
Key Milestones in Urban Operations

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Abstract

Both the Russian-Ukrainian war and the conflict in the Gaza Strip underline the importance of the cities and urban terrain in combat operations. The battles for Kiev, Mariupol, Bakhmut, Gaza, and Rafah demonstrate the scale, intensity, and ferocity of the combatants' actions, as well as the sensitivity of the operational process in the context of a transparent and highly contested operational environment. The new demands of today's operational environment require adjustments to the planning process preparing and execution of the military operations. The urban environment, by its specificity, generates a series of implications for combat operations, which become essential benchmarks of the operational process.

In this context, the objective of this paper is to identify and describe the milestones of the operational process related to urban operations. While the results of the research offer empirical solutions, their value is enhanced by the theoretical contribution they make to tactical-level commanders in terms of the approach to this type of operation.

Keywords:

combat operations; urban environment; urban triad; combined-arms warfare.

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Recent estimates and expert studies indicate that the global population will reach 9.8 billion by 2050, an increase of 2.1 billion from the current figure. The growth will be gradual but disparate on a global scale, with Asia, South America, and Africa exhibiting particularly rapid expansion. Concurrently, an increasing proportion of the population will opt to reside in urban areas, resulting in the expansion of urban settlements and the stimulation of economic growth. However, this phenomenon will exert pressure on governmental institutions, particularly in developing countries (UK Ministry of Defence 2024, 13). Furthermore, by the middle of the century, it is projected that approximately 60.5% of the global population will reside in urban areas, representing a notable increase from the current estimate of 48.3% of the total population employed in urban settings (UK Ministry of Defence 2024, 126).

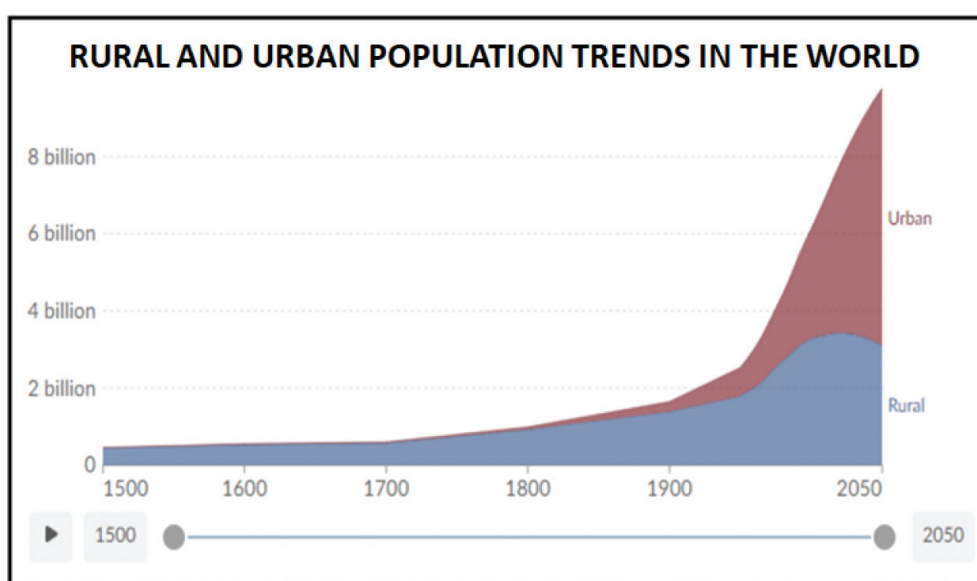


Figure 1 Comparative rural and urban population trends in the world (period 1500-2050)

Source: Hannah Ritchie, Max Roser, *Urbanization*, <https://ourworldindata.org/urbanization>, accessed on 12.11.2024.

In this context, studies conducted at the allied level, based on an analysis of demographic trends, the evolution of the geostrategic and security environment, the development of high technologies and their influence on society, indicate an increase in the frequency of armed conflicts in urban environments (NATO 2018). In his analysis, Canadian security specialist Robert Muggah posits that urban areas will become the new frontier of war in the context of global conflict (Muggah 2015) and Lawrence Freedman posits that megacities will become the epicenters of human activity on the planet, and thus the site of the majority of conflicts necessitating military intervention (Freedman 2019, 349).

The heightened sensitivity of conflicts in urban environments is a consequence of the distinctive attributes inherent to such settings. The physical agglomeration of urban environments, both horizontally and vertically, coupled with the presence of underground networks, critical infrastructure elements, a congested electromagnetic

environment, extensive media facilities, and the human factor, collectively serve to render military operations in such particularly challenging settings. The experience of past conflicts demonstrates that the destructive capacity of urban environments can be a significant factor in military operations. The adage “cities destroy armies and armies destroy cities” is illustrative of this phenomenon (Chychota 2019, 295). The hypothesis is validated by contemporary armed conflicts, witnessing the battles of Mariupol, Bakhmut, Avdiivka, Gaza, and Khan Yunis.

In light of the heightened probability of armed conflicts in urban settings, a comprehensive evaluation of the operational procedures for such confrontations is imperative. The topic of urban warfare has attracted considerable interest from military theorists and leaders, with a substantial body of literature examining the implications of cities for the design of strategic operations (Department of the Army Headquarters, TRADOC Pamphlet 525-92-1 2020), the need to achieve effects at the joint level of operations to fulfill the conditions necessary to achieve the desired end state (US Joint Chiefs of Staff, JP 3-06 2013) and the difficulty of decentralized tactical operations down to the lowest level (NATO, ATP-3.2.1.2 2022).

The objective of the analysis is twofold: firstly, to describe the principal milestones that have shaped our understanding of the urban environment; and secondly, to identify the factors that have led to a need for change in the specific operations of urban armed combat. Finally, from the standpoint of these findings, the principal objective of the research is to ascertain the doctrinal and operational implications that have emerged as a consequence of the new demands of the contemporary operational environment, both in terms of action and organization.

In order to direct the research effort, we sought to address the following questions:

- What are the fundamentals of combat operations conducted in the context of urban environments?
- What are the factors that make it necessary to reconsider armed combat in the urban environment?
- What are the implications for urban operations in the context of the new requirements of the operating environment?

The interrogation of open sources about the conduct of combat operations in the conflicts in Ukraine and the Gaza Strip has yielded empirical results. It is imperative to enhance these findings and corroborate them through the utilization of war gaming and military exercises. Moreover, it is important to consider the possibility that some data and information may have been altered to some extent, either due to operational security requirements or the intention to mislead and influence the warring parties.

The understanding of the urban environment and the fundamentals of urban operations

The complexity of the urban environment, and thus the difficulty of related military operations, arises from the existence of a multitude of multidimensional systems and

subsystems, which are both interconnected and interdependent. These systems can be classified as either physical or non-physical, including the physical system, the population, and the information system. (Department of the Army Headquarters ATP 3-06, MCTP 12-10B 2017, 1-3). Collectively, these elements constitute what military analysts refer to as the *urban triad*.

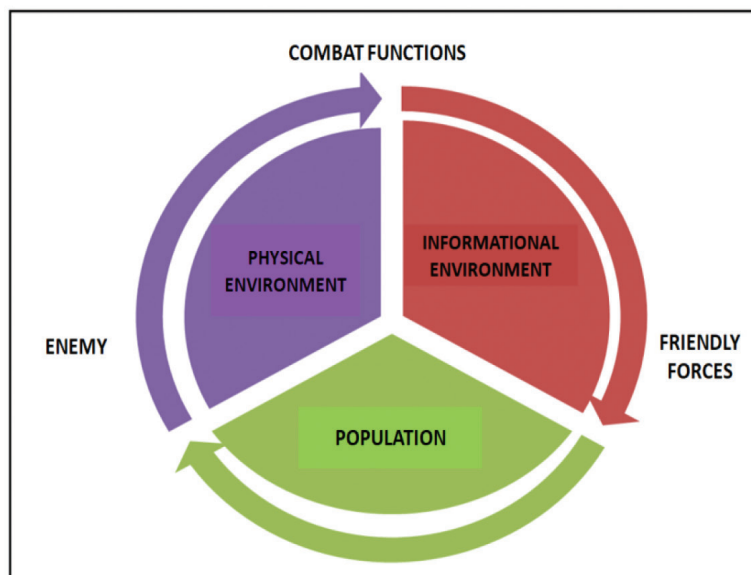


Figure 2 Urban triad

Source: Department of the Army Headquarters ATP 3-06, MCTP 12-10B 2017, 1-3.

The physical system of the urban environment is constituted by the land features. The urban terrain comprises two principal components: a natural component, comprising landform details, and an artificial component, comprising infrastructure and human-made constructions. In addition, the urban terrain includes the space in the vicinity of human settlements. The physical system is characterized by the imprint of the main attributes of the natural component in terms of the spatial configuration of the city. Concurrently, the anthropogenic element is shaped by the extent of economic advancement, the prevailing cultural norms, and the social stratification of the population.

The population constitutes the core of the urban system and plays a pivotal role in influencing the conduct of military operations. The city is divided into distinct socio-economic zones, comprising affluent residential areas, middle-class residential areas, and poor suburban areas. The type and layout of buildings, existing facilities, and the varying population densities in these areas may influence the approach to combat operations in urban areas. It is also incumbent upon military planners to take into account the economic factor, as well as ethnic, cultural, and religious diversity. Inevitably, the total evacuation of the civilian population from urban areas during periods of conflict will not be feasible (Arnold and Fiore 2019). The battles in Mosul, Ramadi, and also in Mariupol, and Gaza serve to corroborate this assertion. The information system encompasses all communication systems and networks

pertaining to the urban center. The system is distinguished by a high degree of fluidity, with interconnections to the local infrastructure and a capacity to be influenced by human interaction (NATO Standard, AJP-3.2 2022, A-3). A further crucial aspect of this system is the continual alteration of its constituent elements and procedures, which exerts an impact on the operational context and on how commanders and their staffs interact with it. The high degree of permeability of this system provides opportunities for all actors. In light of the sensitivity and unpredictability of actions in the cyber domain and the electromagnetic spectrum, coupled with the difficulty of preventing and countering them, a complex asymmetric threat environment emerges. The asymmetry inherent to these environments arises from the potential for hostile actors to undertake actions without adherence to international law (Pamment, et al. 2019, 61). Although the exploitation of information systems can confer significant advantages upon friendly forces, enabling the influence of the population and the creation of an environment favorable to the execution of the operation, it also provides adversaries with a relatively straightforward means of influencing military operations.

It is imperative that military operations in urban environments consider these systems, as their manifestation influences the operational process irrespective of the campaign rationale or the nature of the operation. In light of the significant influence that the local population can exert on military operations, military planners must consider the necessity of conducting operations that encompass the full spectrum of their potential manifestations, including combat operations, security, and peace support operations. In addition, the tactical actions that may be employed within these types of operations include offensive and defensive actions, counter-insurgency operations, counter-terrorism, humanitarian assistance, the evacuation of non-combatants, support to local authorities, and so forth. Nevertheless, in addition to the examination of these systems, a PMESII analysis of the urban environment is essential for a comprehensive evaluation of the urban environment and to gain a coherent understanding of a potential setting for military operations. Furthermore, in the context of tactical operations, it is imperative that intelligence preparation of the battlefield exercise due consideration of the civilian component, which has the potential to exert a decisive and irreversible influence on the conduct of operations, thereby either enhancing or undermining the prospects of success.

Key factors to reconsider urban operations

In recent decades, Western militaries have concentrated their resources on responding to the challenges posed by large-scale, low-intensity conflicts in the Middle East and North Africa. The demands of counter-insurgency operations have shaped a number of defining features in military doctrine, force configuration, training, and the equipping of combat technology and weapons systems. Furthermore, the prioritization of the civilian population in military operations

has necessitated the development of a distinctive approach to warfare, with a considerable influence on the design of these operations. Potential adversaries of the Western armies have frequently been able to nullify their quantitative and qualitative superiority by employing asymmetric and unconventional methods and capabilities. Consequently, many conventional capabilities were overlooked, as was conventional warfare training (Scrogin 2019, 19-20). The necessity to preserve the security of the population while simultaneously defeating an ill-defined adversary led to the adoption of a minimum casualty-oriented approach among the own forces. In light of these considerations, and also taking into account the increased likelihood of the materialization of conventional armed conflicts, it is evident that *a transition from counter-insurgency operations to specific armed combat operations is required*. This transition must be made in both a mental and physical sense. The rethinking of military doctrines, reconfiguration of tactical formations, and reconstitution or revitalization of conventional capabilities are contingent upon the mental acceptance of this necessity by political and military leaders.

The necessity to integrate operations at the multi-domain level is also a factor in the imperative to rethink military operations in the urban environment. The convergence of effects from all domains of operations, including actions in the electromagnetic spectrum, cyber, and information, has prompted military specialists to redefine the defining benchmarks of military operations in order to maintain relative military superiority. The North Atlantic Alliance's foundational doctrine defines multi-domain operations as the orchestration of all military and non-military actions across all domains of operation, with the objective of ensuring the timely and effective delivery of effects (NATO Standard, AJP-1 2022, 3). The complexity of combat operations in an urban environment and their extension beyond the dimensions of classic areas requires the concerted use of specific *"capabilities in all domains of the battlespace, which are aimed at achieving success in the most effective way."* (Vereş 2024).

The advent of new technologies and weapon systems has had a significant impact on the evolution of tactics, techniques, and operational procedures. Furthermore, the enhanced lethality of modern combat is a direct consequence of the advent of new technologies and weapon systems. The extended range, enhanced accuracy, and diversification of multispectral sensors have facilitated the advancement of these technologies.

A further factor that necessitates a reassessment of particular urban combat operations is the enhanced visibility of the battlefield. As the battlefield becomes more technologized, *"it has become increasingly difficult to conceal military forces and actions nowadays"* (Toroi 2024), forcing military commanders to look for new innovative and creative ways to hide their intentions and forces. Finally, the algorithm of potential enemy combat influences the doctrinal and operational adaptation of Western forces. The operational behavior of the Russian forces in Ukraine allows for the identification of an algorithm that places significant emphasis on the central role of artillery, the capacity to accept a considerable number of casualties among

one's own forces, and tolerance for casualties and collateral damage. It would appear that the Russian model is based on an approach centered on the historical balance of forces, which does not satisfy the requirements of the dispersion principle. Furthermore, it draws attention to the ineffectiveness of modeling operations and the overuse of imprecise strike vectors. The disproportionate destruction carried out by the Russian army to achieve the tactical objectives of the siege of Mariupol and the battles for Bakhmut and Avdiivka is evidenced by the sieges themselves and the battles that preceded them ([Butler 2023](#)).

Implications arising from factors requiring reconsideration of urban operations

The factors that generate implications for operations in the urban environment are reflected in the operational process and have a direct impact on the combat functions, the organization, and the composition of tactical formations, tactics, and operating procedures.

Combat functions

In conceptual terms, combat functions represent “the principal tools at the disposal of the commander, which he integrates and coordinates within operations in order to synchronize effects in terms of time, space and purpose.” ([Statul Major al Forțelor Terestre 2017](#), III-13). The integration of these elements into the fighting power of tactical formations, in accordance with the requirements of the operational environment and enemy actions, is the foundation upon which the combat effectiveness of those formations is built. The urban environment is distinctive in terms of the manner in which these functions are integrated, and thus it is essential to conduct an analysis in order to ascertain the necessity for reconsideration of urban operations and to identify potential solutions for their adaptation. In light of the aforementioned considerations, the analysis encompasses a range of operational aspects, including command and control, intelligence support, maneuver, fires, force protection, and sustainment.

• Command and control

In an urban environment, command and control is particularly susceptible to disruption due to the necessity for decentralized operations. This, in turn, gives rise to the need for force disaggregation and the implementation of additional measures to ensure the synchronization of actions and the coordination of forces. Agglomeration of the electromagnetic environment, and the vertical development of the urban terrain, restrict communications. Obstruction of observation fields requires drastic control measures to avoid fratricide or collateral casualties. It is therefore essential to ensure the continuous updating of the forces' position in order to guarantee the success of the operation and the timely execution of the required support. The most accurate means of monitoring position is through the use of

Global Positioning Systems (GPS). The deployment of satellite imagery or drones for the surveillance of forces engaged in densely populated areas also serves to enhance their control capability. Nevertheless, the efficacy of these capabilities may be constrained in densely populated urban areas and in the face of multifaceted challenges to one's own forces. In such contexts, where ambiguity and uncertainty prevail, the autonomy of decision-making and initiative on the part of commanders is indispensable for the effective conduct of the operational process.

- *Intelligence*

The integration of intelligence as a function of combat presents particularities generated by the specificity of the confrontation environment, and the difficulty of obtaining timely and accurate information is evident. The perishability of information is high, due to the reduced possibilities of maintaining positive identification/PID. As a result, the find-detect-identify-surveil cycle has to be repeated more often than under other conditions and requires significantly more reconnaissance capabilities and elements. In most cases, the human factor is decisive, but various sensors produced by new technologies can complement human resources. Thus, UAS, IMINT, SIGINT, but also MASINT capabilities become valuable tools in this highly constrained environment. During conventional operations, particularly offensive operations, commanders should employ HUMINT capabilities to obtain information from resident civilians, refugees, and displaced persons, and to interrogate detainees and prisoners of war ([Department of the Army, FM 2-0 2023, 1-18](#)).

- *Maneuver*

The maneuverability of conventional forces is severely restricted in an urban environment, and the actions of mounted forces are channeled along the streets. The fragmented nature of the terrain requires a compartmentalized and methodical approach to combat operations, creating the need to divide the city into rectangular areas of operation, clearly delineated by streets and corresponding to the capabilities of the unit to which it is assigned. Buildings, canals, and other infrastructure create obstacles for the attacker and favor the defender. In most cases, the capturing and securing of an objective implies seizing and securing each building, complex of buildings, and that is why the maneuver of forces in an urban environment has a reduced speed. The experience of the Israeli forces in the Gaza Strip shows that it is not advisable to assign non-contiguous areas of operation to the forces engaged in the main lines of the offensive ([Watling and Reynolds 2024, 1](#)). The use of armored forces in urban environments must be based on a careful assessment of the threat, with the infantry-tank binomial most often being the appropriate solution for urban maneuvers. The success of maneuver operations depends to a large extent on the provision of cover forces to neutralize enemy anti-tank elements, ambushes and snipers, and light infantry elements to provide close protection for armored vehicles. Commanders must therefore strive to achieve an optimum balance between mounted and dismounted forces. The maneuver of armored forces can be facilitated by shaping operations carried out by forward detachments or tactical airdrops.

However, these tactical capabilities have relatively low combat power and are limited in their ability to sustain operations. Finally, the success of maneuver forces is contingent upon the efficacy of fire support and the capacity to guarantee force mobility. Based on the insights gained, it can be posited that artillery strikes may yield a favorable outcome in the context of the immediate tactical situation. However, such strikes inevitably result in destruction, which subsequently constrains maneuver possibilities. Consequently, it is imperative to integrate engineer capabilities with maneuver elements to ensure the clearance and establishment of mobility corridors ([Department of the Army Headquarters, TRADOC Pamphlet 525-92-1 2020, 19](#)).

- *Fire support*

Fire support is more difficult to achieve in urban environments, on the one hand, because of the fragmentation of the terrain and the difficulty in spotting and identifying targets, and on the other because of the risk of collateral damage and casualties. Although the recent conflicts in Ukraine and the Gaza Strip highlight the propensity of the forces to use their fire support capabilities, they retain only a shaping role, with maneuver forces' action being necessary to defeat the enemy ([Mirea 2024](#)). Furthermore, the probability of fratricide is elevated when observation and firing sectors are obstructed. In this regard, the implementation of effective fire support control measures and the utilization of collateral damage estimation (CDE) are of paramount importance. It is therefore essential that fire support capabilities be tailored to the intended effects. While the use of smart munitions may be advantageous, it is imperative to consider the potential risk of jamming. The most appropriate anti-tank weaponry is that which is portable and guided, such as anti-tank missile systems. The aforementioned capabilities, through their fire-and-forget, top-attack, or flying top-attack functions, prove to be highly advantageous in urban combat. The battle for Kyiv in the initial phase of the conflict in Ukraine serves as an illustrative example in this regard ([Johnson 2022](#)).

- *Protection*

In light of the reduced operational tempo and constrained maneuverability, there is a compelling need for multidimensional protection in the urban environment for both mounted and dismounted forces. It is only through the coordination of maneuver and mutual support actions, both at the level of the aforementioned capabilities and between adjacent tactical formations, that the specific vulnerability of those elements can be reduced ([NATO, ATP-3.2.1.2 2022](#)). Furthermore, there is a significant requirement to provide protection for military personnel against a range of potential threats, including ambushes, sniper attacks, unmanned aerial vehicles (UAVs), and improvised explosive devices (IEDs). In this context, the provision of cover and security elements acquires considerable importance.

- *Sustainment*

The urban environment exerts considerable pressure on the logistical system, particularly in the context of combat operations. Ammunition consumption is high,

supply routes can be easily intercepted by the enemy, and medical evacuation is often by land. However, the urban environment provides a number of facilities to combatants, even if these are only temporary and should not be incorporated into the operational equation. These include sources of electricity, food and water, civilian medical facilities, accommodation and shelter, and so on.

Force organization and composition

The initial phase of the Russian Federation's invasion of Ukraine revealed the shortcomings and ineffectiveness of the battalion-level tactical groups (BTGs) deployed in offensive operations, including those conducted in urban centers (Jones 2022). Despite their independent operational capabilities, including in urban environments, these units could not be integrated as a unified force into large-scale offensive operations. Moreover, they were unable to benefit from the intended effects of the shaping operations that were to be conducted by the upper echelons in their support (Kofman and Lee 2022).

Consequently, the Russian Federation has abandoned the use of battle groups in favor of a return to the traditional configuration of tactical structures, comprising regimental and divisional units. In operations conducted in urban environments, these have been superseded by the introduction of assault detachments, which offer enhanced flexibility and adaptation to the specific conditions of such environments (Nistorescu 2024).

There is no definitive formula for the organization of tactical structures for urban combat. However, in the context of combat operations against an enemy with conventional and relatively equal capabilities, it is necessary to achieve a mix of forces, including heavy armor (tanks or infantry fighting vehicles), medium infantry (armored personnel carriers), and light infantry mounted on light armor and dismounted infantry. Furthermore, additional elements are incorporated, including artillery, air defense, combat engineers, and armored reconnaissance, as well as airborne capabilities. In the context of the military operations conducted in the Gaza Strip, the Israeli army has predominantly deployed brigade-level structures, comprising one heavy armored (tank) battalion, one mechanized battalion, one light infantry battalion, one engineer battalion, one artillery battalion, one special operations forces detachment and combat support elements decentralized down to the subunit level (Watling and Reynolds 2024).

Tactics techniques and procedures (TTPs)

The maintenance of relative superiority over the enemy is a fundamental aspect of TTPs, particularly in the context of multiple simultaneous clashes and tactical engagements. Furthermore, the decentralization of operations entails a decentralization of forces and capabilities, notably including support forces and capabilities. The success of combat operations hinges on a multitude of factors, including a comprehensive understanding of the operational environment and the

interrelationship between one's forces, the enemy, and the civilian population. It is imperative to recognize that one's forces are subject to constant monitoring and to seize and exploit advantageous positions, whether physical, informational, or derived from the perspective of the civilian population.

The initial contact with the enemy should be made with the smallest possible element, and challenges, options, and criteria for transition must be anticipated and identified. Gains must be consolidated and morale maintained. In the context of urban operations, the use of surprise, the rapid pace of action, and the ability to respond swiftly and effectively are crucial elements of successful tactics. Raids have the potential to inflict significant damage on enemy combatants, affecting both their physical and psychological capabilities. The contribution of airborne or air assault forces to the success of an operation must be weighed against their vulnerability, given the inherent limitations in space and time that constrain their combat possibilities. The failure of the Russian airborne operation to seize the Hostomel airport near the Ukrainian capital, Kyiv, is a matter of historical record that serves to exemplify this fact Kiev ([Collins, Kofman and Spencer 2023](#)).

The necessity for a three-dimensional approach to the terrain remains a significant concern, as evidenced by the experience of the conflict in the Gaza Strip. This highlights the importance of blocking off underground canals and tunnels, controlling basements and ground floors of buildings, as well as intermediate floors. However, there has been a notable decline in the tendency to occupy the top level of buildings or their roofs. This significantly reduces freedom of maneuver, with opportunities for observation from above being supplemented by drones ([Watling and Reynolds 2024](#), 6).

In the context of the high-intensity conflict in Ukraine, tanks were seldom employed as the primary assault element in urban combat. However, they were assigned to assault detachments and performed fire support for infantry, as well as penetrating non-explosive barrages or creating access routes through rubble on communication routes ([Watling and Reynolds 2023](#), 16).

Conclusions

The analysis provides an answer to the research questions and also highlights the necessity for the adaptation of the forces and the operations performed by them. Furthermore, it highlights the necessity of meticulous and continuous examination of the evolution of the operating environment as a prerequisite for fostering innovation and adaptation. The experience of recent military conflicts illustrates the fact that the conduct of military operations in urban environments necessitates a constant process of transformation and continuous adaptation, both in terms of doctrine and operational procedures. These transformations encompass a reconsideration

of conceptual approaches, an adjustment of tactics, techniques, and procedures, an organizational and compositional recalibration of tactical formations, the provision of new weapon systems and military equipment, the implementation of force training, and leader development. The adaptation of operations translates into a series of measures aimed at creating and employing combined arms formations tailored to the specific characteristics of the operating environment. The goal is to seize control of key terrain and critical infrastructure within the city, thereby leveraging the urban system effectively. The management of the local population, the containment of threats, the minimization of collateral damage and casualties, and the maintenance of the integrity of urban systems are also key considerations. Furthermore, the creation of a collaborative environment conducive to the cessation of hostilities and the transition to stability operations is essential.

It can be observed that combat operations retain their primacy in terms of difficulty and intensity, as well as the scale of casualties and disproportionate destruction. Despite the high costs involved, the materialization of urban combat remains a certainty, largely due to the tendency of the weaker side to exploit the advantages of the urban environment. It can be seen that defensive operations are advantaged, with research results indicating that the initiative is lost by the attacker once the forces enter the city. The pace of the offensive is slowed, with the necessity for the attacker to repeat the find-fix-strike cycle becoming increasingly prevalent. It is not feasible to completely isolate large cities, and the urban infrastructure allows defending forces to maintain their position for extended periods, particularly in industrial areas. It is similarly unlikely that the entire civilian population will be evacuated. Consequently, it falls upon the forces to address the challenges posed by the presence of civilians in the operational area. The most significant challenge lies in the ability to transition from combat operations to stability operations and vice versa. To achieve this, it is essential to ensure that tactical land forces receive comprehensive training and are adequately equipped. However, the most crucial aspect is to ensure that they are mentally prepared to make this transition effectively. The inherent risks associated with this period of change can be attributed to two key factors: the difficulty in accurately assessing the level of threat and the sensitivity of the transfer of authority between armed forces and government institutions.

In light of the technological aspect, it can be posited that the evolution of military operations in urban settings will be contingent upon the advancement of cutting-edge, nascent, and transformative technologies. It can be reasonably predicted that these will result in the advent and evolution of novel weapon systems that will have a considerable impact on tactics, techniques, and combat procedures. It is anticipated that the general trends in the evolution of weapon development will persist, with a continued focus on extending range and improving accuracy, coupled with enhanced target identification algorithms and the differentiation of civilians from hostile elements. The frequency of use of unmanned capabilities, including autonomous ones, represents another significant factor influencing the evolution of

urban operations. While these capabilities may initially be employed on secondary routes, for cover, reconnaissance, and surveillance missions, or as part of misleading operations, their broader integration into urban operations is likely to become increasingly prevalent. Nevertheless, despite the unprecedented technological advancement of the battlefield and its enhanced transparency, the adaptability of adversaries and the intricacy of the urban environment provide the foundation for leveraging its advantages.

It bears reiterating that the human element will continue to be of paramount importance in the context of military operations conducted in urban environments. Due to their distinctive capacity to engage with the civilian population, as well as with government and local authorities, ground forces will be the primary instrument in future conflicts. Their attributes afford them the capability to neutralize threats, resolve existing differences, and achieve the desired end state.

References

- Arnold, Thomas D., and Nicolas Fiore.** 2019. "Five Operational Lessons from the Battle for Mosul." *Military Review*. <https://www.armyupress.army.mil/Portals/7/military-review/Archives/English/JF-19/Arnold-Fiore-Lessons-Mosul.pdf>.
- Butler, Marcus.** 2023. "Russia's Response to the Challenges of Urban Warfare in the Russo-Ukrainian War." *Towson University Journal of International Affairs*. <https://wp.towson.edu/iajournal/2023/01/13/russias-response-to-the-challenges-of-urban-warfare-in-the-russo-ukrainian-war/>.
- Chychota, Michael T.** 2019. *Large-Scale Combat Operations in Urban Terrain*. Editor US Army Command and General Staff College Press Book. Vol. Large-Scale Combat Operations – The Division Fight. Army University Press.
- Collins, Liam, Michael Kofman, and John Spencer.** 2023. "The Battle of Hostomel Airport: A Key Moment in Russia's Defeat in Kyiv." *War on the rocks*. <https://warontherocks.com/2023/08/the-battle-of-hostomel-airport-a-key-moment-in-russias-defeat-in-kyiv/>.
- Department of the Army Headquarters ATP 3-06, MCTP 12-10B.** 2017. *Urban Operations*. United States Marine Corps.
- Department of the Army Headquarters, TRADOC Pamphlet 525-92-1.** 2020. *The Changing Character of Warfare: The Urban Operational Environment*. Fort Eustis, Virginia: U.S. Army, Training and Doctrine Command. <https://adminpubs.tradoc.army.mil/pamphlets/TP525-92-1.pdf>.
- Department of the Army, FM 2-0.** 2023. *Intelligence*. Headquarters, Department of the Army.
- Freedman, Lawrence.** 2019. *Viitorul războiului*. București: Editura Litera.
- Johnson, David.** 2022. "The Tank Is Dead: Long Live the Javelin, the Switchblade, the... ?" *War on the rocks*. <https://warontherocks.com/2022/04/the-tank-is-dead-long-live-the-javelin-the-switchblade-the/>.

- Jones, Seth G.** 2022. "Russia's Ill-Fated Invasion of Ukraine: Lessons in Modern Warfare." *Center for strategic and international studies*. Edited by Center for Strategic and International Studies. <https://www.csis.org/analysis/russias-ill-fated-invasion-ukraine-lessons-modern-warfare>.
- Kofman, M., and R. Lee.** 2022. "Not Built For Purpose: The Russian Military's Ill-Fated Force Design." *War in the rocks*. Edited by War on the Rocks. <https://warontherocks.com/2022/06/not-built-for-purpose-the-russian-militarys-ill-fated-force-design/>.
- Mirea, Adrian.** 2024. „Pregătirea de foc a ofensivei – necesitatea actualizării algoritmului de planificare.” *Buletinul Universității Naționale de Apărare „Carol I”* 13 (3): 126-136.
- Muggah, Robert.** 2015. "Fixing Fragile Cities." <https://www.foreignaffairs.com/articles/africa/2015-01-15/fixing-fragile-cities>.
- NATO.** 2018. *Framework for Future Alliance Operations*. Bruxel: NATO Standardisation Office.
- NATO Standard, AJP-1.** 2022. *Allied Joint Doctrine*. Vols. Edition F, Version 1. Bruxel: NATO Standardization Office (NSO).
- NATO Standard, AJP-3.2.** 2022. *Allied Joint Doctrine for Land Operations*. Vol. Edition B Version 1. Bruxel: NATO Standardization Office (NSO).
- NATO, ATP-3.2.1.2.** 2022. *Conduct of Land Tactical Operations in Urban Environments*. Vols. Edition A, Version 1. Bruxel: NATO Standardization Office (NSO).
- Nistorescu, Claudiu-Valer.** 2024. *Forțele Terestre ale Federației Ruse*. București: Centrul tehnic-editorial al armatei.
- Pamment, James, Vladimir Sazonov, Francesca Granelli, Sean Aday, Māris Andžāns, Una Bērziņa-Čerenkova, John-Paul Gravelines, et al.** 2019. "Hybrid Threats: 2007 cyber attacks on Estonia." NATO Strategic Communication Centre of Excellence. 52-69. <https://stratcomcoe.org/publications/hybrid-threats-2007-cyber-attacks-on-estonia/86>.
- Scrogin, James D.** 2019. *Large-Scale Combat Operations: Relearning an Old Concept*. Editor US Army Command and General Staff College Press Book. Vol. Large-Scale Combat Operations – The Division Fight. Army University Press.
- Statul Major al Forțelor Terestre, F.T.-1.** 2017. *Doctrina operațiilor forțelor terestre*. București: Statul Major al Forțelor Terestre.
- Toroi, George.** 2024. „Reziliența – multiplicator al efectelor în pregătirea contracarării inducerii în eroare.” *Buletinul Universității Naționale de Apărare „Carol I”* 13 (3): 111-125.
- UK Ministry of Defence.** 2024. *Global Strategic Trends*. Seventh Edition. https://assets.publishing.service.gov.uk/media/673602412469c5b71dbc7b6f/Global_Strategic_Trends_Out_to_2055.pdf.
- US Joint Chiefs of Staff, JP 3-06.** 2013. *Joint Urban Operations*. US Joint Chiefs of Staff. https://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/jp3_06.pdf.
- Vereș, Petru-Marian.** 2024. „Integrarea capacităților multidomeniu în operațiile unităților interarme din forțele terestre.” *Buletinul Universității Naționale de Apărare „Carol I”* 13 (1): 44-59.

Watling, J., and N. Reynolds. 2023. *Meatgrinder: Russian Tactics in the Second Year of Its Invasion of Ukraine*. Londra: Royal United Services Institute for Defence and Security Studies/RUSI.

_____. 2024. *Tactical Lessons from Israel Defense Forces Operations in Gaza, 2023*. Londra: Royal United Services Institute for Defence and Security Studies.