2013. Deborah Kotz, "Injury toll from Marathon bombs reduced to 264," *The Boston Globe,* 24 April 2013, www.bostonglobe.com/lifestyle/health-wellness/2013/04/23/number-injured-marathon-bombing-revised-downward/NRpaz5mmvGquP7KMA6XsIK/story.html, (accessed 19 March 2014); "Twin blasts rock Hyderabad," *Niti Central*, 22 February 2013, www.niticentral.com/?p=48933 (accessed 19 March 2014).

22 In Gaza, Israeli air strikes in response to rocket attacks in October and November 2012 killed and injured nearly 500 people. Reported civilian casualties from explosive weapons dropped in Gaza by 98% (641 civilian casualties in 2012 compared to 11 in 2013), and in Israel by 85% (93 civilian casualties in 2012 compared to 14 in 2013). Civilian casualties in Nigeria fell by almost 86%, from 1,017 in 2012 to 140 in 2013. Nigeria in 2012 was hit by multiple IED attacks, largely carried out in Northern provinces by militant group Boko Haram. As AOAV's research in the country reveals, Nigeria remains extremely volatile. The downturn in casualties from explosive weapons in 2013 is not thought to be reflective of a decrease in insecurity in the north of the country. "The Violent Road: An overview of armed violence in Nigeria," National Working Group on Armed Violence and Action on Armed Violence, 2012, http://aoav.org.uk/wp-content/uploads/2013/12/The-Violent-Road1.pdf (accessed 18 March 2014).

23 Of countries and territories that had at least one civilian casualty from explosive violence in 2012. This analysis does not include newly-affected countries such as Tanzania, where no civilian casualties had been recorded the previous year.

24 Non-state users of explosive violence in Egypt included Ansar Beit al-Maqdis and the Al-Furqan Brigade.

25 Erin Cunningham, "Car bomb kills 15 at Egyptian security headquarters north of Cairo," *The Washington Post,* 24 December 2013, www.washingtonpost.com/world/car-bomb-kills-12-at-egyptian-security-headquarters-north-of-cairo/2013/12/24/4b19dd80-6c87-11e3-a523-fe73f0ff6b8d_story.html (accessed 18 March 2014).

26 Based on AOAV analysis of data collected by the Chicago Project on Security and Terrorism (CPOST), *Suicide Attack Database,* The University of Chicago, http://cpost.uchicago.edu/search.php (accessed 18 March 2014).

27 AOAV recorded 182 civilian casualties from explosive weapons in Lebanon in 2012.

28 Eighty-nine per cent of civilian casualties in Lebanon were recorded from IED attacks in 2013.

29 See for example, "Car bombing rocks Hezbollah bastion in Beirut," *Al Jazeera,* 16 August 2013, www.aljazeera.com/news/middleeast/2013/08/20138151521401 88564.html (accessed 20 March 2014), and Laila Bassam and Erika Solomon, "Suicide bombings kill 23 near Iran embassy in Beirut," *Reuters,* 19 November 2013, www.reuters.com/article/2013/11/19/us-lebanon-blast-idUS-BRE9AI08G20131119, (accessed 20 March 2014).

30 Samir Darwish, quoted by Fernande Van Tets, "Lebanon: Death toll in twin mosques bombings in Tripoli rises to 47," *The Independent,* 24 August 2013, www.independent.co.uk/news/world/middle-east/lebanon-death-toll-in-twin-mosques-bombings-in-tripoli-rises-to-47-8782812.html, (accessed 20 March 2014).

31 AOAV recorded 247 casualties of explosive violence in Mali in 2013, 17% of whom were civilians (43 deaths and injuries).

32 Serge Daniel, "Mali hit by first suicide bombing," *AFP* posted in *Modern Ghana,* 8 February 2013, www.modernghana.com/news/444494/1/mali-hit-by-first-suicide-bombing.html (accessed 11 April 2014).

33 The category of 'mines' includes both antipersonnel landmines and anti-vehicle 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 ICBL-CMC, *The Landmine and Cluster Munition Monitor 2013,* November 2013, www.the-monitor.org/index.php/publications/display?url=lm/2013/ (accessed 20 March 2014). Landmine and Cluster Munition Monitor, "Mali: Casualties and Victim Assistance," Last updated 7 October 2013, www.the-monitor.org/index.php/cp/display/region_profiles/theme/2821 (accessed 20 March 2014).

34 "Four killed as truck hits landmine in north Mali," *AFP,* posted by *Reliefweb,* 4 November 2013, http://reliefweb.int/report/mali/four-killed-truck-hits-landmine-north-mali (accessed 20 March 2014).

35 In 2012, 74% of incidents without a clear perpetrator involved the use of improvised explosive devices.

36 The full list of state and multi-state forces that caused at least one casualty through explosive violence in 2013 is; Afghanistan, Algeria, Azerbaijan, Burma, Democratic Republic of Congo, Egypt, France, India, Iran, Israel, Kenya, Malaysia, NATO ISAF, Nigeria, Pakistan, South Korea, South Sudan, Syria, Tunisia, USA, and Yemen.

37 They included the Democratic Republic of Congo, whose troops fought battles with M23 rebels, and France, who launched an intervention in Mali in January 2013. The full list includes; Algeria, Azerbaijan, Democratic Republic of Congo, France, Iran, Malaysia, Nigeria, South Korea, South Sudan, and Tunisia.

38 AOAV recorded 52 different non-state actors named in reports as having used explosive weapons in 2013; Afghanistan (Hizb-I Islami and the Taliban), Democratic Republic of the Congo (M23 rebels), Egypt (Al Furqan Brigade and Ansar Beit al-Maqdis), Gaza (Hamas), Greece (Conspiracy of Cells of Fire, and Wild Freedom and Instigators of Social Explosion), India (Jammu & Kashmir Freedom Force, Naxal groups, People's Liberation Army, RPF, ULFA, UNLF), Iraq (al-Mukhtar Army, Islamic State of Iraq), Lebanon (Abdullah Azzam Brigades, Aisha Umm-al Mouemeneen, Hezbollah, Omar al-Farouq Brigades, Tripoli neighbourhood militias), Libya (Misrata militia), Malaysia (Sulu army), Mali (Al Qaeda in the Maghreb, Movement for Oneness and Jihad), Nigeria (Ansaru, Boko Haram), Pakistan (Ansarul Mujahideen, Baloch Republican Army, Lashkar e-Balochistan, Lashkar e-Jhangvi, Tehrik-i-Taliban Pakistan, United Baloch Army), Philippines (Abu Sayyaf, Bangsamoro Islamic Freedom Fighters, MNLF, New People's Army), Rwanda (FDLR), Somalia (Al Shabaab), Sudan (Abbala militants, SPLM-N), Syria (Al-Nusra Front, Direh al-Aasmeh, Free Syrian Army, Islamic Ahrar al-Sham, Islamic State of Iraq and the Levant, Qalamoun Liberation Front), Turkey (DHKP-C, Kurdish militias), Uganda (M23), United Kingdom (Loyalist Volunteer Force), Yemen (Al Qaeda in the Arabian Peninsula). This is in addition to groups just referred to as 'militants' and 'rebels', and actors seemingly acting in an individual capacity. Many more non-state armed actors are likely to have used explosive weapons in 2013.

39 The most prolific non-state group users of explosive weapons in 2012, as recorded by AOAV, were; Islamic State of Iraq (ISI), Taliban, Syrian rebel groups, Tehrik-i-Taliban Pakistan, Al-Shabaab, and Boko Haram.

40 For example, on 3 June 2013 the Red Cross reported that there were approximately 1,500 wounded people trapped inside the city of Qusair in Homs province, where there had been heavy shelling for weeks, and where airstrikes were reported that day. Without a specific number, date or cause, these casualties could not be recorded by AOAV, although it is likely that many were related to the intensive explosive violence in the city. "Syria: Humanitarian aid cannot enter Qusair until fighting over," *The Daily Star (Lebanon),* 03 June 2013, www.dailystar.com.lb/News/Middle-East/2013/Jun-03/219237-syria-humanitarian-aid-cannot-enter-qusair-until-fighting-over.ashx#axzz2yaygn1uB (accessed 11 April 2014).

41 Robert Perkins, *"Why does no-one talk about Syria's other casualties?",* Action on Armed Violence, 16 September 2013, http://aoav.org.uk/2013/why-does-no-one-talk-about-syrias-other-casualties/, (accessed 21 March 2013).

42 The Violations Documentation Center (VDC), www.vdc-sy.info. Explosive weapons are identified by the VDC as either 'Explosion', 'Shelling', 'Warplane shelling.' AOAV analysis reveals that 15,711 civilian deaths were a result of explosive weapons. All data accurate as of 10 March 2014.

43 92% of fatalities of explosive violence that were recorded by the VDC as of 10 March 2014, and 88% of AOAV's casualty dataset in 2013 were civilians.

44 Notably, the vast majority of those incidents in Syria where only civilian deaths were reported took place in populated areas (81%). By comparison, in Iraq only 25% of incidents without reported civilian injuries took place in populated areas. This has huge bearing when considering the likely humanitarian impact of explosive weapons. AOAV recorded almost 2,000 civilian deaths in these incidents in Syria, while only 117 civilian deaths were recorded in comparable incidents in Iraq.

45 Paulo Sergio Pinheiro, Chair of the Independent International Commission of Inquiry on the Syrian Arab Republic, Address to the United Nations General Assembly Plenary Session, New York, 29 July 2013, www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=13596&LangID=E (accessed 17 April 2014).

46 "Wave of attacks kills at least 57 in Iraq," The *Associated Press,* posted by *NDTV,* 20 May 2013, www.ndtv.com/article/world/wave-of-attacks-kills-at-least-57-in-iraq-369038?curl=1378728086 (accessed 27 March 2013) "Two blasts at Iraqi Sunni mosque kill 43," *Reuters,* 17 May 2013, www.reuters.com/article/2013/05/17/us-iraq-blast-idUSBRE94G0BW20130517 (accessed 27 March 2014).

47 Tim Arango, "Some Iraqis Doubt Benefits of First Vote Since U.S. Departure," *The New York Times,* 20 April 2013, www.nytimes.com/2013/04/21/world/middleeast/iraqs-first-vote-since-us-exit-is-mostly-calm.html?ref=elections&_r=0 (accessed 27 March 2014); International Crisis Group, "Make or Break: Iraq's Sunnis and the State," 14 August 2013, www.crisisgroup.org/en/regions/middle-east-north-africa/iraq-iran-gulf/iraq/144-make-or-break-iraq-s-sunnis-and-the-state.aspx (accessed 27 March 2014).

48 AOAV defines a mass casualty incident as one where at least 25 civilians are killed and injured.

49 Patrick Cockburn, "Banned in Baghdad: the cars that are insurgents' weapon of choice," *The Independent,* 1 June 2013, www.independent.co.uk/news/world/middle-east/banned-in-baghdad-the-cars-that-are-insurgents-weapon-of-choice-8640169.html (accessed 27 March 2014).

50 Patrick Cockburn, "'The civil war in Iraq has already begun': Politician claims conflict has started and wans it will be 'worse than Syria'," *The Independent,* www.independent.co.uk/news/world/middle-east/the-civil-war-in-iraq-has-already-begun-politician-claims-conflict-has-started-and-warns-it-will-be-worse-than-syria-8601732.html (accessed 27 March 2014).

51 In 2013 AOAV recorded 79 incidents in markets and 41 in places of worship.

52 Iraq Body Count, "The Trenching of Faults: Iraq 2013," 1 January 2014, www.iraqbodycount.org/analysis/beyond/2013/ (accessed 27 March 2014).

53 "Iraq's annual death toll highest in five years – UN," *BBC,* 1 January 2014, www.bbc.co.uk/news/world-middle-east-25568687 (accessed 28 March 2014).

54 "Bombs hit favored Ramadan hangouts in Iraqi cities," *AFP,* 22 July 2013, www.arabnews.com/news/458772 (accessed 27 March 2013).

55 AOAV recorded 2,905 casualties in markets in 2012. 2,714 were civilians (93%).

56 AOAV recorded 1,836 civilian casualties in places of worship in 2012, meaning that there was a 91% increase in 2013.

57 A target could only be ascribed in 21% of incidents recorded by AOAV. Targets are identified if declared by a user, reported clearly in a source, or when the specific contextual conditions of use indicate a particular target.

58 Although responsibility for civilian casualties is disputed, the UN says that their investigation indicated that the civilian deaths and injuries resulted from *"massive blast wave/shock waves which collapsed the roof sheltering the women and children."* United Nations Assistance Mission in Afghanistan, "Afghanistan Annual Report 2013: Protection of Civilians in Armed Conflict," February 2014, http://unama.unmissions.org/Portals/UNAMA/human%20rights/Feb_8_2014_PoC-report_2013-Full-report-ENG.pdf (accessed 3 April 2014).

59 Alissa J. Rubin, "Commander Denies U.S. to Blame in Afghan Deaths," *The New York Times,* 13 May 2013, www.nytimes.com/2013/05/14/world/asia/general-says-us-not-to-blame-in-death-of-afghan-civilians.html?pagewanted=1&_r=3&ref=world&pagewanted=all& (accessed 3 April 2014).

60 The United Nations Assistance Mission to Afghanistan, as a result of their investigation, said, *"UNAMA notes that the amount of air delivered munitions used during and after the military operation appeared to be excessive and disproportionate to the concrete and direct military advantage anticipated."* United Nations Assistance Mission in Afghanistan, "Afghanistan Annual Report 2013: Protection of Civilians in Armed Conflict," February 2014, http://unama.unmissions.org/Portals/UNAMA/human%20rights/Feb_8_2014_PoC-report_2013-Full-report-ENG.pdf (accessed 3 April 2014).

61 Matthew Rosenberg and Sangar Rahimi, "Attack on U.S. Military Vehicles Kills at Least 16 in Kabul," *The New York Times,* 16 May 2013, www.nytimes.com/2013/05/17/world/asia/kabul-car-bomb-attack.html (accessed 03 April 2014).

62 The age or gender of at least one casualty was reported in just 503 incidents (21% of total). In 43 of those incidents children and women were reported to be among the casualties, but without any further information available on specific numbers.

63 Dr. Marzio Babille, UNICEF Representative to Iraq, "UNICEF and UNESCO condemn bomb attack near school in Kirkuk," Baghdad, 13 March 2013, www.unicef.org/iraq/media_8086.html (accessed 17 April 2014).

64 The survey, carried out by Oxford Research Group, found that explosive weapons killed 7,557 (71%) of the 10,586 children whose specific cause of death was recorded in Syria. Air bombardment was given as the cause of death for 2,008 of the children reported killed by explosive weapons. Hamit Dardagan and Hana Salama, "Stolen Futures: The hidden toll of child casualties in Syria," Oxford Research Group, November 2013, www.oxfordresearchgroup.org.uk/publications/briefing_papers_and_reports/stolen_futures (accessed 4 April 2014).

65 In 2012 AOAV recorded 39 incidents in schools, in which there were 570 reported civilian casualties.

66 United Nations Children's Fund (UNICEF), "UNICEF and UNESCO condemn bomb attack near school in Kirkuk," 13 March 2013, www.unicef.org/iraq/media_8086.html (accessed 4 April 2014).

67 Kerry Smith, "Devastating Impact: Explosive weapons and children," Save the Children, February 2011, www.savethechildren.org.uk/resources/online-library/devastating-impact-explosive-weapons-and-children (accessed 5 April 2014).

68 In addition to the weapon types presented in the following sections, casualties also occurred in incidents where mines were reported, where the launch method was unclear, or where more than one launch method was identified within the same incident

69 AOAV recorded 2,518 civilian casualties from air-delivered explosive weapons in 2012, 9% of the total.

70 Afghanistan, Algeria, Egypt, Gaza, Lebanon, Mali, Nigeria, Pakistan, Somalia, South Sudan, Sudan, Syria, and Yemen.

71 Civilian casualties recorded from air-launched explosive weapons fell by 60% in Gaza and by 6% in Afghanistan.

72 AOAV recorded a similar proportion of incidents in populated areas in 2012 (47%).

73 The first instance of a reported barrel bomb causing casualties was identified in September 2012. "Syria warplane 'bombs Raqqa petrol station queue', *BBC,* 20 September 2012, www.bbc.co.uk/news/world-middle-east-19665075 (accessed 17 March 2013).

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

75 Just five barrel bomb attacks were recorded in 2012. In 2013 AOAV recorded 19 incidents, mostly involving day-long bombardments with multiple bombs.

76 Foreign Secretary William Hague MP, "Foreign Secretary concerned at escalating violence in Syria and the deepening humanitarian crisis," 23 December 2013, www.gov.uk/government/news/foreign-secretary-condemns-syrian-regime-aerial-attacks-on-civilians, (accessed 26 March 2014).

77 Analysis of satellite images from Aleppo by Human Rights Watch identified 340 distinct damage sites between early November and 20 February 2014, almost all thought to be the result of barrel bombs. Human Rights Watch, "Syria: Unlawful Air Attacks Terrorize Aleppo," 24 March 2014, www.hrw.org/news/2014/03/24/syria-unlawful-air-attacks-terrorize-aleppo (accessed 26 March 2014).

78 "Death toll rises in Syria bombing raid," *Al Jazeera,* 16 December 2013, www.aljazeera.com/video/middleeast/2013/12/death-toll-doubles-syria-bombing-raid-2013121684934841756.html (accessed 27 March 2014).

79 2008 Convention on Cluster Munitions, www.icrc.org/ihl.nsf/INTRO/620?OpenDocument (accessed 18 March 2014).

80 Noura, speaking with Donatella Rivera, "'Why is the world doing nothing?'- cluster bomb attack by Syrian army in Aleppo," Amnesty International, 2 March 2013, http://livewire.amnesty.org/2013/03/02/why-is-the-world-doing-nothing-cluster-bomb-attack-by-the-syrian-army-in-aleppo/ (accessed 28 April 2014).

81 AOAV recorded 11 incidents in Syria where casualties were reported from the use of cluster munitions.

82 The only incident where casualties were recorded from ground-launched cluster munitions were reported to result from the Sakr rockets. For more information on the Sakr rockets see Robert Perkins and Sarah Leo, "Syria's 'Dirty Dozen': The Sakr," Action on Armed Violence (AOAV), 23 September 2013, http://aoav.org.uk/2013/syrias-dirty-dozen-sakr/ (accessed on 14 April 2014).

83 Donatella Rivera, "Why is the world doing nothing?'— cluster bomb attack by the Syrian army in Aleppo," Amnesty International, 2 March 2013, http://livewire.amnesty.org/2013/03/02/why-is-the-world-doing-nothing-cluster-bomb-attack-by-the-syrian-army-in-aleppo/ (accessed 27 March 2014).

84 *"The General Assembly […] strongly condemns the continued escalation in the use by the Syrian authorities of heavy weapons, including indiscriminate shelling from tanks and aircraft, and the use of ballistic missiles and other indiscriminate weapons against population centres, as well as the use of cluster munitions."* United Nations General Assembly, "The situation in the Syrian Arab Republic," Resolution A/67/L.63, 8 May 2013, www.un.org/ga/search/view_doc.asp?symbol=A/67/L.63 (accessed 27 March 2014).

85 "Morning airstrike kills 16 at high school in Raqqa," *The Daily Star (Lebanon),* 30 September 2013, www.dailystar.com.lb/News/Middle-East/2013/Sep-30/233006-morning-airstrike-kills-16-at-high-school-in-raqqa.ashx#axzz2trMja6HL (accessed 25 March 2014).

86 The ODAB 500 PM has a 30m effective blast zone against infantry in the open. Robert Hewson (Ed.), Jane's "Air-Launched Weapons," Issue 49, 2007, p. 319.

87 Human Rights Watch, "Syria: Fuel-Air Bombs Strike School," 1 October 2013, www.hrw.org/news/2013/10/01/syria-fuel-air-bombs-strike-school (accessed 25 March 2013).

88 Globally, AOAV recorded 472 casualties from drone strikes in 2013, down from 627 in 2012.

89 The Bureau of Investigative Journalism, for example, identified 27 drone strikes in Pakistan in 2013, resulting in between 108-194 deaths. AOAV recorded 148 reported deaths in Pakistan. The Bureau of Investigative Journalism, "Obama 2013 Pakistan drone strikes," 3 January 2013, www.thebureauinvestigates.com/2013/01/03/obama-2013-pakistan-drone-strikes/ (accessed 27 March 2014).

90 "Air strike kills 15 civilians in Yemen by mistake-officials," *Reuters,* 12 December 2013, www.reuters.com/article/2013/12/13/yemen-strike-idUSL6N0JS00S20131213 (accessed 27 March 2014) and Human Rights Watch, "A Wedding that Became a Funeral," February 2014, www.hrw.org/sites/default/files/reports/yemen0214_ForUpload_0.pdf (accessed 27 March 2014).

91 Mohammad al-Raqqawi, cited in "Morning airstrike kills 16 at high school in Raqqa," *The Daily Star (Lebanon),* 30 September 2013, www.dailystar.com.lb/News/Middle-East/2013/Sep-30/233006-morning-airstrike-kills-16-at-high-school-in-raqqa.ashx#axzz2trMja6HL (accessed 25 March 2014).

92 For the full list of recording categories used by AOAV see pages 7-8.

93 In 2012, 25% of recorded civilian casualties from explosive weapons were caused by ground-launched weapons.

94 AOAV recorded a similar dynamic in 2012 when civilians made up 86% of casualties from explosive weapons.

95 Twenty-two per cent. Non-state actors were also responsible for 22%, while in the remaining 56% of incidents the user was unknown.

96 *Figure 9* shows only percentages for ground-launched weapons that were reported to have caused more than 50 civilian casualties. Tank shells are therefore not included, having caused 47 recorded civilian casualties in 2013.

Although ground-launched missiles can include a wide range of weapons, the graph and following analysis focuses only on ballistic missiles, which were of particular concern in 2013 because of the large numbers of civilian casualties that they caused.

97 Henry Dodd and Robert Perkins, "An Explosive Situation: Monitoring Explosive Violence in 2012," *Action on Armed Violence,* April 2013, http://aoav.org.uk/wp-content/uploads/2013/06/An-Explosive-Situation-Explosive-Violence-in-2012.pdf (accessed 4 April 2014).

98 AOAV recorded a 35% increase in the number of incidents in which mortars were reported in 2013, and a 33% increase in the number of people killed and injured (civilians and armed actors).

99 AOAV recorded 1,391 civilian casualties from mortars in 2012.

100 In 2013 AOAV recorded 1,553 civilian casualties from mortars in Syria, up from 732 in 2012.

101 Oliver Holmes, "Mortar strike kills 15 in Damascus University: state media," *Reuters,* 28 March 2013, www.reuters.com/article/2013/03/28/us-syria-crisis-students-idUSBRE92R0E020130328 (accessed 24 March 2013).

102 Amnesty International, "Deadly mortar strike on Damascus University- Indiscriminate attacks must end," 28 March 2013, www.amnesty.org/en/for-media/press-releases/deadly-mortar-strike-damascus-university-indiscriminate-attacks-must-end-20 (accessed 24 March 2013).

103 The US State Department said that a ballistic missile was fired in rural Aleppo in December 2012. This however was not thought to have caused casualties. "Syria 'fires Scud-type missiles at rebels,'" *BBC,* 12 December 2012, www.bbc.co.uk/news/world-middle-east-20705519, (accessed 10 March 2014).

104 Surface-to-surface ballistic missiles have often been referred to as Scuds, though it is a much broader grouping. Syria is known to have deployed several of these long-range surface-to-surface missiles. For more information see Robert Perkins and Sarah Leo, "Syria's 'Dirty Dozen': The Luna-M/FROG-7,' *Action on Armed Violence,* 23 September 2013, http://aoav.org.uk/2013/syrias-dirty-dozen-luna-mfrog-7/ (accessed on 21 March 2014).

105 Robert Perkins and Sarah Leo, "Syria's 'Dirty Dozen': The Luna-M/Frog-7,' *Action on Armed Violence,* 23 September 2013, http://aoav.org.uk/2013/syrias-dirty-dozen-luna-mfrog-7/ (accessed on 21 March 2014).

106 Nuclear Threat Initiative, "Syria Missiles," Last updated: August 2012, www.nti.org/media/pdfs/syria_missiles_table.pdf?_=1344557599_, (accessed 10 March 2014).

107 Statement by Victoria Nuland, Spokesperson for U.S. Department of State, "United States Condemns Attacks on Aleppo," 24 February 2013, http://iipdigital.usembassy.gov/st/english/texttrans/2013/02/20130224142945.html#axzz2vlcsAkcR, (accessed 21 March 2013).

108 Lama Fakih of Human Rights Watch, cited in Fernande van Tets, "Syria crisis: Bashar al-Assad's use of rockets 'amounts to war crimes'", *The Independent,* 5 August 2013, www.independent.co.uk/news/world/middle-east/syria-crisis-bashar-alassads-use-of-rockets-amounts-to-war-crimes-8747283.html, (accessed 12 March 2014).

109 "Statement on Syria by UNICEF Regional Director the Middle East and North Africa Maria Calivis," United Nations Children's Fund (UNICEF), 26 February 2013, www.unicef.org/media/media_67991.html, (accessed 21 March 2014).

110 The next highest recorded by AOAV in 2013 is air-dropped bombs, which caused an average of 13 civilian deaths per incident.

111 "Missile shelling on Aleppo kills 29, wounds 150," *DPA* posted by *The Hindu,* 23 February 2013, www.thehindu.com/news/international/world/missile-shelling-on-aleppo-kills-29-wounds-150/article4445853.ece, (accessed 12 March 2014).

112 Human Rights Watch, "Syria: Unlawful Missile Attacks Kill More Than 140," 26 February 2013, www.hrw.org/news/2013/02/26/syria-unlawful-missile-attacks-kill-more-140 (accessed 28 April 2014).

113 There is not yet a universally agreed definition of an IED. The NATO definition is *'a device placed or fabricated in an improvised manner incorporating destructive, lethal, noxious, pyrotechnic or incendiary chemicals and designed to destroy, incapacitate, harass or distract. It may incorporate military stores, but is normally devised from non-military components.'* NATO standardization Agency, 'NATO glossary of Terms and Definitions,' 2008, www.fas.org/irp/doddir/other/nato2008.pdf (accessed 2 April 2014).

114 In 2012 AOAV recorded 16,933 civilian casualties from IED use worldwide.

115 In 2012 incidents were recorded in 42 countries and territories.

116 The countries where only one incident was recorded were Australia, Bosnia and Herzegovina, Canada, Colombia, Croatia, Ethiopia, Iran, Japan, Malaysia, South Africa, Tanzania, and UK. In 2012 there were 11 countries and territories where this was the case.

117 AOAV recorded 27 attacks in markets and places of worship in Pakistan in 2013.

118 In 2012, 58% of IED incidents occurred in populated areas.

119 IED attacks in markets were recorded in Afghanistan (10), Burma (1), India (1), Iraq (79), Mali (1), Nigeria (1), Pakistan (12), Somalia (4), Thailand (2) and Yemen (1).

120 Jamul Bhatti, "Death toll rises to 84 in Saturday's suicide blast in SW Pakistan," *Xinhua,* 17 February 2013, http://news.xinhuanet.com/english/world/2013-02/17/c_132174218.htm (accessed 2 April 2014).

121 "Lebanese city of Tripoli rocked by deadly explosions," BBC, 23 August 2013, www.bbc.co.uk/news/world-middle-east-23811328 (accessed 2 April 2014).

122 "Scores dead in north Lebanon twin blasts," *Al Jazeera,* 24 August 2013 www.aljazeera.com/news/middleeast/2013/08/201382311249855388.html (accessed 3 April 2014).

123 Surdarsan Raghavan, "Somali militants kill 15 in bombing at popular Mogadishu restaurant," *Washington Post,* 7 September 2013, www.washingtonpost.com/world/africa/blasts-kill-at-least-15-at-mogadishu-restaurant/2013/09/07/d0ed47ba-17b6-11e3-961c-f22d3aaf19ab_story.html (accessed 3 April 2014).

124 Joe Parkinson and Alya Albayrak, "Turkey blames Syria for deadly car bombs," *Wall Street Journal,* 12 May 2013, http://online.wsj.com/news/articles/SB10001424127887323716304578478631250320680 (accessed 3 April 2014); Erdem Gunes, "Death toll rises to 50 as explosions hit Turkish town on border with Syria," *Hurriyet Daily News,* 13 May 2013, www.hurriyetdailynews.com/explosions-hit-turkish-town-on-border-with-syria-killing-four-and-injuring-18.aspx?pageID=238&nID=46682&NewsCatID=341 (accessed 3 April 2014).

125 Hashmat Baktash and Mark Magnier, "Afghanistan tragedy: Bomb kills 18 civilians on way to wedding," *Los Angeles Times,* 27 October 2013, www.latimes.com/world/worldnow/la-fg-wn-afghanistan-bomb-kills-18-civilians-20131027,0,1667997.story#axzz2uRKuXGvd (accessed 3 April 2014).

126 In most incidents (70%) it was unclear from the source reporting what the method of detonation was for the IED.

127 6,333 civilian casualties, up from 5,398 in 2012. There were a further 23 instances where suicide bombings were used in combination with other detonation methods, killing and injuring a further 1,483 civilians.

128 Suicide bombings were recorded in Afghanistan (50), Canada (1), China (2), Egypt (4), Indonesia (1), Iraq (127), Lebanon (2), Mali (12), Niger (2), Nigeria (3), Pakistan (29), Russia (5), Somalia (11), Syria (32), Tunisia (1), Turkey (1), USA (1) and Yemen (6).

129 'Libya's first suicide attack kills seven near Benghazi,' *BBC,* 22 December 2013, www.bbc.co.uk/news/world-africa-25482088 (accessed 3 April 2014).

130 United Nations Security Council, "Report of the Secretary-General on the protection of civilians in armed conflict," 22 November 2013, http://reliefweb.int/sites/reliefweb.int/files/resources/Report%20of%20the%20SG%20on%20the%20protection%20of%20civilians%20S2013-689.pdf (accessed 23 April 2014).

131 Statements were made in 2013 by countries that included Australia, Bangladesh, Benin, Chile, Germany, Guatemala, Indonesia, Liechtenstein, Lithuania, Malaysia, Montenegro, New Zealand, Qatar (on behalf of the Arab Group), South Korea, Spain, and Sweden (on behalf of the Nordic Countries). For more information see, www.inew.org/acknowledgements.

132 United Nations General Assembly, Draft Resolution 67/L.63, 8 May 2013, www.un.org/ga/search/view_doc.asp?symbol=A/67/L.63, (accessed 23 April 2014).

133 See for example, United Nations Security Council SC/10583, 21 March 2012, www.un.org/News/Press/docs/2012/sc10583.doc.htm (accessed 1 April 2014); United Nations Security Council Resolution 1973, 17 March 2011, www.nato.int/nato_static/assets/pdf/pdf_2011_03/20110927_110311-UNSCR-1973.pdf (accessed 23 April 2014); and United Nations Security Council Resolution 1975, 30 March 2011, www.un.org/en/ga/search/view_doc.asp?symbol=S/RES/1975(2011) (accessed 23 April 2014).

134 United Nations Security Council, "Report of the Secretary-General on the protection of civilians in armed conflict," 22 November 2013, http://reliefweb.int/sites/reliefweb.int/files/resources/Report%20of%20the%20SG%20on%20the%20protection%20of%20civilians%20S2013-689.pdf (accessed 23 April 2014).

135 For more information see www.insecurityinsight.org.

136 "Protocol on Prohibitions or Restrictions on the Use of Incendiary Weapons (Protocol III)," to the UN Convention on Certain Conventional Weapons, Geneva, 10 October 1980, www.icrc.org/ihl.nsf/FULL/515 (accessed 18 March 2013).

137 For example, in street fighting in the Lebanese capital of Beirut on 21 May 2012 rocket-propelled grenades and machine guns were involved in attacks that injured six people. Hussein Malla, "Gunbattle in Beirut amid fears of Syria spillover," *The Associated Press,* posted by *The Guardian,* 20 May 2012, www.guardian.co.uk/world/feedarticle/10251460 (accessed 18 March 2013).

138 For example, The Landmine and Cluster Munition Monitor, which focuses on the impacts of landmines, cluster munitions, and ERW, recorded 3,628 mine/ERW casualties in 2012, 78% of whom were civilians. ICBL-CMC, "Landmine Monitor 2013: Casualties and Victim Assistance," 2013, www.the-monitor.org/index.php/publications/display?url=lm/2013/sub/Casualties_and_Victim_Assistance.html (accessed 10 April 2014).

139 Since 1987 more than 460 unplanned explosions at munitions sites (UEMS) have been recorded. In 2013 Small Arms Survey had recorded 13 UEMS incidents. Small Arms Survey, "UEMS Incidents by Year (1987-2013)," www.smallarmssurvey.org/weapons-and-markets/stockpiles/unplanned-explosions-at-munitions-sites/uems-incidents.html#c10593 (accessed 10 April 2014).

CONTACT

Action on Armed Violence
5th Floor, Epworth House
25 City Road
London EC1Y 1AA
T +44 (0)20 7256 9500
F +44 (0)20 7256 9311
E info@aoav.org.uk

www.aoav.org.uk