

## Letter to the Editor

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# Patterns of Explosive Violence Harm in Ukraine: Comparing Patterns of Harm Associated With Explosive Weapons in Ukraine From 2014 to February 2022, and After February 2022

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The Russian invasion of Ukraine, on Thursday February 24, 2022, was the culmination of years of Russian-sponsored separatist violence in the country. This open act of aggression resulted in acute shifts in the patterns of usage and harm associated with explosive weapons on Ukrainian territory.

Action on Armed Violence (AOAV) runs a global monitor of explosive violence, using an incident-based methodology to collect data on casualties of explosive weapons from reliable English-language news reports. Data is gathered 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. Data collected by AOAV in Ukraine between 2014,\* and February 24, 2022 were compared to data collected since the invasion, analyzing the proportional change in the use of ground-launched, and air-launched explosive weapons in locations reported as populated. The results expose the different ways explosive weapons are respectively used and cause harm in hot versus cold conflicts.

The predominant trend visible in patterns of explosive weapons harm in Ukraine is the growing use of explosive weapons in populated areas, which more than doubled in the months following the invasion. Before February 24, 2022, 37% (391 incidents) of all explosive incidents in Ukraine occurred in populated areas. Since the invasion and as of January 31, 2023, that number has risen to 85% (1765). Furthermore, ground-launched and air-launched explosive weapons, which has been the cause of majority of civilian harm both prior to, and following the invasion, have reportedly been deployed in populated areas more frequently since February 24, 2022. Between February 2014 and February 2022, 37% (347) of explosive attacks using ground-launched weapons, such as Grads and mortars, occurred in towns and cities. Since the invasion, however, 87% (1470) of incidents of ground-launched explosive weapons use were recorded in towns and cities – a 135% proportional increase in such usage. Similarly, the proportion of air-launched attacks on towns and cities has increased from 65% (11) to 87% (94). Since the invasion began, moreover, both ground-launched, and air-launched explosive weapons have reportedly been used less frequently in unpopulated areas. In short, the war in Ukraine has shifted more towards cities, and more towards the devastating use of ground and air weaponry systems in these urban areas.

Rather than limiting harm to civilians, the patterns of explosive violence in Ukraine consequently demonstrate a trend toward prioritizing civilian deaths, through a choice of weaponry and geography that maximizes civilian harm.

Understanding how hot conflicts impact patterns of civilian harm should continue to inform both preventive strategies, such as the conventions and declarations which, to this day are still striving to protect civilians from harm, and prosecute perpetrators,<sup>1</sup> but also responsive strategies, such as aid deliveries, and emergency/trauma response deployments, and defensive procedures that aim to reduce civilian suffering and casualties.<sup>2</sup>

## References

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2. **Debarre A.** *Hard to Reach: Providing Healthcare in Armed Conflict.* Vol. 6: International Peace Institute; 2018.