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# The Ground War at the Tactical Level (includes the 3<sup>rd</sup> Mechanized Battalion of the 72<sup>nd</sup> Separate Mechanized Brigade)

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*The article gives priority to the development of the modes of action of military units of the Armed Forces of Ukraine, which is an important aspect in the context of the country's defence capability. Focusing on the events of the full-scale Russian invasion of Ukraine in 2022, the article analyses the use of mobile fire groups in combat operations.*

*The article reveals the testimonies of individuals who participated in the defensive battles near Brovary in order to gain a deeper understanding of the tactical experience. In addition, the article traces the key stages of Kyiv's defence against Russian forces and reveals the main tasks and actions of Ukrainian units.*

*The results of the effectiveness of the use of firepower and mobile fire groups in these hostilities are also described in detail. It is important to note that this article does not claim to be a formal scientific report, but it contains valuable practical experience gained from the participants of these events.*

*Key words: fire ambush, mobile fire groups, unmanned aerial vehicles («drone»).*

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**I**t is important to recognize that understanding complex events such as the Russian invasion of Ukraine requires a nuanced approach. This article emphasizes the importance of relying on objective data and the opinions of those with direct experience, rather than relying solely on public opinion or media coverage. Through a thorough analysis of the events that took place near Brovary, we can gain valuable insights into the effectiveness of modern warfare tactics and the decision-making processes of military leaders. It is important to remember that participant testimony can provide valuable context for understanding these events, and this article aims to include such testimony in its analysis.

It is proposed to use the key lessons from the fighting near Brovary, which took place from February to April 2022 [1], to ensure a reliable and well-founded approach to the study of this experience. It should be noted that the source material for the analysis was provided by graduates of the National Defence University of Ukraine and included personal experience of these events. Therefore, it is important to perceive this article not as a formal scientific report, but as the testimony of the participants of the events for a correct understanding.

Russian military theorists planned a quick blitzkrieg and expected the initial assault to last three days. Their overconfidence and underestimation of Ukrainian determination led to defeat. For the left-bank operations of the assault on Kyiv, the main effort was to move through Brovary. The defence of Kyiv during the fighting near Brovary took place in three stages (Tab.1):

1. The initial phase slowed down the enemy's initiative and prevented the air force from forming operations.
2. The second phase stopped the enemy's advance, including ambushes and degradation of its combat capability through attrition.
3. The final stage was the enemy's retrograde operations to the north.

Key tasks of the initial stage of Kyiv's defence:

1. Provide support to the battalions defending the area of the village of Skybyn, 5 km northeast of the city of Brovary. The international road Gomel – Kyiv – Odesa passes through these settlements with a hard surface.

2. The mobile defence fire groups were tasked with helping to delay the enemy in case the Russians broke through the first line of defence.

3. If necessary, Ukrainian units were to make a last-ditch attempt to block the Russians from entering Kyiv.

The battalion's combat formation was organized in a single echelon with an armoured group and a combined arms reserve. On the left bank, the 3rd Battalion's operations were supported by a consolidated artillery unit from the brigade artillery group (3rd Artillery Group). As an additional element of the combat order, mobile fire groups were created to perform sudden combat missions, capable of conducting fire ambushes and manoeuvres in threatened areas and directions in a short time, outpacing the enemy in

Table 1  
Stages of operations and tasks of troops that defended Kyiv

Stages of the defensive operation	Tasks performed by groups of troops (forces)
Repelling the enemy's strike groups of troops (forces) attack, inhibition the high rate of the enemy's offensive (24 February – 1 March 2022)	<ol style="list-style-type: none"> <li>1) Counteracting enemy airstrikes</li> <li>2) Attacking the enemy with missile and air strikes, artillery fire</li> <li>3) Stable defence of operational areas, phase lines, battle positions and objects</li> <li>4) Blocking enemy advance routes</li> <li>5) Fighting enemy airborne troops</li> </ol>
Stopping the enemy's offensive, disrupting his efforts to resume the offensive (02 March – 23 March 2022)	<ol style="list-style-type: none"> <li>1) Steady defence of operational areas, battle positions, populated areas and objects</li> <li>2) Operations of mobile air defence fire groups</li> <li>3) Operations of fire mobile groups, ambushes, mining the area</li> <li>4) Striking enemy reserves, logistics facilities and command posts</li> <li>5) Improving the tactical position in relation to the enemy</li> </ol>
Force the enemy to retreat from Ukrainian territory and the position restoration along the state border (24 March – 3 April 2022)	<ol style="list-style-type: none"> <li>1) Secure of advantageous phase lines, operational areas and objects</li> <li>2) Disruption of the organized withdrawal of troops</li> <li>3) Carrying out offensive (assault) operations</li> <li>4) Restoration of control over the territory</li> </ol>

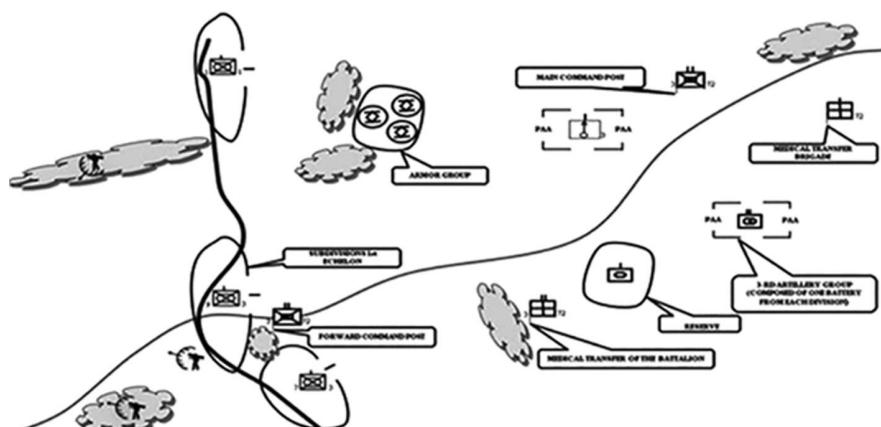


Fig. 1. Battle order of the 3<sup>rd</sup> Mechanized Battalion of the 72<sup>nd</sup> Separate Mechanized Brigade near Brovary

deployment and opening fire, and ensuring effective tactical and fire interaction with other units. These groups used pickup trucks (vehicles) with three to five personnel. They were armed with anti-tank weapons (Javelin, NLAW, Stugna-P, RPG-7) and man-portable air defence systems (Stinger, Igla, Piorun).

In order to provide more autonomy to the mechanized battalions, the brigade artillery group was divided into three combined artillery groups consisting of one battery from each division. The artillery group commanders were appointed by the division commanders who were at the command post of the mechanized battalion whose actions they supported. This distribution allowed each battalion to effectively inflict fire on the enemy and conduct counter-battery combat. The planning was carried out in accordance with the Western military decision-making process. For example, *Figure 1* shows the main command post and the

mobile command post, although there are no such elements of the control centre at the battalion level according to Ukrainian guidelines, but in practice the division into elements of control centres is applied even at the company level.

The Russian convoy consisted of about 60 vehicles, including mostly T-72B3 tanks, about 6 BTR-82 armoured personnel carriers, and 2 MT-LB trucks. The tactical group was commanded by the commander of the 6th Tank Regiment of Russian troops<sup>1</sup>.

The infrastructure and terrain limited the enemy's deployment in combat formations. The main road, E95 (M01), had four lanes. For most of the trip, the west side of the highway was densely forested, with thick trees growing

<sup>1</sup> Testimony of the participant of the events, Hero of Ukraine Lt Colonel Roman Darmohrai.

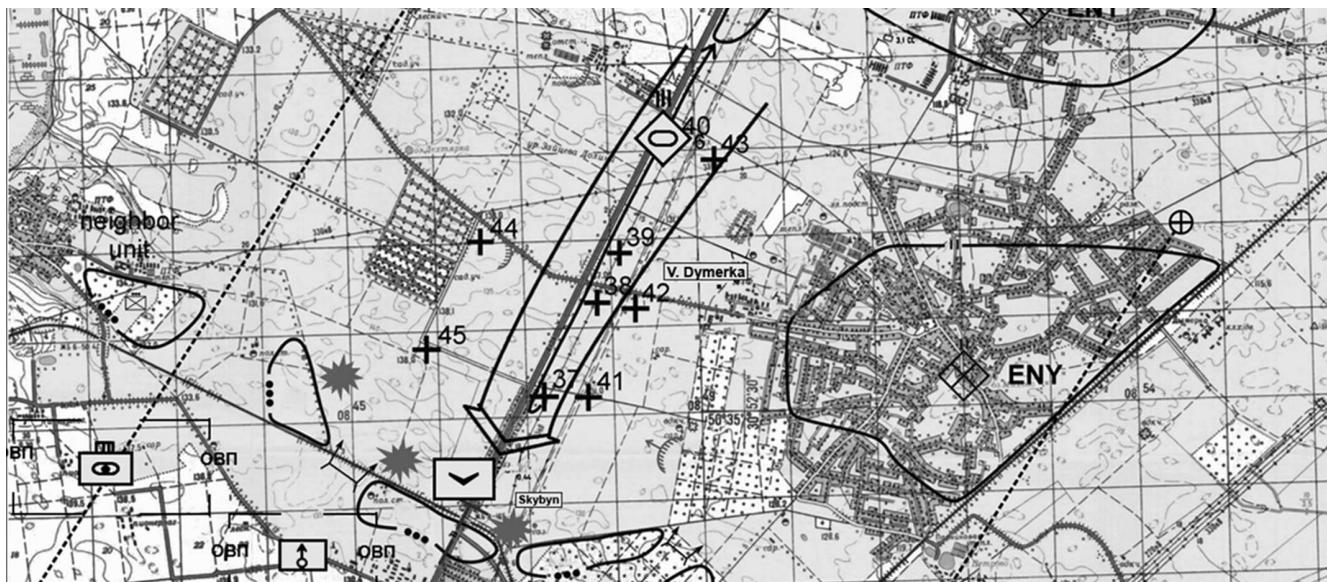


Fig. 2. Fire defeat of the enemy on the route of advance

about 20 meters from the asphalt. On the east side of the road was a slope leading to open fields covered in mud. The slope provided some cover against an attack from the west. In the villages, the houses were close to the road, providing cover from which to attack. Since the terrain in this area is mostly flat, it was possible to inflict fire damage on the enemy along the route of advance and destroy enemy equipment on long approaches (Fig. 2). This greatly reduced the enemy's offensive potential, as the loss of at least one unit of equipment from the assault group in most cases stopped the offensive.

#### Fire ambush

The battalion's units attacked the Russian convoy near the village of Skybyn with anti-tank missiles and artillery fire [2].

The goal was to inflict losses on the Russians and reduce their morale. Mobile fire groups attacked simultaneously with artillery. The first Ukrainian ambush destroyed 5 tanks, and then another 14 tanks and 3 armoured personnel carriers were destroyed by the artillery division while performing fire missions. After that, the enemy, under the cover of thermosmoke equipment, began to retreat eastward to the nearest village of Velyka Dymerka occupying secondary settlements (Fig. 3). During the enemy's advance toward the settlements, they were fired upon by infantry fighting vehicles (IFVs) and tanks from firing lines. The mobile fire groups pursued fleeing Russian vehicles and, if possible, and if not, called in artillery fire. Mobile fire groups also prevented other vehicles (logistics) from supporting the defeated Russian column<sup>2</sup>.

<sup>2</sup> Testimony of the participant of the events, Hero of Ukraine Lt Colonel Roman Darmohrai.

Ukrainian needs in terms of weapons are met primarily by using «drones», i.e. mortars can be adjusted, sometimes large-calibre artillery can be adjusted using Mavic 3, DJI Matrice, or other versions of «drones» that are quite easy to buy somewhere on the civilian market with the help of volunteers.

#### Mortar fire

The mortar battery performed direct fire on the enemy and aimed to provide fire support to mobile fire groups that went beyond the front line with the tasks of target detection, adjustment of fire and combined arms units engaged in defensive combat using unmanned aerial vehicles (UAVs). Depending on the conditions of the situation, the battery also performed fire missions during periods of fire, namely:

- artillery preparation to repel an enemy attack;
- artillery support of the defending troops.

#### Artillery support in the defence of Brovary

The artillery group used UAVs for support (primarily Furia drones) to conduct reconnaissance, adjust fire, determine combat casualties, and search for the enemy after its retreat (Fig. 4).

The Mavic 3 operator, artillery team leader, and battalion commander were all in the same room. There was no need for multiple Mavic 3 operators, as the linear feature of the road provided a concentrated kill zone. This allowed the commander to see the situation and give real-time instructions based on intelligence. Then Mavic 3, DJI Matrice were used to search for and engage the retreating Russian forces. The effectiveness of the battalion's artillery group and mortar battery was significantly increased by adjusting fire with

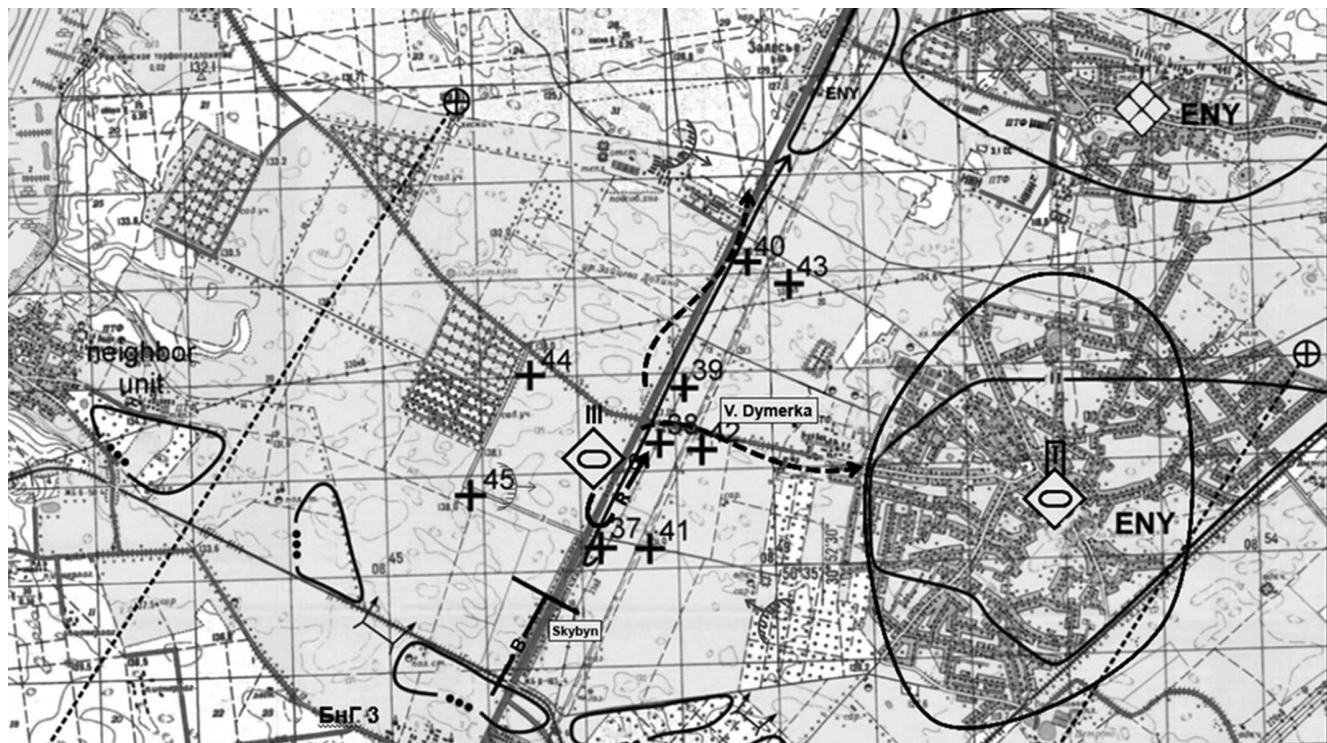


Fig. 3. Blocking, pursuit and destruction of Russian equipment

the help of UAVs. To ensure their effective use, mobile aerial reconnaissance groups were created, equipped with various types of UAVs (usually Mavic 3, DJI Matrice), Starlink kits and portable power generators. This allowed them to be fully autonomous and broadcast video from the battlefield to the command post online. Domestically produced UAVs, such as Furia and Leleka, were widely used to conduct reconnaissance and adjust fire to a depth of more than 5 km<sup>3</sup>.

#### Russian aviation activity

The enemy used single, paired, and grouped fighters and attack helicopters to provide air support for its ground combat operations. Most aircraft used air power against ground targets without entering the defence zone of air defence units, while observing radio silence discipline and operating at extremely low altitudes, using terrain, especially along rivers and reservoirs<sup>4</sup>.

#### Air defence

The units did not have integrated air defence in the region north of Kyiv, so the defence was decentralized. MANPADS deployed in small mobile groups played a significant role in destroying enemy aircraft. These mobile groups used both military and civilian vehicles with

Iglas and Stingers, creating ambushes using «shoot and run» tactics (Fig. 5). Ukrainian man-portable air defence systems destroyed at least 4 KA-52 combat helicopters in Hostomel near Bucha<sup>5</sup>. In addition, after the failures at Hostomel, the Russian Air Force launched countermeasures (mainly flares) that complicated the work of Ukrainian air defence over Ukrainian territory, forcing several small groups to attack the same target [3].

#### Tanks

Ukrainian armoured vehicles had two tasks: first, they had to engage the enemy with direct fire and manoeuvre, and second, they had to fire if a tank or other enemy target was at a greater distance, up to 10 km, then they fired at it «from closed firing positions» (Fig. 6). In this case, neither the target nor the firing tank was visible, nor the flash from the shot. «Closed firing» can also be done from short distances – the main thing is to find the target. In combination with the adjustment of fire by drones and the use of «Army SOS» and «ARMOR» software, it was possible to effectively inflict fire damage on the enemy.

This was especially important in the face of a shortage of ammunition for artillery systems and mortars.

<sup>3</sup> Testimonies of participants of events.

<sup>4</sup> Testimonies of participants of events.

<sup>5</sup> Testimonies of participants of events.

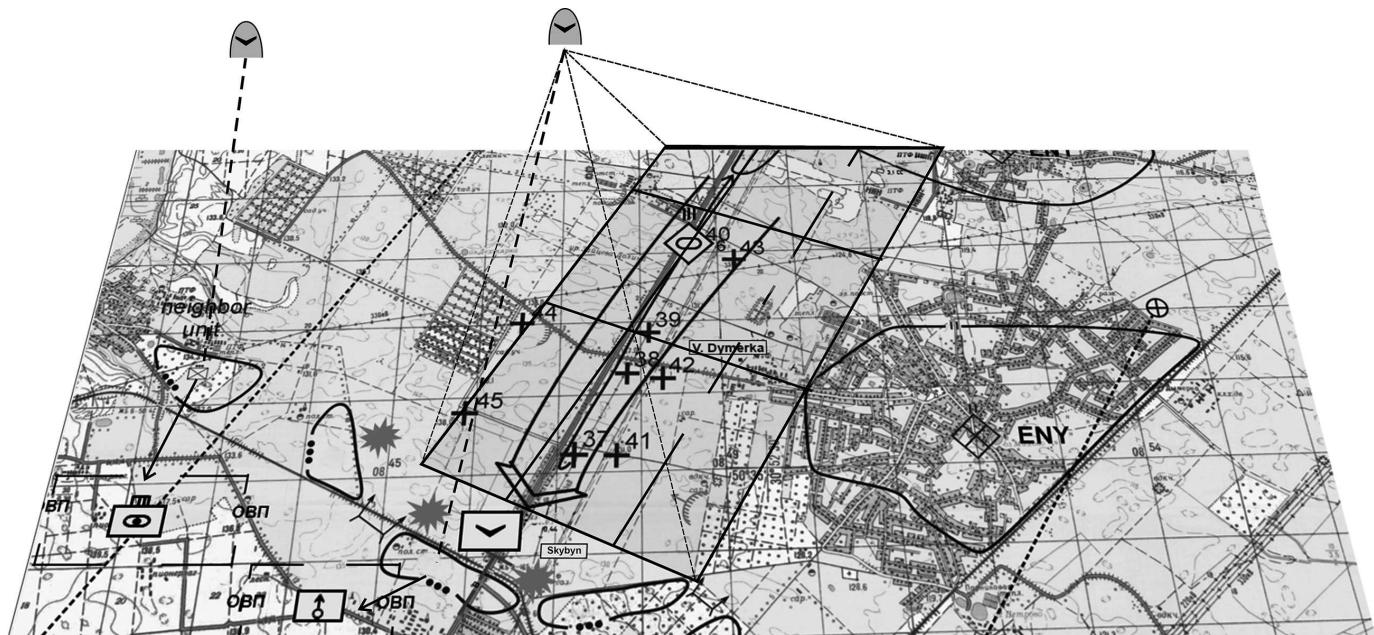


Fig. 4. UAV support

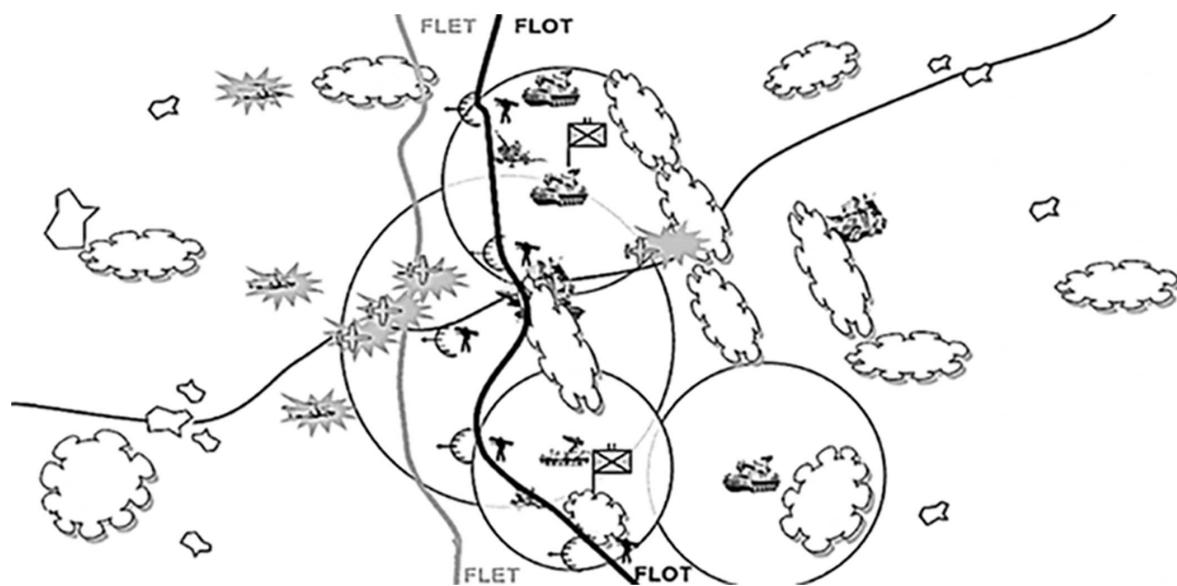


Fig. 5. Actions of air defence units in ambush

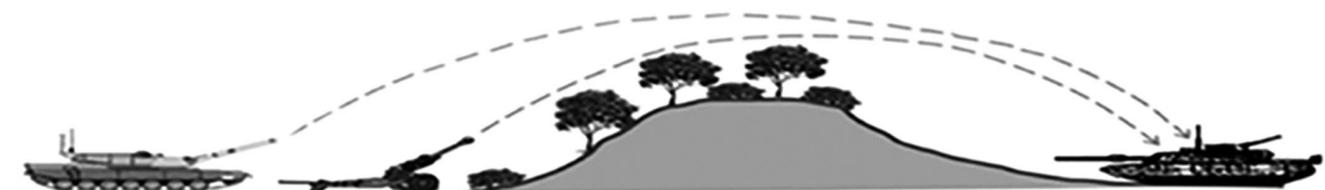


Fig. 6. Firing from a closed firing position

### Advantages of the Armed Forces of Ukraine

The Ukrainian Armed Forces had support from and interaction with the local population, including intelligence support. The local population provided pickup trucks, or «equipment». The population provided intelligence and early warning. Ukrainians conducted thorough reconnaissance before the attack. All units of the Ukrainian Armed Forces, including reserves, medical units, and volunteers, were prepared for the Russian attack. The Ukrainians knew the area well. The local population assisted in the creation of defensive positions. In addition, the Ukrainian Armed Forces demonstrated mission command and flexibility.

### The enemy's main miscalculations during the war

The Russians expected a quick victory and planned their logistics to take advantage of Ukraine's stockpiles. The Russians also failed to prepare their soldiers for full-scale combat, telling them that they were on a training exercise. Russian infantry was prepared to take over administrative functions in Kyiv rather than conduct infantry operations. The Russians overestimated the importance of internal disruptors (spies, Russian sympathizers, and fifth columnists) and the internal disorganization of the defence forces in Kyiv itself. They also miscalculated the Ukrainian will to resist.

### Russia's tactical mistakes

Russia made a number of tactical mistakes that hindered its advance on Kyiv. First, the long, cumbersome supply lines were difficult to maintain and vulnerable to air strikes by Bayraktar TB2 drones. The Russians were poorly trained, and their interoperability and coordination between units was inept, especially during attacks. They also had difficulty navigating for a number of reasons. Second, they conducted large-scale jamming of satellite navigation systems, disabling their own satellite navigation. Ukrainians sabotaged street signs. The Russians used old, not up-to-date maps [4].

### Lessons learned

There are several lessons to be learned from the battle for Brovary, a suburb of Kyiv. The first important lesson is that UAV support allows for accurate indirect fire. Using a commercial Mavic 3 drone, the DJI Matrice, the 3<sup>rd</sup> Mechanized Battalion of the 72<sup>nd</sup> Separate Mechanized Brigade near Brovary was able to locate, fix, engage and assess Russian targets. Secondly, small mobile groups using ATGMs and man-portable air defence systems were able to ambush Russian formations that were channelized and confined to the main highway. The use of mission command by the Ukrainian side allowed these mobile groups (special makeshift battalions) to create unfavourable conditions for the Russians [2].

This experience sheds light on such component of military art as tactics used by Ukrainian units to successfully conduct defensive actions against significantly superior enemy forces. The conclusions and results of these events can be a valuable auxiliary material for the armies of other countries in developing defensive actions against aggressors.

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