THE STRATEGIC IMPORTANCE OF CITIES IN THE ASPECT OF WAR IN UKRAINE

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Abstract

Russia, which for many years has been recognised as the second military power in the world, launched a strike against Ukraine on 24 February 2022. This was to be a very quick and efficient operation intended to demonstrate Russia's military power and effectiveness. Most experts predicting potential wars were in agreement that future military operations were all about the need to forego costly operations, following the principle of winning wars with limited costs. The anticipated type of future war is one of hybrid conflict with an emphasis on the sphere of information, psychological and cyber operations and the clash of new technologies. Unacceptable costs are primarily the lives of civilians and soldiers. A future military operation is expected to comprise combat operations conducted in a dynamic, precise and systemic manner with the use of modern military technology.

Nonetheless, nothing of the sort has happened; it has been more than a year since the conflict has begun and its nature considerably differs from all predictions of the assumptions. Cities have become the most desirable battle space, which as a consequence resulted in many casualties of war and the devastation of Ukraine's infrastructure. With this in mind, the primary objective of the research was identifying factors that contribute to conducting military operations in built-up areas and outlining pertinent considerations for effective operations in urban areas in the context of the ongoing conflict in Ukraine.

The main research problem formulated for the purposes of the research being carried out was expressed in the form of the following question: *Why are urban areas so important in the ongoing conflict in Ukraine, and what are the specifics and factors that affect the effectiveness of operations in built-up areas?*

For needs of the research it was assumed that cities and built-up areas, as political-administrative, economic, industrial and cultural centres, are gaining in importance. They often serve as nodes of railways, roads, airports and seaports and the location of critical infrastructure facilities of the state and the region. Cities are home to large reserves of skilled human reserves, food, raw materials and finished industrial products. Moreover, they play an important role in the functioning of the state as a whole. The ongoing conflict in Ukraine shows that maintaining at all costs the urban complexes that assure the appropriate functioning of the state (public administration, media, energy, etc.) can

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determine the success of military operations. This may be confirmed by conclusions drawn from an analysis of recent conflicts of the second half of the 20th and early 21st centuries, which indicate that military operations in a built-up area are becoming dominant.

Keywords: military security, military threats, crisis response, military capabilities, security strategies, military action

Introduction

The launch of Russia's military invasion of Ukraine on 24 February 2022 was intended to fulfil its long-standing aspiration of restoring its superpower and sphere of influence over the states of the former Soviet Union. Russia, which for many years has been recognised as the second military power in the world[1] has launched a strike against Ukraine. This was to be a very quick and efficient operation meant to demonstrate Russia's military power and effectiveness. Most experts predicting potential wars were in agreement that future military operations were all about the need to forego costly operations, following the principle of winning wars with limited costs. The unacceptable costs primarily included the lives of civilians and soldiers. The anticipated type of future war is one of combat operations conducted in a dynamic, precise and systemic manner using modern military technology, referred to as 'network-centric warfare', in which information plays a fundamental role. The success of the groupings fighting on the future battlefield will depend on gaining an advantage in the areas of: *knowledge, speed (manoeuvrability) and precision strike*.

A further argument that prompted the authors' research is the question of the nature of prospective wars. Many military experts tried to argue that the nature of future wars would consist of psychological and cyber conflicts and of clashes of new technologies. The life of a soldier is a paramount value and the death of a civilian is unacceptable in the upcoming war. However, when analysing the conflict in Ukraine, or the conflicts in Syria, Afghanistan or Iraq, it is difficult to confirm such a thesis.

A further argument for undertaking the research is that, when analysing recent military actions around the world, we notice regularity of constant escalation of security threats in the urban environment. The development of civilisation also means a progressive urbanisation of the environment. New cities and towns are constantly appearing and the existing ones are being expanded. Accelerated economic development will boost the degree of urbanisation and land densification,

[1] In developing the ranking of the order of military capabilities of each country, the Power Index for each nation was used, which consists of more than 50 factors. The authors of the ranking indicated that they did not take into account the nuclear capabilities of each country, but considered geographical factors, dependence on own/imported energy resources. Points were not deducted from landlocked countries, but maritime powers were penalised for limited naval capacity. The level of military-political leadership in each country has not been examined either. www.globalfirepower.com.

which would systematically reduce the area of open lands. Not only the size, but also the nature of the built-up area is going to change. It is worth quoting at this point the American theorist S.E. Alexander who argued that *one of the important factors that has influenced the transformation of the US Army is the conclusion that future tasks, whether they be assault, defence or peace support operations, will be carried out in built-up areas* (Alexander, 2002). This assumption was confirmed contemporaneously by General Mark Milley, chairman of the College of the Joint Chiefs of Staff, who said that *in the future, I can say with very high degrees of confidence, the American Army is probably going to be fighting in urban areas. We need to man, organize, train and equip the force for operations in urban areas, highly dense urban areas, and that's a different construct. We're not organized like that right now* (https://mwi.usma.edu/urban-warfare-project/). The above cited statements of both military theorists and practitioners support the presumption that built-up areas have become and will continue to be the primary environment for military operations for the foreseeable future. This may also be supported by lessons gained in the ongoing conflict in Ukraine, where, since its inception, the effects of urban combat have been central to the tactical, operational and strategic planning and military and political decision-making of both warring parties (DiMarco, 2022).

It is conceivable that, when operating in a built-up area, one has to bear in mind the limitation of losses among the existing infrastructure and, above all, the civilian population. This raises the need to move away from the concept of operations based on massive and heavy fire to destroy a city. A built-up area also means the presence of a civilian population that can participate actively in combat, be used by the opponent as 'human shields', and requires targeting, isolation and humanitarian assistance. However, is this the reality in the current war in Ukraine?

With this in mind, the primary objective of the research was *identifying factors that contribute to conducting military operations in built-up areas and outlining pertinent considerations for effective operations in urban areas in the context of the ongoing conflict in Ukraine.*

The main research problem, for the purposes of the ongoing research, was expressed in the form of the question: *Why are urban areas so important in the ongoing conflict in Ukraine, and what are the specifics and factors that affect the effectiveness of operations in built-up areas?*

For the research an assumption has been made that the importance of cities and built-up areas, as political-administrative, economic, industrial and cultural centres, keeps growing. They are often the nodes of railways, roads, airports and seaports and the location of critical infrastructure facilities of the state and region. Cities are home to large reserves of skilled human reserves, food, raw materials and finished industrial products. They play an important role in the functioning of the state as a whole. The ongoing conflict in Ukraine shows that the success of military operations may depend on maintaining at all costs the urban complexes that constitute the functioning of the state (public administration, media, energy, etc.). This is confirmed by the conclusions of an analysis of recent conflicts taking

place in the second half of the 20th and early 21st centuries. They indicate that operations in built-up areas are becoming the dominant military operations.

It is reasonable to assume that cities will be the most likely battle space of potential wars, and this necessitates a great deal of intellectual effort and investment to solve problems concerning the determination of the necessary changes in structures, equipment and ways of conducting operations in a hostile environment constituted by the built-up area. The concepts of action in urban areas should take into account the intensification of threats occurring in the region, the need of ensuring the safety of civilian population, the protection of the city's infrastructure and the complexity of operations in this environment.

In order to obtain comprehensive and reliable answers to the research problem posed above, as well as to achieve the stated research objective and to verify the established main hypothesis, the research process adopted theoretical and empirical methods recognised in the scientific community. Such an approach is likely to provide an opportunity to outline the assumptions of conducting military operations in urban areas.

What does the importance of cities stem from?

The basic laws relating to the conquest and defence of cities have been formulated already in ancient military philosophy. Among others, SUN TZU proclaimed that *The worst strategy is to attack cities. This may be done only as a last resort*. Is this principle still true presently, in the 21st century, described as the 'information age'? Observing the world around us, analysing the course of the recent conflict, we have the impression that it is not so.

The subject of urban warfare is a very broad, difficult, but nevertheless a very important problem, which we, as military officers, should not avoid. The experience of recent wars, armed conflicts as well as the analysis of possible security threats allows us to make the following presumption: *the majority of past, present and likely future military conflicts will be conducted in built-up areas.*

When analysing past wars and conflicts and looking for the accent of urban warfare in them, it is not difficult to find confirmation that cities were one of the oldest, most well-known and most important issues in the art of war. Since the dawn of history, wars have usually been limited, on the one hand, to the defence of strongholds, fortresses prepared for a long, gruelling battle, and, on the other hand, this has led to the development of tactics, siege technology with the use of various types of machines. Views concerning wars, including also war doctrines, strategic concepts and forms of warfare, have been changing with the progress of civilisation. In each historical period, the image of war corresponded to that of the era. Nevertheless, cities have always been a strategic place in a country's concept of defence. One of the greatest authorities on the modern art of war, CLAUSEWITZ, introduced the concept of the 'key' of the state by stating that *if there is such an area, without the possession of which one cannot dare to invade an enemy country,*

we shall rightly call it the key of that country ... Points that determine the possession of the whole have come to be regarded as the key of the given country.

Any army, even the most modern one, is to a large extent associated with cities. They are of increasing importance as political-administrative, economic, industrial and cultural centres. As indicated in the introduction to this article, built-up areas are often the nodes of railways, roads, airports and seaports and active repair and production bases. Cities contain large reserves of skilled human resources, food, raw materials and finished industrial products. They play a significant role in the functioning of the state as a whole, and critical infrastructure of the state is usually located around them. The recent conflicts in Iraq, Afghanistan or the current one in Ukraine demonstrate that the conquering of urban complexes that control the functioning of the state (government administration, media, energy) may be the only prerequisite to the success of military operations. This means that in possible future combat operations they will not lose their military significance[2].

In the 21st century many fundamental changes have been adopted in the way warfare is conducted. Classic operations, which were essentially confrontations between large groups of armies in open uninhabited terrain, have become an irrevocable thing of the past. Already during the Second World War, fighting had already moved into the cities. Examples include the bloody battles for Warsaw, Berlin, Stalingrad and Breslau. Fighting took place for every house, street or neighbourhood, with civilians fighting alongside soldiers. Successive conflicts in Afghanistan, Chechnya, Somalia, Iraq or, more recently, in Ukraine, confirm the presumption that fighting has permanently shifted to built-up areas. For centuries, history has demonstrated that operations in built-up areas require more and more information, time, the combined efforts of many types of troops and extremely large amounts of ammunition and other resources. Attacks on built-up areas usually ended with heavy military losses, civilian casualties and destroyed buildings and infrastructure.

All of this will be countered by the modern concept of urban warfare, making use of the latest technological assumptions and hi-tech advances. There is a need for changes in the theory of operations to be executed in built-up areas, particularly with respect to the composition, forms and methods of operation of ground forces. However, in order to achieve this, it is necessary to refer to the literature and, more specifically, to the experience we have in dealing with various types of crisis situations in urban environments. Some examples are the operations of ground troops in Somalia, Chechnya, and the experience gained in Israel, Iraq or Afghanistan.

[2] In Ukraine, the Russians, faced with the impossibility of subduing built-up areas, are deliberately carrying out strikes against Ukrainian critical infrastructure facilities with the use of missile means. Presumably, this is intended to breach the morale of the population by bringing built-up areas to a state that prevents or impedes the daily functioning of the population.

Lessons learnt from the conflicts of the late 20th and early 21st centuries indicate that cities were the main regions of resistance or were considered as objects to be conquered. Cities and built-up areas were the primary operating environment for military forces in most crisis situations, which require specificity of action, as classic defence or assault cannot be transferred to this environment. This may be confirmed by losses sustained in Grozny or Kherson, Mariupol[3] and Bakhmut by the Russians who in an endeavour to conquer the city have executed a classical attack using heavy equipment. The specific nature of conditions in a built-up area means that it has been inefficient to use fixed battalion, regiment or brigade type structures. In an environment like an urban area, it is necessary to build task force structures that are adequate for the effective execution of tasks in operations.

Ongoing studies of selected armed conflicts allow drawing the conclusion that the experience of conflicts at the turn of the 20th and 21st centuries indicates that cities were the main regions of resistance or were adopted as objects to be captured in order to achieve the objectives of operations. Cities and built-up areas were the primary operating environment for military forces, as they enable the levelling of quantitative and qualitative advantages, creating conditions for weaker forces, often having at disposal outdated equipment, to fight effectively against modern armies. The urban environment is conducive to hybrid and asymmetric warfare. This is because it is easy to achieve surprise while at the same time providing concealment for your own forces. The modus operandi in conflicts varies on a case-by-case basis. Therefore, it is not possible to develop a universal concept of actions in a built-up area. It is only possible to generate rules of action whose observance are likely to enhance the probability of success. The built-up area is characterised by the peculiarities of operation arising from the significant constraints on the application of the classical approach to the conduct of combat. This may be demonstrated by the losses in Grozny suffered by the Russians, or the current losses of the Russians in eastern Ukraine, who, in order to assume control of the cities, made classic strikes with the deployment of heavy equipment. Operations in the city tend to be broken down into a series of clashes in independent directions, so success is a component of the successes of small subdivisions.

In built-up areas, tanks, armoured personnel carriers, attack helicopters and unmanned aerial vehicles (drones) play an important role as means of support for infantry subdivisions. The experience gained in Iraq as well as in Ukraine indicates that, despite limitations for the use of armoured equipment, its use as a fire support and psychological factor is justified. Tasks are better carried out at night, after the introduction of curfews. This allows the contingency force to exploit its technical superiority over the enemy (night vision, thermal imaging). In such a way they may minimise civilian casualties and detect the enemy (bystanders do not leave their

[3] According to official reports from the Ukrainian side, 6,000 Russian soldiers were killed during the siege of Mariupol, and 78 tanks and around 100 armoured vehicles were destroyed (The Kyiv Independent news desk, 2023a).

homes) much easier[4]. Fighting in built-up areas continues to be characterised by brutality and the use of inhumane and legally prohibited combat methods. Examples include using children and old people to shield fighters, using ambulances or other privileged vehicles to move around, kidnapping, beating and torturing of soldiers and detainees, the use of booby-trap bombs in the Israeli-Palestinian conflict etc. In the built-up area civilian population may be present that may participate actively in combat, be used by the enemy as 'human shields', require targeting, isolation and humanitarian assistance[5]. When operating in a built-up area, consideration must be given to limiting losses to the existing infrastructure and, above all, to the civilian population. The main NATO assumptions for the protection of civilians include *making every effort to avoid, minimise and mitigate adverse effects that may result from NATO and NATO-led military operations on the civilian population and to protect the civilian population from conflict, physical violence or the threat thereof by other actors* (Protection of civilians, ACO Handbook, 2021, p. 7). In NATO military operations, civil protection is contained in the following three elements (Protection of civilians, ACO Handbook, 2021, p. 8):

- mitigating losses by identifying victims and perpetrators;
- identifying the needs of the affected population;
- creating a safe environment for the civilian population.

The identified areas allow adopting a holistic approach to civil protection, focusing primarily on identifying the victims as well as the perpetrators and taking appropriate action to mitigate the negative effects on the affected population. This is followed by identifying the needs of the affected population and how those needs can be assured and provided as well as building a safe environment for that population to live in. This involves the need to change the paradigm of mass fire strikes in favor of precision fire strikes on selected targets. Military operations in built-up areas do not end when the enemy is directly smashed or overpowered. The next stage of such operations is to stabilise the situation in the area of operations. In the conditions of built-up areas, it is necessary to restore as quickly as possible the efficiency of the infrastructure (power plants, water supply, food and water supply, medical services, city cleaning, etc.)[6].

[4] Detecting and neutralising enemy special forces (diversionary-recognition groups) in built-up areas was and remains a difficult undertaking, due to the specific and often internationally illegal methods of the opposing side in urban environments. During the first days of the conflict in Ukraine, Russian sabotage-reconnaissance groups in the uniform of Ukrainian military and police formations infiltrated Kiev (Wilk, Żochowski, 2022).

[5] For example, ISIS tactics included deliberately hiding among civilians and using civilian homes and infrastructure to attack NATO coalition forces.

[6] One of the lessons from the war in Ukraine is the need to change the approach to energy security. The centralisation of energy generation is leading to 'energy vulnerability', which particularly affects built-up areas and strategic areas of state functioning. The ability to generate and supply energy is therefore becoming as important as the ability to conduct military operations. From the start of the invasion until 9 March 2023, the Russians carried out fifteen massive rocket-air attacks in Ukraine against the country's energy and industrial infrastructure (Wilk, Żochowski,

Specific nature of military operations in the urban environment

The above presented research results confirm the ever-increasing importance of built-up areas in the context of military operations. They also force us to reflect on prospective concepts of combat in such an environment. It turns out that these concepts differ significantly in their forms and modes of operation from those applicable to open-air combat tactics. The forces and means of operation of troops in urban areas will depend on the extent of the terrain, its population and the nature of the buildings and infrastructure. Furthermore, it is worth emphasising that in the Ukrainian-Russian conflict we are dealing with clashes between the regular armed forces of two independent states, and that differs significantly from conflicts between professional troops and rebels that have taken place in recent decades. This is a regular armed conflict entailing historically high casualties, which in the case under consideration are further compounded by the urban dimension of the fighting, its brutality and the difficulty of conducting it. The Russian approach to fighting in built-up areas during the conflict in Ukraine often translates into the destruction of entire residential complexes and even cities, attacks on energy infrastructure and prolonged sieges, as in the case of Mariupol, Severodonetsk and now Bakhmut. The essence of such operations comprises primarily artillery shelling, which turns cities into rubble and forces their populations to flee. According to selected military experts, in the foreseeable future the Russian side may employ one of its three characteristic models of fighting in built-up areas (DiMarco, 2022). The first one may involve launching successive assaults on a built-up area by using formations of different types of troops to destroy the defender's forces and capture the city. This approach usually involves high casualties to the attacker and to the civilian population as well as to the city's infrastructure. This model of operations will involve a challenge of training the appropriate Russian forces (infantry and tank formations) as well as having a significant numerical advantage over the Ukrainians fighting in an environment favourable to them, even if the city were to be destroyed and fighting were to take place in the rubble. The second approach involves slowly and systematically seizing small sections of a built-up area and then holding them while repelling Ukrainian counter-attacks and preparing to seize the next section. This way of fighting requires a smaller force than the previous one, but involves making precise artillery and air strikes while having a high advantage at the point of attack. It will be slower and involve fewer forces than the assault on a city and, although fewer losses would be incurred, it may prove disadvantageous to the Russians precisely because of the slow pace of action and the results obtained. In the third model the defender would be defeated

2023). It is estimated that the cost of restoring the damage caused by the Russian invasion of Ukraine to date will be approximately US$138 billion. This damage includes the total destruction of 344 bridges, 440 educational facilities, 173 hospitals and hundreds of thousands of homes and many buildings that have suffered extensive damage (Lasocki, 2023).

by conducted surface fire strikes by exploiting Russian dominance in artillery and aviation. It reduces losses among own troops, yet it entails a significant increase in civilian and infrastructure losses. The use of fire alone would be a protracted action and would require the use of brutal tools, such as thermobaric weapons or cluster munitions, preceding a systematic and slow assault on the city. The model of operations described above was adopted by the Russians when supporting Syrian troops in the seizure of the city of Aleppo in 2016, and it also appears that this is the modus operandi used by the Russian army during the siege of Mariupol.

However, historical experience shows that urban operations face numerous limitations. In conditions imposed by a built-up area, combat breaks down into many small clashes conducted at different levels. It will usually be conducted by small groups of subdivisions fighting on foot, reinforced by sappers and armoured weapons. Mutual fire support will be difficult to achieve in such conditions. Direction of troops will have to be decentralised, making the organisation of communications and command additionally difficult. Success will be the total of effective platoon, company and battalion operations, where it will be difficult to determine who is defending, who is pressing and who is carrying out support and stabilisation tasks (Figure 1). The battle will be fought over every building, every room, and its nature will most likely be unstructured. Some buildings will have to be prepared for circular defence, others will have to be stormed, and still others will have to be blocked and isolated. The above theoretical assumptions were confirmed during the Ukrainian conflict, where in built-up areas, tactical level commanders play a key role, the use of heavy combat equipment is hampered and ambushes and the action of sharpshooters pose a significant threat (Konaev, 2022). Fighting in a built-up area is unpredictable, all the more so as a subdivision may be carrying out defensive operations in one building on one level, or carrying out an assault or bypass manoeuvre on another. Yet on the other hand, the information activities of a strategic level and the essentially unlimited use of social media with its enormous manipulative potential make it possible to create a picture of the situation according to the needs of the warring parties. This may be illustrated by the situation at the beginning of the Russian attempt to seize Kiev in 2022, which could be watched live from anywhere in the world and consequently influence not only the local or regional community, but also the global public opinion (Collins, Spencer, 2022). However, this does not change the fact that, in the light of the findings, the leadership of operations in built-up areas would be very limited. Lower level commanders will have a great deal of freedom to carry out a variety of tasks, so it is important that they are well prepared to fight in conditions where the successes of small sub-units will add up to the success of the entire operation.

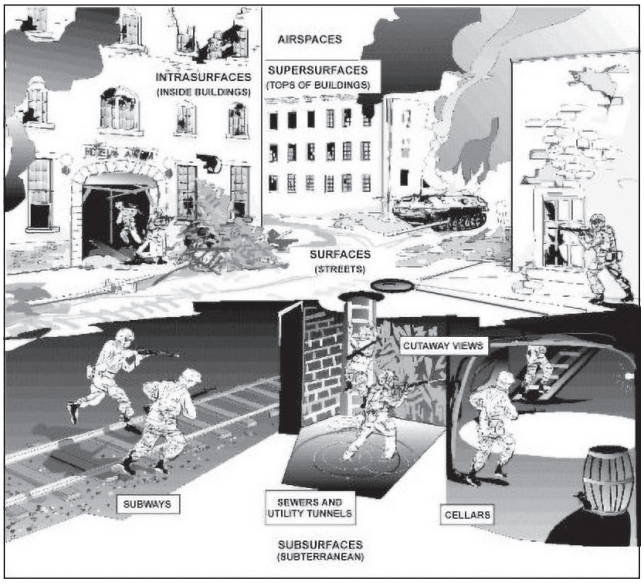

Figure 1. Multidimensionality of military action in the city

Source: *ATTP 3-06.11 Combined arms operations in urban terrain,* Headquarters Department of the Army Washington, D.C., 10 June 2011, p. 27

The US MOUT (Military Operations in Urban Territory) doctrine places a strong emphasis on command, control, communications, information technology and reconnaissance (C4I) along with interaction with the enemy and shielding of own troops. It is based on the concept of war of attrition (Hewish, Pengelley, 1998). The attacking forces surround and isolate the city, cut off the approach routes and then conduct a linear, methodical clearing of the city by mechanised and infantry subdivisions from the enemy forces, as was the case in the capture of Fallujah in November 2004. Such a method, however, has a number of drawbacks that are not always acceptable. These are, first and foremost: significant losses to own forces, civilians and the enemy, a very high use rate of ammunition and means of warfare. What is more, urban infrastructure facilities are destroyed as well. In addition, this type of combat is exhausting, both physically and mentally. Such a linear approach is generally carried out by a substantial infantry force supported by tanks, helicopters and other means. The model of military operations in built-up areas cited above is not always proving effective. This is exemplified by the involvement of significant Russian forces in the months-long battle for the town of Bakhmut in eastern Ukraine, where the Russian side failed to achieve a settlement and frontal infantry assaults and the actions of small assault groups led to only minor tactical ground gains (https://www.rp.pl/konflikty-zbrojne/art38086091-think-tank-rosja-nie-bedzie-w-stanie-wykorzystac-zdobycia-bachmutu). According to selected experts from King's College London, Bakhmut is of strategic importance to both warring sides. The capture of this town could involve the further advance of Russian troops

towards the city of Kramatorsk and the seizure of control over key communication routes in the area for Ukrainian troops. In addition, the fall of Bakhmut would weaken the morale of the Ukrainians and raise doubts in Western countries about the combat capabilities of the Ukrainian armed forces and consequently the wisdom of continuing to support them (Iwanowa, Sosnytska, Fill, 2023). The example of the fighting for Bakhmut also shows that built-up areas provide a space for the defender to inflict high losses on the enemy at the expense of proportionately lower own losses. Certain experts are convinced that the capture of Bakhmut would be so costly for the Russians that they would not be able to continue the advance for some time. Therefore, the eventual fall of this city would not be regarded as a turning point in the war, and its importance is seen more symbolically than strategically (The Kyiv Independent news desk, 2023).

Experience gained in Ukraine shows that in the case of a built-up area, defence is prepared by organising the front line of defence on the outskirts of the city. Defence of the entire built-up area is often impossible due to lack of forces, hence the main effort of defence should be concentrated on maintaining thoroughfares and transport nodes and important elements of the built-up area structure (power plants, thermal power plants, treatment plants, workplaces, hospitals, etc.). Controlling the specified vital elements of a built-up area should be based on the organisation of classical defence in a built-up area, i.e. the principle of a resistance node ready for encirclement combat. The principle that the defence is organised on the basis of mutually supporting nodes of resistance positioned deep within the area to be defended in conjunction with the activities of manoeuvring reinforcements should continue to be upheld and considered valid. These retreats should be allocated at each level, deployed as a rule centrally, and intended for counter-attacks and gap cover, as well as other tasks.

The nature of the defence and the course of the forward defence line will depend on the type and number of forces available and the size of the built-up area being defended. The organisation of resistance nodes in the built-up area should provide opportunities for mutual tactical communication and prevent the enemy from entering the wings of the defence area. The resistance node should make it difficult for the enemy to manoeuvre his forces and carry out firing.

The defender troops should make use of their familiarity with the built-up area to engage in proactive measures. Active patrolling, raids and ambushes, organised at any level, can prove to be quite effective in order to surprise and break the enemy's advance. Effective conduct of such operations requires adequate information resources, obtained in real time. While modern technological solutions make it possible to acquire a range of data, experience also shows the need for personal information sources in urban warfare. The nature of the built-up area means that there are many blind spots and covered fields. The possibility of carrying out observation under these conditions becomes considerably minimised. Consequently, many difficulties may arise during the organisation of the firing system. The firing positions must be selected with extreme care in order to be able

to cover the entire area with firing (Bujak, 2000). Urbanisation means that in the area of operations, successful observation and firing would be possible in about 60% of the terrain up to a distance of 400–600 m, and only in 5–15% up to 1–3 km.

During combat in cities, extensive use should be made of landing and assault groups (subunits), the task of which together with assault groups would be capturing buildings defended by the enemy "from above", so to speak. The underground infrastructure in the city should also not be forgotten and, as far as possible, it should be used to attack the defended facility by ad hoc elements of the combat grouping created (Fig. 1). This helps minimise the losses that could result from a frontal assault. When the defender attempts to draw the attacker into a defended area, the attacker must decide whether to attack that position or merely overpower the defence with fire. He may also block the defender's position and bypass (flank) it in order to continue the advance into the area, leaving the problem of fighting the enemy defending the built-up area for later.

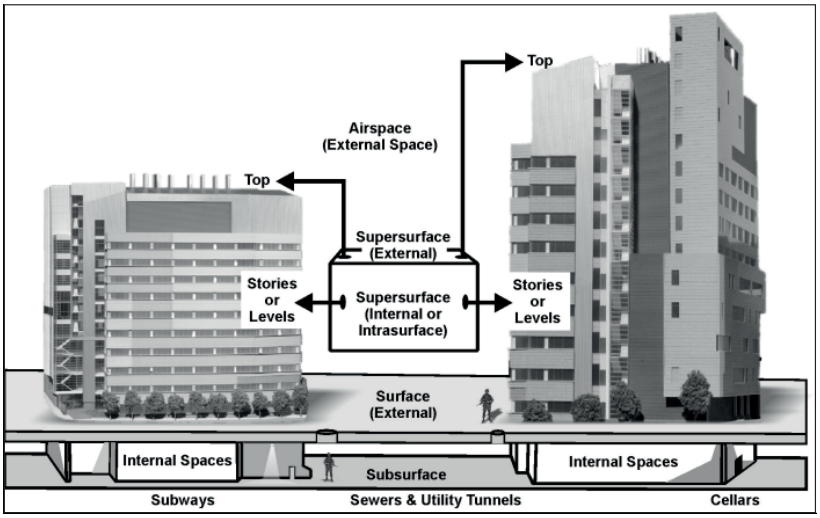

Figure 2. Structure of operations in a city

Source: *ATTP 3-06.11 Combined arms operations in urban terrain,* Headquarters Department of the Army Washington, D.C., 10 June 2011, p. 16

Another characteristic feature of operations in cities is clearing, which is fighting carried out in a subjugated area to drive the enemy out of the urban complex. This stage is characterised by decentralised operations of appropriately reinforced infantry subdivisions. In order to contain larger built-up areas, it may be necessary to first clear a 'corridor' and then the rest of the adjacent area.

An important factor in planning and conducting combat in built-up areas is to reflect on the impact that the effects of these actions might have on the civilian population residing in these areas. Combat executed in these areas can cause significant civilian casualties and extensive damage to infrastructure. Among the

greatest dangers involved, there is also the possibility of a major epidemiological threat. Experience from Ukraine even suggests that crimes against the humanitarian law of armed conflict may be committed against civilians in the embattled built-up areas. This is exemplified by the bestiality of the Russian army in the town of Bucha and the entire Kiev region, where, as early as April 2022, more than 1,200 corpses of civilians were discovered, the vast majority of whom had been shot dead (Żochowski, 2022).

To ensure the best possible functioning of the civilian population, close cooperation should be established and constantly maintained between civilian authorities, territorial defence commanders and tactical commanders at all levels. As far as possible, in addition to priorities arising from the execution of the combat task and securing the material of the fighting troops, the tactical commander should provide (or help to provide) evacuation, food and medical care, the maintenance of public order and security, essential services and the prevention of unexpected consequences of hostilities (Bujak, 2000).

Desirable developments of activities in the urban environment

The increasing trend of positioning operations in built-up areas and the political constraints demanding the reduction of casualties among themselves and among civilians not directly involved in the armed struggle significantly reduce the usefulness of previous experience. Troops involved in execution of operations now need a new concept of operations in built-up areas that would enable them to achieve their objectives (political, military) without destroying cities or causing politically unacceptable levels of casualties. One of the new developments are rules whose observance enhances the effectiveness of operations and places considerable emphasis on shaping the situation before and during the operation. Changes are also taking place in the concept of military operations based on a network-centric approach intended to gain an advantage over the adversary.

Future operations are first and foremost aimed at the need to dispense costly operations, following the principle of winning wars with limited costs. Unacceptable costs are primarily the lives of civilians and soldiers. The picture of contemporary operations is one of dynamic, precise and systemic operations based on the use of modern military technology, referred to as 'network-centric warfare', in which a fundamental role is played by information. The success of the fighting groupings on the future battlefield will depend on gaining an advantage in the areas of (Figure 3): knowledge, speed (manoeuvrability) and precision striking.

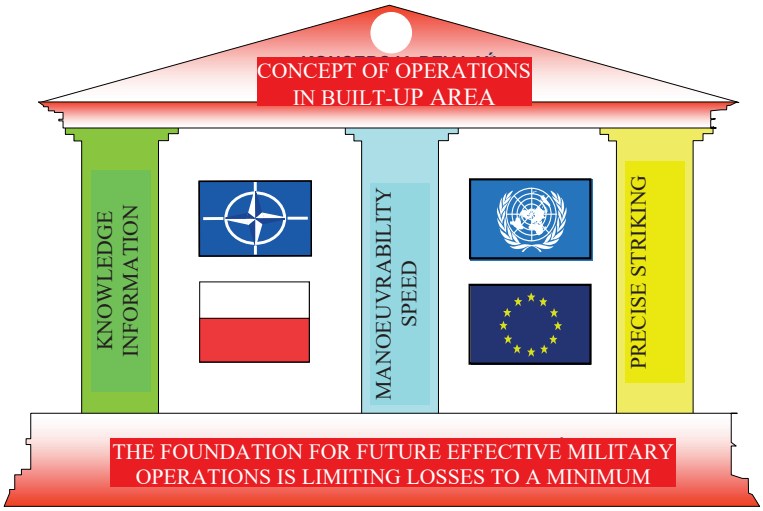

Figure 3. Main principles of future activities in the built-up area

Conflict analysis indicates that the most relevant factors for achieving a high level of effectiveness in a build-up area setting, in addition to the classic principles of combat, include: principles of impartiality, credibility, transparency of operations, mutual respect, unity of command, freedom of action and limited use of force. The presence of civilians forces troops to be stricter in target selection, to limit the use of high-powered and low-accuracy weaponry (aviation and artillery), use non-lethal weapons, and furthermore adopt completely different tactics for capturing and clearing buildings. Experience shows that in a situation of technological superiority, it is most effective to conduct operations at night, which leads to a reduction in losses among non-combatant populations and facilitates the detection of the enemy.

Any military action should be preceded by an extensive political and diplomatic campaign. In a certain systematisation for the shaping of the situation in the terms of operations in the built-up area, it is possible to distinguish certain phases that can determine success, and namely: demilitarisation of the built-up area, assuming military control and improvement of the security situation (full control of the city), reconstruction of the administrative and security structures, transfer and support of new structures in assuming power and maintaining order**.**

A further limitation in an urban environment is the limited command of operations. Lower-level commanders will have a great deal of freedom to perform a variety of tasks, so it is important that they are well prepared to fight in such an environment. Urban operations break down into multiple clashes along independent directions, so the success of the operation is a component of the success of small subdivisions.

The specific nature of the built-up area and the nature of threats involved prompt the adoption of an innovative approach to solving crisis situations.

Military special forces, gendarmerie, the police and independent anti-terrorist subdivisions are predisposed to operate in this environment and are well versed in 'black tactics' as a range of knowledge for fighting the enemy located in buildings, airports and other elements of the city. Ground troops (groupings) assigned to these tasks should complete specialised training under the supervision of the mentioned units. The basic factors shaping the concepts and functioning of land army groupings are: experience and knowledge, security challenges and threats, operating environment, structures, equipment and training of troops, allied commitments and technical progress.

The limited ability of using modern technology in built-up areas translates into the need of fighting at short distances and in direct contact with the enemy, which has remained unchanged over the years. On more than one occasion, there will be situations in which combat can spiral out of commanders' control and into chaos and carnage. In turn, the use of modern military developments such as robots, unmanned vehicles or energy-guided weapons may lead to situations where the deprivation of life becomes impersonal (Latiff, 2018). The future training of soldiers scheduled to operate in built-up areas should therefore go significantly beyond the classical understanding of armed combat and also include ethical, humanitarian, civil-military cooperation or information activities.

Conclusions

The experience of the conflict in Ukraine confirms the strategic importance of cities and built-up areas in modern and prospective military confrontations. The course of the fighting indicates that the Ukrainian side has developed and deployed effective urban warfare, using a range of favourable factors, both natural and man-made, to its advantage. While Russia has invariably relied for many years on a brutal combination of siege warfare with heavy and indiscriminate bombardment of cities, Ukraine has been developing and refining methods of fighting in built-up areas, using cities as strongholds and bases of operations (Ljungkvist, 2022).

The strategic value of cities keeps constantly increasing. Urban areas are centres of national identity, history and culture and are therefore seen as having key importance from the strategic viewpoint. For the first time in the history of our civilisation, we are facing a situation where more people live in urban areas than outside cities, a percentage that is expected to rise to 68 per cent by 2050 (Gisel, el al., 2021). In view of the possibility of gaining an advantage over the opponent provided by built-up areas, engaging the opponent in urban warfare may in future become part of the strategy of the operation and provide the defender with the opportunity to offset the dominance of the more powerful aggressor. On the other hand, the advancing force can tie up the opponent in the cities, preventing the defender from committing available forces in other directions (Gisel, el al., 2021).

Conclusions from local conflicts and an analysis of the research literature indicate that in the above described conditions the fighting is characterised by: the involvement of disproportionately large numbers of troops, the use of a larger number of subdivisions fighting on foot, fighting conducted at three levels (street, on rooftops and buildings, and underground – in drains and underground passage and tunnel systems), the intensive use of short-range weapons and hand grenades, the decentralised use of many types of troops including especially tanks and artillery for direct fire, difficulties in commanding and maintaining communications due to the decentralisation of command, the increased threat of combat vehicles to attack at close range, and the high consumption of ammunition and other combat assets (Frost, 1988).

Summarising the discussion on military operations in built-up areas undertaken in this article, the following conclusions may be drawn:

- use of tanks, combat vehicles, armoured personnel carriers is hampered by limitations in observation, fire and manoeuvring;
- vehicles (tanks, transporters, combat vehicles) used in urban combat have a psychological effect on the enemy (demonstration of strength); however, they should be tracked to reduce the risk of damage;
- soldiers will operate on foot, yet they should be directly supported by heavy armoured assets (tanks, combat vehicles);
- soldiers should be furnished with equipment facilitating operations in built-up areas, i.e. uniforms, night-vision devices, radio transmitters, weapons adapted to urban combat (small arms, small arms, grenade launchers, grenades, etc.), and should be able to carry out their duties in urban areas;
- the complexity of urban combat will necessitate the adoption of specific groupings such as assault, track, cover, fire groups, etc.;
- the battle will be split into a number of independent foci and so there will be difficulty in command and cooperation, consequently success will depend on the initiative of lower-level commanders;
- there will be a variation in the type of action, once buildings have to be conquered, then defended, and a captured area (quarter) taken over.

Such operating conditions contribute to the need of using appropriate operating tactics, which should allow tasks to be carried out efficiently and quickly. Accordingly, the aim should be to:

- isolate of urban areas creating the possibility of evacuating civilians from the area of operations;
- strike and capture the key areas that constitute the vitality of the urban complex;
- clear and assume control (stabilising the situation) of the captured areas;
- carry out further strikes in order to take control of the entire urban area;
- fortify and maintain control of the city.

In such a situation, the success of operations will depend on the cooperation of all types of troops. Despite the difficulties in making use of the full combat

capabilities of tanks and combat vehicles in built-up areas, they will continue to constitute the basic and direct support of soldiers storming or defending buildings. Preventive and stabilisation operations in Iraq may be considered proof of this. The Americans made extensive use of heavy equipment such as tanks or armoured personnel carrier in the composition of urban assault groups. Heavy armoured equipment provided accurate, direct fire support.

However, the strategic importance of infrastructure associated with built-up areas leads to a situation in which the aggressor will make use of various means of influencing the defender, which include not only land-based combat platforms but also long-range means launched from land, air and even sea platforms. The experience of the conflict in Ukraine emphatically confirms the above assumption.

In conclusion, many armies are currently looking for new concepts appropriate for operations in built-up areas, on the basis of which a framework for doctrine, technology and training could be established. Future effective concepts of operation in the built-up area environment should be based on: manoeuvring to gain superiority, continued operations of ground forces in conjunction with air support, precision fire strikes and combat operations, focused and precision-oriented logistics, full-scale protection and a combined command and control system. There is no doubt that this new concept of conducting operations in built-up areas will contribute significantly to the vision of future ground troops operations. The ever-increasing demands on operating troops mean that careful preparation is required for operations in this environment. Not only is it important to properly structure, equip and train troops, but the intellectual preparation of commanders and soldiers is equally important.

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STRATEGICZNE ZNACZENIE MIAST W ASPEKCIE WOJNY W UKRAINIE

Abstrakt

Druga potęga militarna świata, za jaką od wielu lat jest uznawana Rosja, 24 lutego 2022 r. rozpoczęła uderzenie na Ukrainę. Miała to być bardzo szybka i sprawna operacja pokazująca siłę militarną i skuteczność Rosji. Większość ekspertów prognozujących przyszłe wojny była zgodna, że przyszłe operacje militarne to przede wszystkim potrzeba rezygnacji z kosztownych działań, kierując się zasadą wygrywania wojen ograniczonymi kosztami. Rysujący się obraz przyszłej wojny to konflikt o charakterze hybrydowym z naciskiem na sferę działań informacyjnych, psychologicznych i działań cybernetycznych oraz starcia nowych technologii. Koszty, które nie mogą być akceptowane, to przede wszystkim życie ludności cywilnej i żołnierzy. Obraz przyszłej operacji militarnej to działania bojowe prowadzone w sposób dynamiczny, precyzyjny i systemowy z wykorzystaniem nowoczesnej techniki wojskowej.

Jednak nic takiego się nie stało, upłynął już ponad rok od rozpoczęcia konfliktu, a jego charakter jest daleki od prognozowanych założeń. Miasta stały się najbardziej pożądaną przestrzenią walki, co w konsekwencji prowadzi do wielu ofiar wojny i wyniszczenia infrastruktury Ukrainy. Mając to na uwadze, zasadniczym celem badań była identyfikacja czynników, które przyczyniają się do prowadzenia działań militarnych w terenach zabudowanych, oraz przedstawienie uwarunkowań skutecznych działań w terenie miejskim w aspekcie toczącego się konfliktu w Ukrainie.

Główny problem badawczy na potrzeby realizowanych badań wyrażono w postaci pytania: *Dlaczego tereny miejskie są tak istotne w trwającym konflikcie w Ukrainie oraz jaka jest specyfika i jakie czynniki wpływają na skuteczność działań w terenie zabudowanym?*

Do badań przyjęto założenie, że miasta i rejony zabudowane, jako ośrodki polityczno-administracyjne, ekonomiczne, przemysłowe i kulturowe, zyskują na znaczeniu. Są one zazwyczaj węzłami kolejowymi i drogowymi, posiadają obiekty portowe i lotniskowe, a w ich oroczeniu rozmieszczone są elementy infrastruktury krytycznej. Miasta posiadają znaczące zasoby wykwalifikowanych kadr oraz stanowią zaplecze surowcowe i przemysłowe, są kluczowe dla funkcjonowania państw i regionów.

Doświadczenia z konfliktu w Ukrainie potwierdzają kluczowe znaczenia obszarów zabudowanych, których utrzymanie determinuje powodzenie działań militarnych. Uzyskane wnioski stanowią potwierdzenie wyników badań konfliktów zbrojnych przełomu XX I XXI wieku oraz współczenych nam konfrontacji militarnych, w świetle których obszary zabudowane pozostają podstawowym środowiskiem działania wojsk.

Słowa kluczowe: bezpieczeństwo militarne, zagrożenia militarne, reagowanie kryzysowe, potencjał militarny, strategie bezpieczeństwa, działania militarne