



Cluster Munitions and Thermobaric Weapons in Russia's Military Tactics in Ukraine

Marcin Andrzej Piotrowski

Despite the relative progress of its offensive in southern Ukraine, Russia is far from achieving the main political goal of regime change or capitulation of the government in Ukraine. Russia might now adapt its forces' tactics and capabilities for siege and urban warfare in the main cities and capital of Ukraine. Elements of this adaptation might be a much bigger role for cluster munitions and thermobaric weapons, which are especially dangerous for both the defenders and civilians of Ukraine.

What are the main problems with Russia's operational concept?

Russia has shown an inability to achieve its initial and primary strategic goals—a full change of the legal government or capitulation in Kyiv. [Russian troops' lack of success in the direction of Kyiv and losses among elite troops and air forces](#) might result in a new or adapted operational concept and tactics aimed at [breaking the will of civilians and defenders to resist in Ukraine's main cities](#). In mass assaults on Kharkiv, Kyiv, or Odesa, Russia might employ intense shelling by rocket artillery, aimed at terrorising civilians and weakening the defences. Russia might also use not only classic high explosive and fragmentary warheads, but also cluster munitions and thermobaric weapons.

What cluster munitions systems does Russia have?

Cluster munitions are delivered by ground-launched or air-dropped containers filled with numerous smaller explosive submunitions with the goal of eliminating surface targets or enemy personnel. These weapons is particularly deadly for civilians because around 10-30% of the submunitions do not explode and are scattered across an attacked area. These munitions have already been used in eastern Ukraine (mainly 2014-2015). Neither Russia nor Ukraine are signatories to the Convention on Cluster Munitions of 2008, which prohibits their use.

The main Russian cluster munitions system are for the BM-30 Smerch multiple-launcher rocket systems, which have

a 20-70 km range, and the BM-27 Uragan, with a range of 10-35 km. For example, each salvo of 16 Uragan rockets with cluster munitions creates a "death zone" covered by submunitions and fragments of about 200,000 m². Russia's use of these rockets was confirmed in three districts of Kharkiv on 28 February. Warheads with cluster munitions can also be mounted on precision ballistic missiles, such as the OTR-21 Tochka, with a range of 120 km (although officially no longer in service), and the newer 9K720 Iskander-M, with a range of 500 km. Russia used a Tochka missile with cluster munitions at Vuhledar on 24 February (where a local hospital was attacked), and either a Tochka or Iskander missile at Kramatorsk on 9 March. Russia also has gravity cluster bombs, with confirmed use of the RBK-250 and RBK-500 variants on 4 March in Zatoka (Odesa region).

What are Russia's thermobaric systems?

Thermobaric, or vacuum weapons, are fuel-air explosives that are effective against fortified targets and concentrations of enemy. These explosive powders or aerosols rely on oxygen from the surrounding air to generate within microseconds a high-temperature explosion, killing people both by the massive pressure and incineration. Russia used these weapons during the First Chechen War (1994-1996) and on a bigger scale during the Second Chechen War (1999-2000). Thermobaric bombs were also used by Assad/Russia forces during the civil war in Syria. Russia's Air Forces are armed with both bombs (KAB-500KrOPD, ODAB-500PM, and KAB-1500S) and air-to-

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surface guided missiles (S-8D, S-13D, AS-11, and AS-12). Unconfirmed use of these weapons was reported on 28 February in Okhtyrka (Suma region). The Russian Army also has thermobaric warheads for its SPLAV 220 rockets for the Uragan system and TOS-1 multiple rocket launchers, with a range of 3.6 km. Use of the TOS-1 system by Russia in Ukraine was confirmed by British intelligence, however without details about the attack(s) or strikes. These mobile systems are accompanying Russian troops, and its infantry might use hand fired rocket-propelled thermobaric grenades of the RPG-7, RShG-2, and RPO-A types, which are effective in close-quarter urban combat like flamethrowers.

What is the likelihood that Russia will use these weapons to a greater extent?

The threat of wider—if not massive—use of cluster munitions and thermobaric weapons by Russia increases with troop losses and a lack of a military or political breakthrough. So far, Russia has used them in a relatively few cases, but operational commanders might decide that more strikes are needed during sieges and assaults on well-defended cities like Kharkiv, Sumy, and Kiyv in the north, or on Odessa and Mikolyiv in the south of Ukraine. Currently, all of these cities are being shelled by classic high-explosive and fragmentary shells to try to destroy defender positions and civilian infrastructure. With a shift to another phase—urban warfare—and the probability of higher losses of

Russian troops, Russian forces might be more willing to use the tactics and capabilities already tested in Chechnya and Syria.

What are the consequences if Russia uses more of these weapons?

Neither cluster munitions nor thermobaric weapons are banned by a universal international public law, but wider use, particularly against civilian targets, [would be violations of the Geneva conventions by Russia](#). In both cases, there is no effective or active defence in Ukraine to counter them, such as artillery radars or counter-rocket systems. Passive defences (bunkers, shelters) might be effective against cluster munitions, but are particularly dangerous if thermobaric weapons are used. The combination these two weapons might have a huge impact on the morale of the Ukrainian defenders, the number of civilians killed, the humanitarian situation in Ukraine, as well as public opinion in NATO states of the perception of the war and Russia. In this context, it is very important for NATO states to signal that wider use of these systems could bring stronger economic pressure on Russia and a further strengthening of allied forces on the Alliance's Eastern Flank. Moreover, it is very important for Ukraine, the UN, and non-governmental organisations to document evidence of each case of use (even single and limited) by Russia with cluster munitions and/or thermobaric weapons, and their victims.