The Russian Way of Regular Land Warfare: A Comparative Case Study of Four Major Russian Operations after the Cold War

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The Russian Way of Regular Land Warfare: A Comparative Case Study of Four Major Russian Operations after the Cold War

by

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Abstract

This thesis aims to contribute to the understanding of Russian military behavior through a characterization of the Russian way of regular land warfare. The Russian use of regular military force on several occasions since the Cold War has created an acute need to interpret and predict Russian military behavior. If this fails, the result could be lost wars and unnecessary escalations. Essentially, my research will attempt to find the way in which the Russian way of regular land warfare since 2007 has evolved from the Soviet version of the late 1980s.

The analysis is divided into three parts. Firstly, the Soviet way of regular land warfare in the 1980s is established as a "model" for the subsequent analyses. Secondly, this model is then used as a frame of reference for four case studies of Russian military behavior since 2007. Finally, the findings from these case studies are then synthesized and contextualized with the help of Russian military theoretical literature. In sum, these three parts, providing different perspectives, create a comprehensive and well-founded description of the Russian way of regular land warfare.

As the reader will learn through this thesis, in broad terms, the Russian way of regular land warfare is characterized by an emphasis on penetrating the enemy defensive system and swiftly reaching decisive objectives. This is achieved through a range of characteristics that are largely continuations of the Soviet version in the 1980s and even before. Firstly, the element of surprise is crucial to the Russians and largely achieved through high combat readiness, strategic mobility, secrecy and deception. The advantage of surprise helps to seize the strategic initiative, which is then retained by aggressive and relentless operations, particularly in the initial period of war. Russian combined arms warfare is largely fires-centric and systemic: that is, the use of fires is put into a system, embodied by, for example, the Russian concepts of the "reconnaissance-strike (fire) complex" and the "fire destruction of the enemy". New technology, such as precision-strike weaponry, UAVs and electronic warfare, has been key to these conceptualizations and incrementally implemented into the Russian combined arms warfare system.

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Notes on Russian Translations and Transliteration

This thesis makes use of several sources in Russian and this warrants making some notes about translation. Unless the text is from an already translated source, all translations are conducted by the author of this thesis. They are provided in Appendix B with their original text.

The translations have focused on clarity. Thus, the language has been shortened and slightly altered if that aids clarity without removing meaning from the text. For example, long technical descriptions, often with multiple genitive elements, typical of Russian academic texts, have been shortened in some instances. Additionally, in translations of military terminology, the most corresponding Western term is often used instead of a literal translation. For example, the Russian term *gruppirovka voysk (sil)* (группировка войск (сил)) is translated into "group of forces" as there is no Western equivalent to the distinct Russian division between troops and forces. Other examples are the translation of *upravleniye* (управление) into "command and control" and the level-specific words of *nachal'nik, komandir, and komanduyushchiy* (начальник, командир, командующий) into "commander". Also note that the distinct and well-defined Russian unit hierarchy (*ob'yedineniye, soyedineniye, chast', podrazdeleniye*) is often shortened to "unit". However, if there is a point in preserving the literal meaning of the Russian term this is naturally also done in the translation.

Transliterations of Russian words follow the simplified BGN/PCGN system for romanization of Russian text. If there exist established Western transliterations of Russian words, these are used; for example, "Trotsky" is used instead of "Trotskiy".

Chapter 1:Introduction

> And we must not forget that only maneuvers are one-sided, while wars are always two-sided. We must be able to get a grasp of war as it is perceived by the opposing side and clarify the other side's desires and goals.
>
> Aleksandr Andreyevich Svechin (1927/2004, p. 62)

The Russian invasion and annexation of Crimea in 2014 severely increased tensions between Russia and the West, after a brief period of low tension in the immediate post-Cold War era. Subsequently, the 2022 invasion of Ukraine re-arranged the European security environment completely and has put Russia and the West on a confrontational path for the foreseeable future. In this context, understanding Russian military behavior is of the utmost importance; failing to interpret the true intent and purpose of Russian actions could lead to failure in responding appropriately, both militarily and politically. In the worst case, this could lead to an unintended war between NATO and the Russian Federation – a war which could escalate to the use of nuclear weapons. This thesis aims to present a theoretical framework to understand and interpret Russian military behavior, and thus enable more accurate assessments of Russian actions. This framework is conceptualized through the Russian way of regular land warfare.

During the Cold War, there was a similar tension between NATO and the Soviet Union which produced a similar need to understand and interpret the Soviet way of warfare. Consequently, at the end of the Cold War, there was a large body of Western literature that attempted to understand the opponent on its own terms. Several authors (for example, David Glantz, John Erickson, Christopher Donnelly, Richard Simpkin, William Baxter, David Isby, and Harriet and William Scott) and research organizations (for example, the Royal United Services Institute (RUSI), the Soviet Army Studies Office, and the Soviet Studies Research Centre) produced large quantities of unclassified and high-quality publications about the Soviet military and way of warfare. However, after the end of the Cold War, the focus of Western military theoretical scholars shifted from large-scale warfare with the Soviet Union towards the conduct of limited wars. This discontinuity in scholarly interest in the Soviet and Russian military created a large gap in Western knowledge and understanding of the distinctive characteristics of the Russian military.

However, particularly after the 2014 Russian invasion of Crimea, conceptualizations focusing on irregular and non-military means, such as hybrid warfare, have increased in importance. While the original Western conceptualization of hybrid warfare concerned the combination of regular and

irregular *military* means (see Hoffman, 2009; Mattis & Hoffman, 2005), the debate around Russian hybrid warfare has been more concerned with the grey-zone between war and peace (see for example Jonsson & Seely, 2015; McKew, 2017; Thomas, 2015b). An indication of the importance of hybrid warfare and similar conceptualizations in the West is its inclusion into formal NATO strategy. At the Wales Summit in September 2014, NATO declared that hybrid warfare threats are "where a wide range of overt and covert military, paramilitary, and civilian measures are employed in a highly integrated design", and that "[i]t is essential that the Alliance possesses the necessary tools and procedures required to deter and respond effectively to hybrid warfare threats" (*Wales Summit Declaration*, 2014). Another similar conceptualization is "political war", more specifically, warfare with aggressive use of non-military political means such as sanctions and propaganda. Mark Galeotti argued that "[Russian] spies snoop, and even kill, and its hackers and trolls mount a 24/7 onslaught on Western systems and discourses. This is generally characterised as 'hybrid war,' but this is a misunderstanding of Russian strategy. (…) [T]he Kremlin has updated traditional forms of non-military 'political war' for the modern world" (Galeotti, 2019, p. i). Another related concept is Dima Adamsky's "New Generation Warfare". He argues that "Utilizing the [hybrid warfare] framework that dominates [Western] professional discourse to analyze a distinct Russian [New Generation Warfare] concept seems like that kind of misrepresentation" (Adamsky, 2015, p. 21). According to Adamsky, this concept of "New Generation Warfare" (*voyny novogo pokoleniya*) is "an amalgation of hard and soft power across various domains, through the skillful application of coordinated military, diplomatic, and economic tools" (Adamsky, 2015, p. 23).

However, Adamsky's interpretation of the concept of New Generation Warfare exemplifies a common misconception in Western literature. The concept of New Generation Warfare is derived from an article of Colonel S. G. Chekinov and Lieutenant General S. A. Bogdanov (see Jonsson, 2019, p. 12), which certainly includes discussions of soft power and political struggle, but also robotization, long-range precision strike weaponry and other elements related to regular warfare. Chekinov and Bogdanov argue that "[a] new-generation war will be dominated by information and psychological warfare that will seek to achieve superiority in troops and weapons control and depress the opponent's armed forces personnel and population morally and psychologically" pointing both to command and control of regular forces and propaganda (Chekinov & Bogdanov, 2013b, p. 16). However, they also state that "[m]ost probably, the attack will begin with an aerospace operation several days long" in which "the attacker will attempt to direct his air strikes and high-precision missiles launched from the ground, sea, air, and space in a network-centric environment" and that "[w]hile the aerospace operation is on, the defender must anticipate attack by enemy military robots" (Chekinov & Bogdanov, 2013b, p. 20). Additionally, they note that "still, the end goals of a

new-generation war cannot be attained unless ground forces are committed" (Chekinov & Bogdanov, 2013b, p. 21). Consequently, while parts of the article are concerned with non-military means, these means are seen as part of the conduct of *war* – a war that is largely waged with regular warfare. This misconception could be a contributing reason for the lack of ability to foresee Russian use of military force.

Arguably, Russian use of regular military force over recent decades has largely transpired outside most expectations. In the 2008 Russo-Georgian War, a full-fledged invasion, consisting of approximately one-third of the combat ready Russian forces, was not what Georgian authorities had expected. Evidently, the Georgians failed to predict Russian actions, and that resulted in Russian forces advancing all the way to the "doorstep" of Tbilisi, the Georgian capital, threatening the very existence of the Georgian state (Felgenhauer, 2009, pp. 162–168). Similarly, the 2014 Russian invasion of Crimea and intervention into Donbas were apparently not sufficiently predicted as these Russian operations were not met by effective Ukrainian and Western countermeasures (Everett & Gerstein, 2014). Furthermore, as this thesis will demonstrate, Russian operations in Crimea and Donbas have been interpreted as much less regular than they were in reality and possibly skewed the perception of Russian behavior (see also Osflaten, 2021). Finally, in spite of clear warnings from US intelligence, many, both politicians and analysts, did not believe in a Russian full-scale invasion of Ukraine in 2022 until it was launched (Eckel, 2023). It was not a lack of indications for the invasion that created doubt, but perhaps a lack of imagination. Could this lack of imagination have its roots in a misinterpretation of the Russian way of warfare? This thesis will contribute a framework to understanding Russian military behavior that will increase the ability to analyze, interpret and maybe predict Russian use of military force.

Admittedly, to successfully predict military behavior is difficult and not possible in absolute terms. However, failure to correctly interpret and predict Russian military behavior can have catastrophic outcomes. Thus, in order to develop an understanding of the Russian military, this thesis sets out to elucidate the Russian way of warfare. More specifically, as will be elaborated below, this thesis will develop a description of the *Russian way of regular land warfare*. This analysis will be conducted in three stages. Firstly, it will establish a "Soviet way of warfare in the 1980s", used as a frame of reference for subsequent analysis. Secondly, Russian conflict behavior, in the form of case studies, sets the stage for the final analysis. Finally, a synthesis of the findings from the case studies is contextualized by a wide range of Russian military sources. These three stages of analysis correspond to chapters in this monograph.

1.1 The Research Question

There is a need to understand the Russian use of military force. When attempting to understand an entity, identifying that entity's perception of reality is paramount. The way a military organization perceives the nature and fundamental challenges of warfare, and how they plan to overcome those challenges, is the key to understanding that organization's conduct of military operations. As Baxter points out in his comprehensive analysis of the Soviet armed forces from 1986, understanding a military organization requires adopting that organization's perspective:

> This microcosm of the individual remains true when translated to the larger scale of societal groups, and it specifically applies to (…) the Armed Forces of the USSR. That which seems to us in the West as enigmatic, irrational, or wrong in the Soviet military profession is eminently logical, reasonable, and correct from the Soviet viewpoint. Even when we discover practices with which we can agree, we often find that the motivation seems wrong, that they do the right things but for the wrong reasons (Baxter, 1986, p. 1).

Accordingly, when looking at Russian military behavior after the end of the Cold War, a similar approach is necessary. A Western analysis of the Russian military needs to see the Russian conduct of operations with Russian eyes, rather than with Western eyes. In other words, this thesis needs to develop a theoretical framework, rooted in the Russian perspective, to understand Russian military behavior.

In order to be relevant, a theoretical framework of understanding needs to be generalizable at some level. Thus, an inference, derived from a single historical fact, should be able to inform a broader set of incidents (see King et al., 1994, pp. 7–8). If not, it cannot be used to understand anything beyond itself. For example, if it is not possible to say something about the 2014 Invasion of Crimea by looking at the 2008 Russo-Georgian War or any other Russian use of military force, that knowledge would have no practical applicability. Thus, a study of Russian military behavior should be generalizable to other cases beyond the source material itself. To achieve this, a broad analysis of several cases is preferable. Several cases over a longer timeframe are better suited to unlocking broad and recurring characteristics of Russian use of military force. Accordingly, this thesis will look at several cases over an extended timeframe.

When combining the aim to provide a theoretical framework for understanding and an ability to generalize the results, the concept of "way of warfare" presents itself as a viable alternative. The justification for this concept will be explained in chapter 1.3. However, in short, it is a concept that tries to capture the essence of an entity's fundamental and enduring assumptions of warfare and

thus acts as a theoretical framework for understanding. The Russian way of warfare, or more precisely *way of regular land warfare*, is the object of study of this thesis. This leads to the research question:

How has the Russian way of regular land warfare since 2007 evolved from the Soviet version of the late 1980s?

The research question has some elements that need further clarification. Firstly, it includes a comparison with the Soviet way of regular land warfare. This is a contrasting model against which the characteristics of the Russian way of regular land warfare may appear more distinctly. After all, the Russian armed forces are descendants of the Soviet armed forces and should be expected to resemble their predecessors. Thus, by using a model of the Soviet way of regular land warfare as a comparison, a change in the Russian version should be easier to discern. Additionally, a comparative research design accommodates the methodological advantage of deduction, further explained in the methodological subchapter.

Secondly, the term *regular warfare* also demands a closer explanation. It is a much-used but rarely-defined concept. The complex nature of warfare, in its many variations, makes it notoriously hard to categorize. The definition of regular warfare used here is the application of military power, by a state actor, to destroy the opponent's armed forces or to occupy his territory. This is achieved through militarily dominating the opponent's armed forces. This definition corresponds to the equally ill-defined concept of "conventional warfare". One definition of conventional warfare describes it as "state-on-state conflict between organized, uniformed, professional military forces using massed firepower in open space away from civilians with the aim of destroying each other to gain and hold ground" (Sandor, 2021). However, as conventional warfare implies the absence of weapons of mass destruction, regular warfare, as defined above, includes such weaponry if it is used to destroy or dominate a military opponent (see *Joint Publication 1-02*, 2016, p. 50). Regular warfare is usually characterized by the mass deployment of forces, intensive violence and decisiveness. *Regular forces* are the category of forces best suited to conduct regular warfare. More precisely, regular forces are designed to maximize the combined effects of their firepower, protection and the ability to maneuver to defeat an armed enemy in combat (see *AJP-3.2*, 2016, pp. 1–4, 1–5). Importantly, other categories of forces, such as special operation forces and guerrillas, which are designed to exploit asymmetric approaches, can still conduct regular warfare, yet they are still not regular forces.

"State actor" is loosely defined. For example, the separatists in Donbas could be defined as state-actors in the sense that they were in control of significant resources, population and territory, and

had the organization resembling a small state. Certainly, according to this definition of regular warfare, the two illegitimate separatist republics in Donbas were conducting regular warfare after 2014. Albeit limited in scope, and supported by the Russian Federation, the military approach of the separatist republics included unbroken and fortified lines of defense that could effectively defend against forceful attacks from the Ukrainian forces (Kofman et al., 2017, pp. 69–70).

Thirdly, the emphasis on land warfare needs to be explained. The Russian Federation, similarly to the Soviet Union, contains enormous land masses. In fact, Russia, despite being smaller than the Soviet Union, is still the largest country in the world. A large country implies a long border; in the case of Russia, it is approximately 60.000 kilometers long. Thus, as the border has historically been shared by several major powers and alliances, the defense of Russia and the Soviet Union has always been dependent on the skillful use of large land forces (Rogovoy & Giles, 2015, p. 31). Additionally, Russia has a severely restricted access to the global maritime domain: firstly, both Russian fleets in the Baltic and Black Seas are isolated by foreign controlled straits. Secondly, the access to the Atlantic and Pacific oceans is complicated by the remoteness and icy conditions of Russian areas that can provide this access. While the Northern Fleet, contrary to the Pacific Fleet, have year-round access to ice-free harbors, both fleets' basing areas have long and restricted lines of communication to the country's central areas. Also, due to the fragmented character of the Russian fleets, Russia is less able to concentrate its maritime forces to project military power across oceans (Parnemo, 2019, pp. 42–43). Consequently, the land dimension of warfare has usually been more important than the maritime in Russian military thinking and the naval component is often restricted to direct support of land forces (Rogovoy & Giles, 2015, p. 34).

While the Russian Armed Forces conducted a limited air campaign in Syria without substantial land forces, there are no other prominent examples of Soviet or Russian large-scale exclusive air-campaigns (Simpson et al., 2022, pp. 45–46). Thus, it seems that Russian air operations are usually in support of land operations. However, land warfare in the context of this thesis is not meant to be restricted to the activities of exclusively land forces; the complete joint force, conducting the land campaign, is included in this term.

Finally, the research question identifies the period since 2007 as the time-period for the study. More specifically, it will look at four cases of Russian military operations within this timeframe: The 2008 Russo-Georgian War, the 2014 invasion of Crimea, the intervention into Donbas from 2014, and the 2022 full-scale invasion of Ukraine. The justification for the selection of these cases will be given in chapter 1.5. The "Serdyukov reforms" were a set of reforms aimed at modernizing the Russian Armed Forces. Beyond purchasing modern equipment on a grand scale, the reforms were meant to

transform Russian forces from the old system, based on mobilization and designed for large-scale total war, into a high-readiness force, primarily designed for regional conflicts (Klein, 2011, pp. 30–31). While the announcement of the reforms happened after the 2008 Russo-Georgian War, the planning and introduction of the reforms were likely initiated in earnest at the time A. E. Serdyukov took office as defense minister in February 2007. As a civilian outsider to the military establishment, he was thought to be more effective in implementing hard-hitting reforms (McDermott, 2011, p. 14). Importantly, as these reforms may be characterized as a turning point between the Soviet system of mass mobilization and something newer and different, they can also act as a convenient delimitation for this thesis. To what extent these reforms really changed the Russian way of regular land warfare is less certain, and exactly what this study hopes to elucidate (see Renz, 2014).

As the reader will learn through this thesis, in broad terms, the Russian way of regular land warfare is characterized by an emphasis on penetrating the enemy defensive system and swiftly reaching decisive objectives. This is achieved through a range of characteristics that are largely continuations from the Soviet version in the 1980s and even before. Firstly, the element of surprise is crucial to the Russians and largely achieved through high combat readiness, strategic mobility, secrecy and deception. The advantage of surprise helps to seize the strategic initiative, which is then retained by aggressive and relentless operations, particularly in the initial period of war. Russian combined arms warfare is largely fires-centric and systemic: that is, the use of fires is put into a system, embodied by, for example, the Russian concepts of the “reconnaissance-strike (fire) complex” and the “fire destruction of the enemy”. New technology, such as precision-strike weaponry, UAVs and electronic warfare, has been key to these conceptualizations and incrementally implemented into the Russian combined arms warfare system.

1.2 Research Design and Thesis Structure

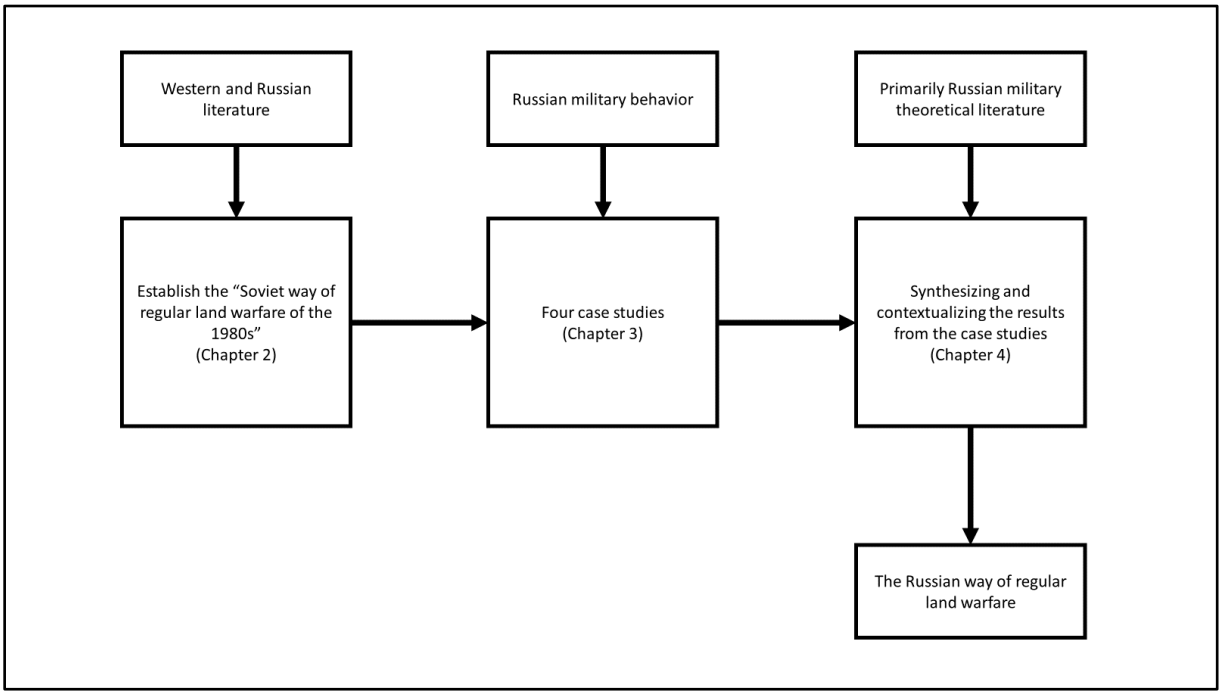

Figure 1 The three-stage research design

The research design of this thesis consists of a three-stage analysis. Firstly, by taking advantage of the rich Western literature on the Soviet military at the end of the Cold War, a "model" of the Soviet way of regular land warfare of the 1980s is established. This model will be the starting point for the subsequent analyses and can be found in Chapter 2.

The second stage, presented in Chapter 3, contains four case studies of Russian military behavior. These case studies are supported by the established "model" of the Soviet way of regular land warfare of the 1980s. Thus, this "model" acts as a frame of reference that can be compared to the Russian behavior in each of the case studies. The advantage of this approach will be explained in the next subchapter. Consequently, the second-stage analysis can be seen as a set of four *hypothesis-testing* case studies, in which the Soviet way of regular land warfare of the 1980s constitutes the hypothesis.

In the third-stage analysis, the findings from the four case studies are compared and contextualized by using primarily Russian military theoretical literature such as journal articles and field manuals; these will be further discussed in Subchapter 1.5. In this analysis the results from the four case studies are synthesized into a theoretical framework: the Russian way of regular land warfare. Thus, this analysis largely acts as the conclusion of this study. The third-stage analysis, utilizing a very broad

range of sources, including the findings from the four cases and Russian military theoretical literature, enables a large degree of triangulation and depth. It is presented in Chapter 4.

This monograph consists of five chapters and its structure resembles the research design. Chapter 1 is an introductory chapter, which includes a description and explanation of the research design and methodology. Chapter 2 presents the Soviet way of regular land warfare of the 1980s. It includes a historical background, fundamental traits of the Soviet way of warfare, and a set of specific indicators for the "model". Chapter 3 consists of the four case-studies. Then, Chapter 4 compares and contextualizes the findings from the four case studies and proposes a Russian way of regular land warfare. The thesis ends by summarizing its main findings in Chapter 5.

1.3 Methodology

While the research design, describing a three-stage analysis, is fairly straightforward, several methodological issues arise. Firstly, the way of warfare concept needs to be defined and placed in relation to other, similar, concepts. Secondly, the concept itself, being associated with military conflict, produces several significant methodological challenges. For example, when researching military conflict, it is difficult to get access to all relevant information, and significant empirical deficiencies will probably exist; in other words, high external validity is difficult to attain. Thirdly, the elements used to structure the analysis need to be clarified. Of several possible elements, this thesis uses three that are fundamental to modern combat: the application of effects, the conceptual view of space, and the conceptual view of time.

Way of Warfare – Concept and Methodological Challenges

This thesis engages in a field of study that is teeming with different conceptualizations. Concepts include *military thought*, *strategic culture* and *operational art* to name a few, and they are often used with different connotations from author to author. Thus, to use these concepts without further explanation would quickly lead to ambiguity and a failure of communication. As this thesis is part of a Western discourse, it will use the understanding of these concepts derived from Western literature. The use of Russian academic terminology would confuse the discussion.

This section will continue by presenting different concepts related to the way of warfare and then present the conceptualization of this study's unit of analysis: *the Russian way of regular land warfare*. Despite the multitude of concepts, the following discussion will show that they are all consistent with a simplistic three-level model of a national military system (see Figure 2). Firstly, the systematic component of *military behavior* results from the norms and mental frameworks inherent

in the specific military organization. Further, these *intermediate factors* are at least partly informed by the body of *military thought*.

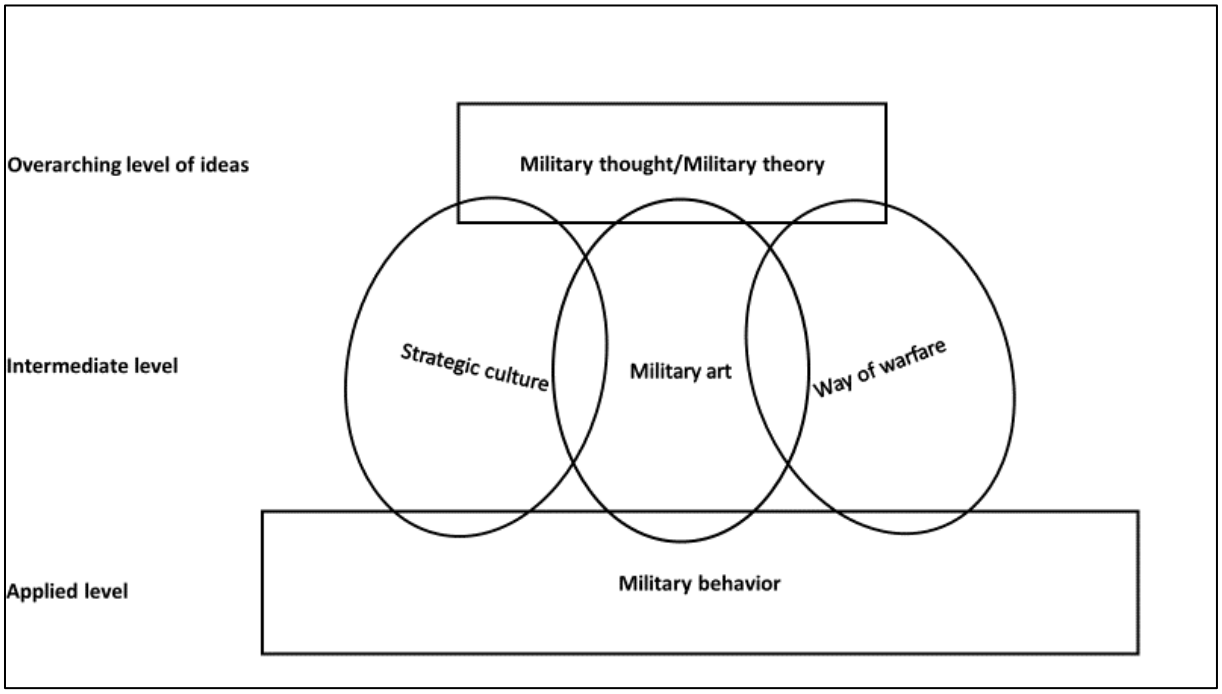

Figure 2 The simplistic three-level model of a national military system

There are many potential approaches to analyzing and understanding military matters. Firstly, as military organizations prepare for war, there will always be assumptions of how a future war will be conducted and how to win that war. Military theory, often referred to as military thought, informs these assumptions. When talking about national military thought, it is often the national consensus on military theory – the military-theoretical foundations accepted by the majority of the national military elite – that is addressed. However, this national version of military theory will not necessarily produce congruent military behavior. For example, the American military elite's emphasis on, and acceptance of, maneuver warfare arguably did not produce a purely maneuver warfare force (Leonhard, 1991, p. 129). There can be several reasons for this: specific strategic factors in the current conflict that require a special approach, an inherited material system that is both expensive and time-consuming to change, or cultural factors impeding the adherence to a pure understanding of the military theoretical foundation. This is especially true when the professional military practitioners have diverging cultural perceptions to military theorists. Thus, despite military thought influencing military behavior, there is no absolute relationship between the two. Consequently, to understand a national way of warfare, it is necessary to go beyond military theoretical discourse and military thought.

Another prevalent concept explaining military behavior is strategic culture. Despite strategic culture being separate from the way of warfare discipline, the latter "may be viewed as both a subset and a

product of (…) [an] overall strategic culture" (Sondhaus, 2006, p. 1). Thus, strategic culture, according to Lawrence Sondhaus, could be a cause of military behavior. However, Sondhaus' statement also alludes to the notion that strategic culture and way of warfare are conflated concepts. At least in the multitude of different applications of the concepts, there are large overlapping definitions of ways of warfare and strategic culture (see Sondhaus, 2006, Chapter 1).

The discipline of strategic culture originated in the 1970s through Jack Snyder's RAND report *The Soviet Strategic Culture: Implications for Limited Nuclear Operations*. Subsequently, political scientists continued to use Snyder's novel concept (Sondhaus, 2006, p. 1). Snyder argued that:

> Neither Soviet nor American strategists are culture-free, preconception-free game theorists. Soviet and American doctrines have developed in different organizational, historical, and political contexts, and in response to different technological constraints. As a result, the Soviets and Americans have asked somewhat different questions about the use of nuclear weapons and have developed answers that differ in significant respects (Snyder, 1977, p. v).

In other words, even under completely equal circumstances, each national military organization would arrive at slightly different strategies, at least partially derived from an underlying and inherent strategic culture.

However, the discipline of strategic culture has been a contested one. Despite the shortcomings of strictly rational theories, such as game theory, in explaining military behavior, strategic culture has also met criticism. It seems that the development of a sufficiently precise and agreed-upon cultural conceptualization in strategic studies has created difficulties (Sondhaus, 2006, pp. 12–13). Most notably, the question of what substantiated culture spurred debate. The dispute between what Alaistar Johnston called "the third generation" (in which he placed himself) and its main critiques, most notably Colin Gray, is one of the main themes in strategic culture studies. Gray argued for a holistic view on culture and refuted the idea that culture could be isolated from behavior as an independent variable. He argued that everything, also physical entities, is perceived through a cultural lens and thus cannot be sensibly separated from behavior itself. (Gray, 1999a, pp. 57–59). Johnston, on the other hand, was a proponent for the existence of causality in strategic culture studies. He argued that strategic culture could be seen as an ideational concept, separated from behavior, and thus the relationship between them could be empirically tested (Johnston, 1995).

At the core of Gray's argument lies the distinction between explaining and understanding. He argues that it is not possible to *explain* behavior by cultural factors: you can only *understand* behavior through the cultural context (Gray, 1999b, p. 50). Johnston, on the other hand, saw the distinction

between explaining and understanding as artificial; both concepts involve the description of causal relationships (Johnston, 1999, p. 520). However, Johnston agrees with Gray that there is no sensible way to differentiate between materialistic and ideational factors influencing behavior – human beings are *encultured* and cannot perceive the physical world unless through a cultural lens (Johnston, 1999, p. 520). This agreement – that reality is understood through a cultural lens – also applies to other cultural conceptualizations such as a way of warfare (see Sondhaus, 2006, p. 1). Consequently, it also applies to this thesis. According to Johnston, and presumably Gray, it is not possible to understand or explain the Russian way of warfare without the use of a cultural framework of understanding. Thus, this thesis uses the Soviet way of regular warfare from the 1980s as a frame of reference to provide an understanding of the Russian way of regular warfare after the Cold War. Importantly, regardless of whether Johnston or Gray are correct, behavior is of utmost importance when trying to unlock a nation's strategic culture because ideas and opinions cannot be directly observed: they are usually analyzed through their manifestation in behavior. Consequently, behavior is connected to strategic culture and way of warfare, which, in turn, is shaped by military thought through the interaction between encultured agents; in other words, strategic culture and way of warfare fill the intermediate level in the three-level model.

While strategic culture focuses on the symbolic and ideational framework of thought that constitutes or causes military behavior, military art focuses on the best practice of warfare (Echevarria, 2014, pp. 49, 56). Military art, and the equivalent at the operational level of warfare, operational art, have been defined as both a science and an art, and as encompassing both theory and practice. Richard Harrison describes operational art simply as "the theory and practice of waging war at the operational level" (Harrison, 2001, p. 2). Others are more explicitly critical of labelling it strictly as an art and see a comparison with the creative arts as problematic. Antulio Echevarria points to the importance of scientific processes in the conduct of operations; he argues that "science (…) is but the scientific method followed to its logical conclusion" (Echevarria, 2014, p. 47). Essentially, science is the attainment of knowledge of a particular phenomenon through careful observation and the skeptical cognition of said phenomenon. In other words, every skill, intuition or creative notion, *which is successful by design*, needs to be based on science to some extent. Echevarria even alludes to the fact that the preference for "art," contrary to "science," in military history results from the need to explain successful military endeavors by pointing to the influence from "genius" generals – that "art is not essential for military success – only for military glory" (Echevarria, 2014, p. 48). Military and operational art encompass both military thought and conflict behavior, building a bridge between the two, and thus are relevant to the three-level model described above.

Another, and more straightforward intermediate concept between military thought and behavior is doctrine. According to Jan Angstrom and J. J. Widen, doctrines are prescriptive documents of "how," "for what" and "why" military resources should be utilized, based on the institutionalized knowledge of the military organization (Angstrom & Widen, 2015, p. 5). Consequently, military doctrine transforms military thought into military action through the normative influence it has on the military force. However, its prescriptive nature, often a result of a variety of considerations, makes it less suitable as a subject of study explaining behavior. In many respects, doctrine is a form of behavior itself.

Thus we arrive back to the subject of this analysis, the Russian way of regular land warfare. According to the above discussion, it becomes clear that many of the concepts related to the analysis of military behavior follow an underlying fundamental model: that there is a relationship between the explicit body of national consensus on military thought and the nation's military behavior. However, this relationship is not absolute and has intermediate factors, which include, among others, unconscious factors, such as culture, and explicit and directive factors, such as doctrines.

Regarding the nature of way of warfare, Colin McInnes observed, "[a]t the heart of both the idea of a way in warfare and of strategic culture is that of difference" (McInnes, 1996, p. 1). Different organizations will, even under equal circumstances, arrive at different solutions because each organization will perceive the situation in its own unique way *viz.* different ways of warfare. In order to describe the way of warfare of the Russian Armed Forces, it is not enough merely to describe the organization's observable behavior in an exact way; a complete analysis needs to include the systematic component between several cases. That is, the systematic difference between the Russian way of conducting warfare as compared to other potential ways. Additionally, a solely descriptive study is not able to generalize and unlock the Russian way of warfare because it is not consistent only of behavior – intangible underlying factors are also included in the concept. For example, counting the exact number of tanks used in a conflict will only be of trivial interest. However, why there were so few or many, and to what purpose they were used, will be of great academic interest; it will show how the army in question perceives tanks as a weapon system and the best way of using them. Then, this generalization can be expanded to other cases or to an aggregated theory.

Furthermore, it is sensible to make a distinction between war and warfare. The former seeks to understand the phenomenon of war and the latter how to conduct war. This thesis is concerned with warfare; more specifically, how the Russian Armed Forces have conducted military operations. Not only is the object of analysis limited to warfare, but it is also focused at the lower end of the scale of military activity. According to the levels of warfare, this thesis will analyze the Russian way of warfare

mainly at the tactical and operational levels. Therefore, why is the subject of analysis not the concept of operational art? Firstly, operational art is specific to the command of military forces at the operational level of war. Milan Vego defines operational art as: "a component of military art concerned with the theory and practice of planning, preparing, conducting, and sustaining campaigns and major operations aimed at accomplishing strategic or operational objectives in each theatre" (Vego, 2017, p. 21). It is the commander, or the command of forces, that is the focal point, not the military force as a whole. Finally, there have been doubts about whether an operational level of warfare even exists. According to critics both in the West (for example Kelly & Brennan, 2009) and in Russia (for example Voskresenskiy, 2020), the levels of warfare are increasingly compressed and thus makes the operational level of warfare less distinct.

All the concepts discussed in this chapter overlap to some degree, and they conform to a model that partly explains military behavior with the influence from a nation's leading body of military thought: however, with intervening factors that transfer the ideas from military thought into behavior. Thus, one might say that the choice of *way of warfare* as the subject of analysis is somewhat arbitrary. However, it is a concept linked to a substantial body of literature and enables a broad and holistic analysis of Russian military behavior. Beyond the controversies of conceptualization, presented above, there seems to be firm ground under the claim that there is an arational component to military behavior and that this component is partly systematic. In this context, arationality implies that actions and decisions are not based on explicit rational processes. However, they are not necessarily irrational; that is, it is not necessarily going against reason. In other words, they are fundamental assumptions about warfare that are unconscious or simply seen as self-evident.

If you accept that the way an actor thinks influences how that actor acts to a certain degree, this influence can be divided into three components. The first component consists of idiosyncratic factors pertinent to that specific actor and mere coincidences. Secondly, explicit rational thought-processes influence behavior, e.g. rational decision-making. However, as this thesis presupposes, there is a third arational component that also influences behavior: the fundamental assumptions about warfare, for example taught or conditioned within the organization, that are unconsciously accepted or seen as self-evident, and are widely present in a specific military organization. An illustrative example of the difference between explicit rational decision-making and arational assumptions could be the contradictory relationship between surprise and preparations in an attack. To plan for achieving surprise, over not achieving surprise, is arguably an explicit rational decision. Moreover, to conduct thorough preparations before an attack, as opposite to attack without preparation, is similarly a rational decision. However, when prioritizing between achieving surprise, which often

involves acting swiftly, and thoroughly preparing, which is time-consuming, these arational assumptions are perhaps more applicable. As will be clear later in this thesis, the Russians assume that the effect of surprise is one of the most decisive in warfare. Consequently, they are more inclined to forfeit possibilities for thorough preparations if the element of surprise is achievable. This inclination towards prioritizing surprise over preparations is arguably one of the principal differences between the Russian and US way of warfare. Additionally, this arational component of behavior will be systematic to some degree; consequently, two armies with a different way of warfare can, under the same conditions, be expected to choose a different approach to conducting military operations because they have different fundamental assumptions about warfare. If there was no such arational component, there would be nothing more than perfectly rational choices and unsystematic coincidences, and a distinct Russian, or any other, way of warfare would be impossible.

To grasp an entity's way of warfare is intrinsically difficult and elusive. Firstly, military conflict is a rare occurrence. Consequently, the cases in which an entity is "acting out" its way of warfare are not plentiful. While other sources of information, separate from military conflict behavior, may also be relevant, the empirical manifestation of actual conflict behavior is particularly favorable. The combination of doctrine and practice, both parts of a way of warfare, is best viewed when it is applied in combat. Secondly, military organizations, the agents of a way of warfare, are characterized by comprehensive secrecy and the desire to deceive potential opponents. Thus, a military organization's behavior is notoriously difficult to observe clearly, and what is observed might also be a form of deception. This will consequently distort and blur the image of a military organization's conflict behavior. Finally, to complicate this even further, a way of warfare, as perceived by this thesis, includes more than just a set of specific behaviors; it also includes the reasoning behind it. In other words, a way of warfare does not solely consist of observable facts. This demands the researcher interpret the data and from that, infer the underlying assumptions that led to the behavior. Therefore, what is the solution to these challenges? Method – as a rational and systematic approach to producing novel knowledge – is able to alleviate some of these challenges and, when uncertainty still exists, identify what the study may, and may not, infer.

In each of the case studies, a theoretical model of the Soviet way of regular land warfare of the 1980s is used as a comparison. The rationale for this methodological choice is to increase internal validity and avoid constructing an arbitrary theory. When studying a complex topic with limited accessible information, such as a way of warfare, it is possible to make the mistake of constructing a plausible theory that fits the data but is still wrong. Given the limited access to information, false inferences cannot be falsified, and it is impossible to distinguish one plausible theory from other plausible

theories (see King et al., 1994, p. 21). However, instead, the study might aim only at determining whether a relevant and specified model fits the known data, and if not, how it differs: in other words, it uses an approach more similar to the deductive method. While historical cases cannot be "controlled" or "re-run," as in proper deductive experiments, it is not strictly a deductive method, but an analysis aided by deductive inferences (see Gerring, 2007, p. 151). Thus, this thesis' second-stage analysis aims at comparing Russian military behavior with a relevant theoretical model, *the Soviet way of regular land warfare of the 1980s*, instead of building a theory without any well-founded starting point. This will also elucidate one of the weaknesses of the research design; there might be a completely different, and unknown, theory that fits the data better. However, it is unlikely that the Russian way of regular land warfare will deviate much from the Soviet version, and, in any case, choosing a known starting point makes potential bias more transparent. The use of several case studies will also increase the external validity.

On the same note, the third-stage analysis, comparing the results from the four case studies, uses another methodological approach to strengthen the external validity. One of the most prominent weaknesses of single case studies is their reduced ability to produce generalizable results (Gerring, 2007, p. 43). Consequently, in order to attain more reliable generalization, the research design uses several sources of information. A broad analysis, both spanning a significant timeframe and several cases, is beneficial to unlock general patterns. A too-limited analysis, which only covers a single case, will possibly be based on coincidences, and thus less generalizable to other instances. Consequently, as a study of the Russian way of regular land warfare, this thesis needs a broad outlook, both in the selection of cases and sources of information. The primary source of information is the cases of military behavior, but several other types of sources, such as Russian military journals and field manuals, support and complement the primary source of information.

Finally, it is important to reiterate that the concept of "way of warfare" relies on two central assumptions: as discussed above, there has to be an arational element to how a military organization perceives warfare; more precisely, the validity of some fundamental assumptions about warfare has to be understood as given or simply unconsciously accepted. If not, there is no distinct way of warfare – only perfectly rational solutions to the problems of warfare. Secondly, this arational component needs to be systematic and lasting. Research of warfare, with its inherent complexity and scarcity of verified information, makes any generalization difficult. The aim of elucidating a distinct national way of warfare is even more arduous. Consequently, if the arational component is not present over a significant timeframe, the use of multiple sources of information, such as this thesis relies on, will not produce a sufficiently coherent generalization. In that case, the way of warfare

would have changed significantly between the different cases. To derive a Russian way of warfare from a "snapshot" of Russian conflict behavior is, according to this assumption, impossible because of the inaccessible nature of warfare.

Elements of the Analysis

When analyzing Russian military behavior, a sound theoretical framework is needed. Such a framework can easily become arbitrary and academically self-serving. However, military theory can give authoritative guidance for which elements it should contain. Broadly speaking, the analysis will use effect, space and time as a partitioning of the analysis. More specifically, it will use the elements: "the application of effects", "the conceptual view of space", and "the conceptual view of time". These elements are justified by the discussion below.

J. F. C. Fuller divided warfare into three main elements: "Normally, when speaking of the physical elements of war, I shall call them movement, protection, and weapons" (Fuller, 1926, p. 148). This functional division of warfare was re-used by Robert Leonhard; he argued that, despite there being other activities relevant to warfare such as leadership and logistics, the core activities that are decisive in warfare are moving, striking and protecting. He then puts these three activities into a trichotomous model where the emphasis of one presupposes the de-emphasis of one, or both, of the others. Consequently, he describes three ideal styles of warfare: maneuver, positional and interchangeability (Leonhard, 2017, pp. 30–31). Combining two activities, and de-emphasizing the remaining one, creates one distinctive style of warfare. In each style, the third activity will be implicitly covered by the two others. For example, the maneuver style emphasizes moving and striking; thus, protecting will be implicit in the other two activities, i.e. the ability to stay out of harm's way by moving (Leonhard, 2017, pp. 30–33). Leonhard's three core activities, in addition to time and space, are usually part of any military theoretical analyses (Angstrom & Widen, 2015, p. 110).

However, although there is a strong internal logic in Leonhard's model, there is perhaps a better way to divide warfare. Firstly, the only activity that directly influences the opponent is striking – protecting and maneuvering are always activities to enable striking the opponent at a later stage. Thus, striking, or creating *effects* on the enemy, is the primary activity and should arguably be put in a category by itself. This notion is encapsulated by Clausewitz: "Even in a defensive position awaiting the enemy assault, our bullets take the offensive. So the defensive form of war is not a simple shield, but a shield made up of well-directed blows." (Clausewitz, 2008, p. 357). Even in Leonhard's own practical example of combining moving and protecting, but only implicitly striking, the *turning*

maneuver, it is the "turning" force's potential ability to strike that creates the advantage of that tactic (Leonhard, 2017, pp. 31–32). Essentially, protection or movement are not the end products sought by military activity – the end product is usually an effect placed on the enemy. In this context, "effects" includes not only firepower, but also, for example, the effects of electronic warfare.

Secondly, it is problematic to treat movement and protection as contrasting categories. As Leonhard himself points out, the function of protecting can be accomplished by moving (Leonhard, 2017, p. 37). However, the opposite is not true – moving cannot be accomplished by the activity of protecting. Despite the fact that a tank can be enabled to move in the face of enemy fire by its armor, it is not the armor protection that constitutes the physical movement. The root of this discrepancy can be found in Leonhard's definitions. He defines moving as: "in war, just as in physics, (…) [the] change of position" (Leonhard, 2017, p. 18); and protecting as: "those actions taken by a weapon system or military unit to protect *itself*" (Leonhard, 2017, p. 21). The former is clearly a physical activity; however, the latter is more similar to a function, which also includes movement, undermining the comparability of the two concepts. In other words, they are not opposites, i.e. they cannot be placed in a dichotomous or trichotomous conceptual framework.

Then, due to the problematic nature of contrasting moving and protecting, the second-order dichotomy should also be adjusted. The similarity in both elements is the focus on the utilization of space and terrain. Moving, or maneuvering, emphasizes the ability to rapidly change position to efficiently apply one's own and to avoid the enemy's weapon effects. Conversely, the opposite of movement would be a static approach. In such a positional approach, the exploitation of advantageous terrain – terrain in which one's own weapon effects can be maximized, and which provides protection from the enemy's effects – is paramount. Consequently, the conceptual pair of *maneuver-positional* is better suited than the *moving-protection* pair as a second-order dichotomy.

Consequently, when elevating striking to an independent and higher-ranking activity, and realizing that the function of protecting problematically contrasts to the physical activity of moving, there is a need for an alternative model. Using Fuller and Leonhard's categories as a starting point, and observing the discussion above, the broad categories should then be the application of effects on one hand, and the utilization of terrain on the other. Consequently, this thesis treats firepower (striking) as an independent element of warfare, and the use of space and terrain along the maneuver-positional continuum as a second-order element for analysis. Hence, the analysis will include the elements of the "application of effects" and "the conceptual view of space".

According to several authors (Angstrom & Widen, 2015, p. 110; Fuller, 1926, p. 50; Leonhard, 2017, p. 4), the final element describing warfare is time. As "the conceptual view of space" is concerned with space, time remains the last dimension describing reality. Leonhard argues that:

> The commander or the nation with a three dimensional perspective in war may find itself flabbergasted at what appear to be insurmountable battlefield problems. With an insight into the nature of fourth-dimensional fighting, however, the road to new doctrines, new tactics and new strategies are opened (Leonhard, 2017, p. 13).

Leonhard emphasizes surprise in his conceptual view of time in warfare. He defines surprise as a condition: it is present when a military unit experiences contact with the enemy in a state of unpreparedness (Leonhard, 2017, p. 180). According to Leonhard, the objective of a force trying to surprise its enemy will be to deprive him the ability to react adequately in time. More specifically, he divides surprise into two primary activities: delay the enemy's detection, and hasten the attack. Both activities reduce the time to react for the opponent; however, when applicated, they produce opposing requirements. The former requires stealth and secrecy but the latter requires speed and resoluteness (Leonhard, 2017, pp. 180–181). Evidently, surprise is not simply the ability to attack "out of the blue", but to be more prepared for the events on the battlefield than the opponent. This is enabled by secrecy, deception and a high operational tempo. Moreover, Leonhard is not the only one to point to surprise when discussing time and warfare.

The maneuver warfare tradition also emphasizes this expansive conceptualization of surprise. According to William Lind, the advantage of maneuver warfare is the emphasis on quick decisions and the increased frequency of decision-making. This is primarily achieved through de-centralized command, flexibility and less rigor (Lind, 1985, pp. 4–8). He points to John Boyd's theory of decision-making cycles when explaining this advantage: "Conflict can be seen as time-competitive observation-orientation-decision-action cycles [OODA-loop or Boyd Cycle] (…) [and] [i]f one side in a conflict can consistently go through the Boyd Cycle faster than the other, it gains a tremendous advantage" (Lind, 1985, p. 5). Lind continues: "With each cycle, the slower party's action is inappropriate by a larger time margin" (Lind, 1985, p. 6), i.e. one side experiences contacts with the enemy in an increasingly more profound state of unpreparedness. Consequently, according to Leonhard's view, the opponent is continuously surprised.

Clausewitz was also preoccupied with the advantages of surprise. Like Leonhard, he too emphasized delaying detection and hastening action. He states that: "[t]he two factors that produce surprise are secrecy and speed" (Clausewitz, 2008, p. 198). Clausewitz' second factor of surprise, "secrecy", is

especially relevant in a study of Russian military operations. He argues that: “each surprise action is rooted in at least some degree of cunning” (Clausewitz, 2008, p. 202). That is, cunning, the deception of the enemy, keeps the friendly operation secret. Glantz argued that deception, or *maskirovka* in Russian terminology, is central to Russian military art. For example, describing a potential Soviet use of military force in Europe during the Cold War, Glantz expected that “[t]he Soviets are likely to employ massive deception (*maskirovka*) measures to cover strategic deployment” and he also observed that “[t]he Soviets have extensively employed deception (*maskirovka*) (…) in the past” (Glantz, 1991b, pp. 249, 284 n2; see also Leonhard, 2017, pp. 189–190). Consequently, as a core component of the time-dimension in warfare in general, and Russian military-theory in particular, *surprise*, and its constituent components secrecy and deception, become central to this thesis.

The above discussion has defined three elements for the analysis. Firstly, the infliction of physical effects on the opponent, *the application of effects*, is the primary purpose of warfare. The second element of analysis, *the conceptual view of space*, is the theoretical view of how to utilize space or terrain in order to inflict effects on the opponent and to avoid enemy effects on your own forces. Finally, as the second element is concerned with the use of space, the third element, *the conceptual view of time*, is concerned with the use of time. In the context of modern Russian warfare, surprise, and its constituent components of secrecy and deception, are of special interest to the third element of analysis.

1.4 The Literature on the Russian Way of Warfare

Despite a growing body of literature, describing Russian military issues, there is a deficiency in material discussing the regular, or conventional, aspects of the Russian military. However, after the 2022 Russian invasion of Ukraine, there has been a sharp increase in regular warfare analyses. While these analyses are largely based on preliminary conclusions, more academically rigorous studies have also been published in recent years. For example, in 2023, two doctoral theses, very similar in approach and conclusions to this thesis, were published (Fasola, 2023; Yüksel, 2023). Note that the discussion about the literature relevant to the Russian way of regular land warfare continues into the next subchapter.

A large part of the contemporary literature, at least up until the 2022 Russian invasion of Ukraine, was concerned with the relationship between conventional, irregular and non-military means. This fact does skew the literature away from the research topic of this thesis. In the foreword of a leading contribution to this field, Glantz describes the state of the research as: “[a] decades-long gap in comprehensive unclassified understanding regarding how the Russian army organizes and trains to

fight" (Grau & Bartles, 2016b, p. VIII). As an indication of this gap: in the period between 2015-2018, only 4% of the articles in the *Journal of Slavic Military Studies*, one of the most central journals in the study of the Russian military, were about contemporary Russian regular warfare.[1] As a comparison, in the journal of the Russian General Staff, *Voyennaya Mysl'* (military thought), in the same period, 55% of the articles were on the topic of regular warfare, and very few about hybrid warfare or similar topics.[2] This indicates that Western literature on the Russian military might not have the same emphasis as Russian military literature.

In general, the relevant Western literature can be divided into three categories. Firstly, there is a body of literature on Russian military thought. This part of the literature seems to have significantly increased after the Russian invasion of Crimea in 2014 (Jonsson, 2019, pp. 7–8; Sutyagin & Bronk, 2017, p. 1). To a large extent, this literature depends on analyses of Russian military academic discourse. For example, Timothy Thomas' works on Russian military thought relies heavily on Russian sources such as articles in military journals, and speeches and declarations from officers and politicians (see Thomas, 2015a, 2016, 2019). Authors in the category of military thought, including similar disciplines such as strategic culture, are plentiful but often preoccupied with the strategic level of war, non-military means or the interaction between the military and politics (see Covington, 2016; Johnson, 2018; Jonsson, 2019; Mcdermott & Bukkvoll, 2018). However, some authors' writings are closer to this thesis' topic: regular land warfare at the tactical and operational level of warfare (see Grau & Bartles, 2016b; Rogovoy & Giles, 2015; Sutyagin & Bronk, 2017).

The second category of literature includes publications that describe Russian equipment, capabilities, and national parameters. These sources often rely on Russian open sources such as news articles and Russian official websites. An example of a publication in this category is the FOI's (Swedish Defence Research Agency) report: *Russian Military Capability in a Ten-Year Perspective – 2019* (Westerlund et al., 2019). In this report, the authors utilize "official figures, open doctrines, and public statements" (Westerlund et al., 2019, p. 19). Compiling knowledge from Russian sources and giving an overview, these types of publications are central in establishing a foundation for further research and they act as reference sources. They are often published by think-tanks and governmental organizations such as RAND (for example Boston et al., 2018; Radin et al., 2019), RUSI (for example Watling, 2020; Watling & Reynolds, 2022a; Zabrodskyi et al., 2022), Defence Intelligence Agency (DIA) (for example

[1] Counted by the author according to the theme of headings (4 of 109 articles). This must be treated as an estimate only.
[2] Counted by the author according to the theme of headings (266 of 484 articles, 5 issues were not counted). This must be treated as an estimate only.

Russia Military Power, 2017), and above-mentioned FOI (for example Persson et al., 2016; Westerlund et al., 2019).

The third general category of literature relating to the Russian way of regular land warfare is case-specific analyses and descriptions. This category includes sources that use the historiographic method (Cornell & Starr, 2009; Oliker, 2001; Pukhov et al., 2014) and narrower analyses (Donovan, 2009; Fiore, 2017). The latter type is often based on preliminary analyses and is often not peer reviewed. During the 2022 Russian invasion of Ukraine, social media (for example the compilation of Russian losses by the *Oryx* OSINT-group) and podcasts (for example the *War-on-the-Rocks Podcast*) have been comprehensively used as a medium for such analyses. These analyses provide in-depth information about the war but are of less reliability.

1.5 Notes on Sources and Case-Selection

As described above, this thesis is based on the analysis of four cases of Russian military behavior. However, there are other cases of Russian use of military force that could also have been chosen. Consequently, this calls for a justification for choosing these specific cases. In other words, the criteria for case-selection should be clarified and the reasons the selected cases meet these criteria explained. Firstly, for a case to be relevant to this study, it has to be an example of the Russian Federation conducting regular land warfare. Secondly, it is beneficial if the Russian Armed Forces are the primary actor on one side in the conflict. If the Russian forces were to act through a proxy force or as a junior member of a coalition, their behavior would have to be adapted to other actors' way of warfare. Thus, in these circumstances, the Russian way of warfare would be less prevalent in Russian behavior. Conversely, if the Russian Armed Forces were the primary actor, they would be much freer to plan and act according to what they perceive as the most efficient way of conducting warfare, i.e. their way of warfare. The third criterion, however less important, is that a preplanned operation, as opposed to an *ad hoc* or reactive operation, would be expected to give an even greater opportunity to act according to an actor's way of warfare. If the operation is planned beforehand, there will be time to introduce more measures that are perceived to be optimal within the framework of a specific way of warfare.

The first case, the 2008 Russo-Georgian War, was a clear example of Russian use of regular warfare. Parts of a combined arms army, the 58th Army, and several additional large formations of tank, motor rifle, airborne and special operations forces were used in the invasion. Moreover, aircraft and long-range missile units were also used (Felgenhauer, 2009, pp. 166–167). Thus, the Russian invasion was conducted with large regular forces. Additionally, the Russian forces seemed prepared for the war.

As a minimum, they had prepared contingency plans in the case of a Georgian attack to regain control of South Ossetia (Lavrov, 2010, pp. 42–44). Consequently, the Russian invasion of Georgia was to some degree preplanned and it was also conducted by Russian forces alone.

The second and third cases are the 2014 invasion of Crimea and the intervention into Donbas from 2014. While these were part of the same Russo-Ukrainian conflict and in the same general time-period, they were laterally separated and portrayed somewhat different approaches. As a response to the Euromaidan and a possible Western alignment of Ukraine, Russian forces entered Crimea and occupied the peninsula. Similar to the 2008 Russo-Georgian War, the invasion of Crimea was another example of the Russian Armed Forces conducting a premeditated major military operation. To what extent the invasion was preplanned is not clear; however, again, there had to be some degree of preparations to account for the rapid response to the unfolding events and the large-scale movements of regular Russian forces (see Kofman et al., 2017, p. xii; Osflaten, 2021, p. 124). Consequently, Russian forces were to a minor degree acting through proxies or reacting to surprise attacks and this would likely allow the Russian forces to conduct operations as they desired; thus, to a larger degree showing their way of regular land warfare.

Conversely, the Russian intervention into Donbas from 2014 onwards was largely conducted through pro-Russian militias in Donbas, and, consequently, reduced the Russian ability to conduct operations according to its way of *regular* land warfare. Still, Russia has intermittently used regular forces in operations on Ukrainian territory (Sutyagin & Bronk, 2017, p. 13). Thus, the Russian Armed Forces have, directly and indirectly, had a substantial presence in the conflict. This makes it a suitable, however less obvious, fit for the selection criteria.

The 2022 Russian invasion of Ukraine was a full-scale invasion, characterized by high-intensity regular warfare, and is the largest war in Europe since World War II. Consequently, it is the most direct manifestation of the Russian way of regular land warfare and fits comprehensively all the case-selection criteria: the war is an example of regular warfare, it is conducted solely by the Russian Federation, and it was preplanned.

In the period after the Cold War, there are other cases of Russian use of regular military force that fit the criteria. The two internal wars between Russia and the Chechen republic are perhaps the most prominent ones. However, the 1994 First Chechen War occurred right after the Cold War and thus largely displayed the Soviet way of warfare, which would make it very similar to the model used for comparison in the research design. The Second Chechen War, being a counter-insurgency, included a substantial portion of irregular operations and is thus less interesting (see Miakinkov, 2011).

Nevertheless, there is no question that the intervention into the Donbas from 2014 also involved irregular aspects. However, being closer in time to the present and to the other selected cases, the Donbas case will be more relevant to this study.

The Russian involvement in the Syrian Civil War includes both regular and irregular means. However, while the Russian air component in Syria involves regular forces, the land component has a more irregular character, and they have not deployed any significant ground forces. The Russian Aerospace Force, Navy and special operations forces have provided the main elements to the operation; however, Russia has assisted the Syrian ground forces with advisors and arms deliveries (McDermott & Bukkvoll, 2017, pp. 21–22; Novichkov et al., 2018, pp. 4, 178, 206). Moreover, in this conflict, the Russian armed forces are acting as a coalition partner and not as the sole or even primary actor on its side in the conflict. Thus, the Syrian conflict revealed to a lesser degree the Russian way of regular land warfare.

Looking more closely, other historical cases could also be relevant. There are several local conflicts after the end of the Cold War in which Russian forces have been involved, albeit to various degrees. For example, internal conflicts in Transnistria, Nagorno-Karabakh, Abkhazia, South Ossetia and Tajikistan in the 1990s and early 2000s saw Russian involvement. However, in these conflicts, Russian military involvement was limited and thus neither particularly “regular” in form nor conducted as the primary actor to the conflict (see Grigas, 2016).

While it is not a selection criterion by itself, the selection of cases is also partly done to encompass the most interesting timeframe. The so-called Serdyukov reforms, announced after the 2008 Russo-Georgian War, mark the start of this interesting period. Encouraged by the abysmal performance of the Russian Armed Forces in the Georgian war, coupled with the need for reforming the Soviet style army, these reforms were implemented. While the reforms were announced after the war, the process was probably initiated earlier (see Subchapter 1.1). In any case, the period after 2007 is interesting because it includes both the 2008 Russo-Georgian War and the Serdyukov reforms.

As the research design involves a three-stage analysis, the sources may also be broadly divided into three categories. Firstly, the sources used to establish the Soviet way of regular land warfare of the 1980s are a combination of Western analyses and Russian primary sources. Secondly, the sources supporting the four case studies include histographies, news articles and interviews with persons that have detailed knowledge about Russian military behavior in the specific cases. Finally, the third-stage comparative analysis, providing a context to the results from the case studies, is supported by a broad range of different sources. These include Russian military journals, Russian field manuals and

commercial military handbooks. The strength of this thesis is the broad range of sources, viewing the Russian way of regular land warfare from several angles, and including both Russian language primary sources and Western analyses. This strength flows from the fact that all the different categories of sources have their inherent unique weaknesses that can be partly mitigated by this diversification.

One of weakness of the Western literature is that in cases where authors lack language proficiency in Russian or the time and interest in utilizing Russian source material, they are limited to use secondary sources. This leads to extensive referencing of a narrow selection of English language publications that use Russian primary sources. Consequently, numerous articles and reports are reliant on information from a few sources – if the original source is inaccurate, several other analyses will also be inaccurate. Mark Galeotti's blog comment on a speech made by General V. V. Gerasimov, the head of the Russian General Staff, in 2013 is a good example. Galeotti coined Gerasimov's view of future warfare, expressed in the speech, as "the Gerasimov doctrine". Approximately a year later, Russian forces invaded Crimea and intervened into Donbas, causing many to infer that there was a correlation between Galeotti's "Gerasimov doctrine" and the conduct of Russian forces in the Ukrainian conflict. The problem was that Galeotti, according to himself, had not genuinely meant that there existed a specific Russian doctrine of this sort. It was a "snappy title" to attract attention (Galeotti, 2018). As such, potentially whole Western academic traditions on the Russian military may be created on very limited understanding and empirical data of the object of study.

However, problems may arise even when basing the analysis on Russian primary sources. If the analysis relies on the use of open-source and official material, such as news articles and official websites, it may end up relying upon the image the Russian authorities want to display, not the image that is most accurate. For instance, an analysis of Russian military capabilities will easily become skewed if based on information published by the Russian ministry of defense; most likely, capabilities are boasted of and weaknesses omitted. Observing Russian military theoretical discourse can better reveal the true state of Russian military capabilities. However, this approach has its own limitations: as Russian military theoretical literature is largely written by "agents" of the Russian way of warfare, it may not deal with its fundamental characteristics because this is seen as self-explanatory. Similarly, as field manuals often contain normative provisions for how the Russians envisage or want to conduct combat, they reveal, to a lesser degree, the Russian Armed Forces' inherent strengths and weaknesses. Finally, as a way of warfare describes how an entity conducts warfare, Russian military behavior is a source that shows the Russian way of warfare very directly. However, this category of sources is less accessible – secrecy, the impracticality of observing combat,

and the one-sided perspective of the actors of combat makes the information less reliable. The different categories of sources will be presented in the following paragraphs.

Western literature on the Soviet way of regular land warfare of the 1980s. One of the main reasons for choosing the 1980s version of the Soviet way of warfare was the availability of English literature from this period. Institutions such as RUSI, the Soviet Army Studies Office (re-named the Foreign Military Studies Office in 1991), and the Soviet Studies Research Centre (re-named the Conflict Studies Research Centre in 1993) published substantial quantities of unclassified analyses of the Soviet Armed Forces in the 1980s. Prominent authors that were active in this period are: David M. Glantz, Richard Simpkin, Jacob W. Kipp, John Erickson, Harriet and William F. Scott, and many others. Consequently, few, if any other periods have shown a similar well-founded body of literature outside Russia or the Soviet Union. It is important to mention that many of the publications from this time-period relied heavily on Soviet primary sources. Secondly, the outside perspective could also be an advantage because it enabled the grasping of broad generalizations about the Soviet way of warfare. The Western authors were not actors within this cultural group themselves.

Taktika by General-Major V. G. *Reznichenko et al*. This work is a classic in Soviet military theory. Its first edition in 1966 was part of a body of Soviet literature that re-emphasized operational art (Glantz, 1991b, p. 206). The 1984 edition, which is extensively quoted in this thesis, is a broad and systematic depiction of Soviet tactics at the time (Erickson et al., 1986, p. 52). *Taktika* will be used to triangulate the claims of the Western literature, describing the Soviet way of regular land warfare in the 1980s, with an authoritative native source. It is downloaded from the website *Militera* (militera.lib.ru), which is a Russian military database, containing historical military material for researchers.

Sources supporting the case studies. The original plan was to conduct interviews with veterans from Georgia and Ukraine to get information about Russian military behavior in the 2008 Russo-Georgian War and Russian operations in Ukraine from 2014 onwards. However, the 2020 pandemic postponed these plans for a long time, and, as the pandemic restrictions were lifted and travel to Georgia and Ukraine became possible, the 2022 full-scale invasion also thwarted these plans: the Ukrainians were busy fighting a war and the Georgians became more reluctant to contribute to my research. Thus, while it was possible to conduct a few interviews, these events reduced dramatically the amount of available interview data.

Consequently, this thesis has had to rely largely on English-language histographies in its second-stage analysis (case studies), but also some Russian sources. This is a weakness, but, as shown by the

discussion above, the broad range of categories of sources partly mitigates this weakness. Central publications for the case studies include: (for the 2008 Russo-Georgian War Barabanov et al., 2010; A. Cohen & Hamilton, 2011; Cornell & Starr, 2009; Pallin & Westerlund, 2009; Tsyganok, 2011); (for the 2014 invasion of Crimea and intervention into Donbas Howard & Pukhov, 2014; Kofman et al., 2017; Shirokorad, 2018; The White Book of the ATO, 2017); and for the 2022 Invasion of Ukraine publications from the Institute for the Study of War (ISW) and RUSI. The details of Russian military behavior are primarily used from these secondary sources, and not their assessments.

Finally, induced by the general scarcity of publications describing the Russian way of regular land warfare at the tactical or operational levels of war, there has been a body of literature on this topic developed that is less academically rigorous, but nonetheless informative. These sources are often written by military practitioners, or are preliminary outcomes from field research. This type of literature can be found describing both the 2008 Russo-Georgian War (Donovan, 2009) and the conflict in Ukraine (Fiore, 2017; Fox, 2019; Karber, 2015).

Russian field manuals – squad to division. Some Russian field manuals (*boyevoy ustav*) are available in open sources. However, these versions are dated 2011 and 2013, which is early in the time-period of this study. Still, the provisions of these documents would still be expected to guide Russian military behavior long after their implementation. They will be included as appendices to this thesis and each of their origins will be presented in these appendices.

Russian commercial military handbooks. Another important category of contextual sources is a set of commercially purchased military handbooks. Russian officers and other military practitioners have compiled information from field manuals and general experience into different types of handbooks and then made it commercially available to Russian servicemembers. This material is acquired through the EastView company, specializing in making Russian-language sources available to a Western audience (“About EastView,” n.d.).

Course material. A set of course materials is used as a contextual source in this study. This course material is received from Ukrainian officers that participated at a staff course held by the *General of the Army A. V. Khruleva Military Academy of the “Rear” and Transport* in Saint Petersburg, the Russian Federation. While this course was conducted in 2013, before the hostilities between the Russian Federation and Ukraine began in 2014, the Ukrainian that provided this material assessed that some of the course material was redacted by Russian authorities due to operational security. However, despite some information being removed, the content provided on the course should be

authentic and applicable to the Russian Armed Forces. The lectures used as sources in this thesis are attached as appendices.

Russian military journals. There exist a wide variety of unclassified Russian military journals. In these journals, a rich academic debate is taking place, both in theoretical and practical fields, and at all levels of warfare. The most renowned journal is perhaps the unclassified journal *Voennaya Mysl'*, which is also often quoted in the West. It is published by the General Staff of the Russian Federation (Bukkvoll, 2011, pp. 684–687). Besides *Voennaya Mysl'*, there are other prominent journals such as *Nezavisimoye Voyennoye Obozreniye* (NVO, Independent Military Review), *Voyenno-Promyschlennyy Kuryer* (VPK, Military-Industrial Courier) and *Krasnaya Zvezda* (Red Star) (Jonsson, 2019, p. 18). These journals are well-suited sources for understanding the thought behind Russian military behavior, and, as such, an important contextual source for the third-stage analysis of this thesis.

Captured and leaked documents. This thesis also uses several documents that are captured or leaked to the public. Their origin and an assessment of their credibility is provided when they are used throughout the text. All this material is also attached as appendices to this thesis.

Chapter 2: Analytical Framework: The Soviet Way of Regular Land Warfare in the 1980s

This chapter will present the Soviet way of regular land warfare in the 1980s, including its historical background, fundamental traits and, as a conclusion, a set of indicators that will be used in the following analysis. These indicators aim to disclose whether the Soviet way of regular land warfare is present in Russian conflict behavior after 2007. This serves two purposes: firstly, it shows a continuity, or lack thereof, in the Soviet and Russian way of regular land warfare. Secondly, it constitutes an analytical framework that allows a more deductive approach to the analysis as explained in Subchapter 1.3. Additionally, the choice of the 1980s as a frame of reference provides another advantage: the Soviet threat of the 1980s is covered by a substantial body of literature in the West (Glantz, 1995, pp. viii–ix). Thus, if the goal is to create a detailed description of the Soviet way of regular land warfare, this literature can provide a robust starting point.

The Soviet way of regular land warfare in the 1980s is divided into thematic "characteristics". The justification of these characteristics is explained in the following three subchapters. Firstly, the presentation of the Soviet way of regular land warfare in the 1980s starts by explaining the historical background. It traces the origins of several characteristics all the way back to the early Soviet period. Secondly, the next subchapter will explain the broader fundamental traits of the Russian approach to warfare. These fundamental traits ("warfare on a massive scale", "a scientific view of warfare", "the balance between mass and technology", "the primacy of the offense", and "the Soviet conceptual view of combat") are important to understand as they elucidate the general logic of the Soviet approach to land warfare. Finally, the last subchapter presents concrete indicators, which denote the presence of the characteristics in a particular case. As such, these indicators can then be tested on the four case studies. They create an analytical framework that guides the analyses and, hopefully, reduce the possibility of creating an arbitrary theory. Table 1 at the end of the next subchapter explains the relationship between the historical background and fundamental traits of the Soviet way of regular land warfare in the 1980s and the set of characteristics. In Subchapter 2.3 a similar table will present the specific indicators related to each of the characteristics. These tables will aid the reader in understanding the selection of the specific characteristics that might otherwise seem arbitrary.

2.1 The Historical Background of the Soviet Way of Regular Land Warfare of the 1980s

To understand the Soviet way of warfare in the 1980s, the historical origin of its characteristics is important to grasp. A convincing description of a Soviet way of warfare needs to show that its elements are somewhat rooted in Soviet military history; if not, they might be dismissed as arbitrary. Thus, showing the historical origin will, arguably, build clarity and validity. This subchapter will trace the Soviet way of regular land warfare from the concluding period of Imperial Russia to the early 1980s.

The military history of the Soviet Union might be broadly divided into four periods: firstly, as with other European major powers, the Russian and Soviet armies experienced the full force of mass industrial warfare in World War I, but also, albeit to a lesser extent, in the Soviet Civil War. These events were important in shaping Soviet operational art and tactics. The second era was the period between the world wars, which saw a Soviet "heyday" in the development of operational art. More specifically, a generation of Soviet military theorists developed the so-called "deep operations theory". Following this, World War II, with its catastrophic consequences for the Soviet Union and vast amounts of combat experience, put the Soviet way of warfare to the test. This had a honing effect on the Soviet way of warfare – the Soviet Army at the conclusion of the war was a very different organization than the army that started out in 1941. Finally, the last period includes the Cold War up until the 1980s. During the Cold War, nuclear weapons became the most important element of warfare, which influenced both operational art and tactics.

Consequently, the characteristics of the Soviet way of regular land warfare can trace their origins from different parts of Soviet military history. However, most of the characteristics have their origin in the inter-war period, and in particular from a group of Soviet military theorists that were world-leading in the development of operational art in the 1920s and 1930s. Observing the stalemate of the Western Front in World War I, these military theorists struggled with the fundamental problems of achieving a breakthrough and re-establishing decisive maneuvers on the battlefield. Their solution, the deep operations theory, re-emerged in Soviet warfare later, both during World War II and the Cold War (See Hines, 1988, p. 55).

The First World War and the Civil War – the introduction of mass industrial warfare

As the nineteenth century came to its end, the Industrial Revolution had transformed the system of production, and thus also warfare. The enormous increase in industrial potential had made it possible to equip and sustain armies on an increasingly larger scale. This was coupled with an

increased ability to transport troops and supplies on the ever-expanding railroad infrastructure. Additionally, strong nationalist sentiments, triggered by the French Revolution and demonstrated by the politically inspired mass armies of the Napoleonic Wars, enabled states to conscript enormous quantities of manpower from their populations. Consequently, the armies that could be fielded at the beginning of the twentieth century dwarfed what had been seen earlier (Biddle, 2004, pp. 29–30). Despite the fact that the American Civil War and the 1870 Franco-Prussian War involved millions of soldiers, it was only a prelude to the scale of warfare in the twentieth century. The Russo-Japanese War of 1904-5 was the Russian Empire's first encounter with the new type of warfare (Harrison, 2001, p. 16).

Consequently, the massive armies of the new era led to the manifestation of two characteristics of warfare. Firstly, the flanks of the enemy army, so tactically important in earlier warfare, disappeared or became less accessible. Thus, outflanking or turning maneuvers were often impossible and warfare took on a more linear shape. Secondly, the technological developments of the nineteenth century had drastically increased the range and lethality of artillery and firearms. The rate of artillery fire and range was increased many times over between 1814 and 1914: a Napoleonic brass cannon was able to fire one round every 30 seconds at a distance of 1,000 yards, but a standard artillery piece from 1914 could fire approximately three times as many rounds at ten times the distance. Similarly, innovations in firearms, such as breechloading and automatic firing mechanism, made equal advances in the effectiveness of small arms fire (Biddle, 2004, p. 29). Both developments, coupled with the industrial capacity to churn out weapons and ammunition, meant that armies of the early twentieth century could easily saturate an area of considerable depth in front of their positions with effective fire.

The new characteristics of warfare, an unbroken frontline and the ability to employ effective fire over large areas, presented a challenging problem to contemporary military organizations. If you could not outflank the enemy, and a frontal assault would cause heavy casualties, maneuver was impeded. Perhaps the most striking demonstration of this new type of warfare was the stalemate of the Western Front in World War I. After an initial phase of frenetic offensive operations, the warring parties had to accept a static and protracted situation. Imperial Russia got its first taste of this new type of warfare in the 1904-5 Russo-Japanese War, and as a major party in World War I, it experienced first-hand the full scope of modern total war. However, despite Russian forces were fighting on the Eastern Front, Soviet military theorists did also look to the Western Front when analyzing modern warfare. Palle Ydstebø even argues that it was the Allied offensives in 1918 that were the primary inspiration for Svechin's development of operational art. Svechin, one of the most

central Soviet military theorists in the inter-war period, did not explicitly mention the Western Front as an inspiration for his thoughts; however, "[the lack of mention] reflected the peculiarities of the debate climate in the Soviet Union, and particularly the Red Army" (Ydstebø, 2021, pp. 222–223). Thus, to a large extent, it was the stalemate of World War I and trench warfare that became regarded as the main problem for warfare for the Soviets.

Consequently, many of the characteristic features of Soviet operational art and tactics, later developed in the 1920s and 1930s, had their origin in World War I. These characteristics include the exploitation of emerging technologies such as motorization, mechanization, and flight;[3] the indispensability of combined arms; the centralization at the operational level of warfare; penetration as the primary goal of operational art; and the re-establishment of surprise as a central part of operations. All these theoretical developments became lasting characteristics of the Soviet way of warfare, also present in the 1980s. In the following paragraphs, these embryonic points of departure in World War I will be elaborated on.

After the trench warfare of World War I, both Soviet military theorists and their British counterparts, most importantly J. F. C. Fuller and Basil Liddell Hart, wanted to devise methods to overcome the problem of re-establishing maneuver, and thus decisiveness, on the battlefield. There was a general agreement as to the means required to accomplish the new type of warfare; however, the method of utilizing these means differed to some degree. The means that were expected to re-establish maneuver were motor vehicles, armored vehicles (most importantly tanks), and aircraft (Kagan, 2002b, pp. 82–83). This in turn enabled motorization, mechanization, and the ability to bring firepower into high-speed maneuvers. The comprehensive exploitation of these technologies has been a lasting characteristic of Soviet operational art and tactics.

However, as the British envisioned a fluid battlefield where tanks maneuvered in large homogenous units, the Soviets did not share this notion. On the contrary, they foresaw a similar starting point to the trench warfare of World War I: a continuous frontline that needed to be breached. Consequently, the Soviets saw the ability to concentrate firepower, integrated with the infantry assault, as essential. This, in turn, demanded an artillery-heavy, combined arms force to achieve the breakthrough. Thus, combined arms warfare, that is, the utilization of several arms in combination to provide higher combat power than each in isolation, became central to Soviet land warfare (Kagan, 2002b, pp. 83–84). Following the breakthrough, highly mobile tank units were needed to exploit into

[3] In this thesis "motorization" implies the ability for motor transportation by organic vehicles. "Mechanization" implies the ability to fight mounted on combat vehicles such as tanks and armored infantry fighting vehicles (AIFV).

the depth of the opponent's defensive system. Consequently, three characteristics of the Soviet way of regular land warfare emerged: firstly, combined arms became essential to achieve a breakthrough in modern warfare. Secondly and thirdly, penetration of the enemy defensive system was seen as both essential and the main challenge, and the primacy of the operational level of warfare was necessary to translate this breakthrough into a maneuver that could be significant beyond the local tactical situation.

The Soviet preference for surprise does also have some of its origins in the Western Front in World War I. The defender's ability to use the railroad network to mass reserves on vulnerable sectors, or counterattack, while the attackers had to advance on foot through difficult terrain and stiff resistance in the trenches, gave defenders a time advantage. The attackers were never able to move quickly enough to exploit their breakthroughs, thus surprise was never decisive. However, after armor technology matured, Soviet theorists saw that the time dimension was less unfavorable for the attacker; and thus re-established the viability of the surprise attack (Kagan, 2002b, p. 90).

As the Russian Empire collapsed into turmoil and withdrew from the World War, the Bolsheviks established control over the state apparatus. However, the ordeals of the Russian people were not yet over. After the peace treaty of Brest-Litovsk, a chaotic and bloody civil war commenced. In short, the Bolsheviks, who controlled central Russia and most of the urban population, fought a diverse collection of forces called The Whites. They included nationalist movements from different parts of the former Russian Empire, other ideological motivated groups, contra-revolutionary forces from the old regime, former Czech and Slovak prisoners of war and British, French, American, German, and Japanese interventionist forces (Mawdsley, 2011, pp. 436–446). This war was characterized by several factors that would eventually become important for the Soviet way of warfare: firstly, the vastness of the territory on which the Civil War was fought, and the relatively small forces involved, created a type of warfare that was very different from the trenches of World War I. Consequently, large gaps, thinly defended sectors and enormous rear areas were commonplace (Stone, 2002, pp. 20–21). Secondly, the limited forces that were available to the warring parties were badly organized and trained, often nothing more than militias. The industrial capacity, impaired after several years of war and social upheaval, was not able to sufficiently equip the existing forces with weapons and ammunition (Donnelly, 1988, pp. 72–73).

While the World War I gave rise to several theoretical developments *after* the war, the contribution from the Soviet Civil War was perhaps more a result of practical developments *during* the war. The specific circumstances of the war created their own set of unique military problems. Contrary to the World War I, the Civil War allowed space for maneuver, but did also include a precarious scarcity of

troops. Thus, the exploitation of all means to enhance mobility, both tactically and strategically, was emphasized. As will be shown below, the Soviet preference for large-scale offensive maneuvers, facilitating operational level objectives, and the build-up of substantial reserves at the expense of frontline units in order to be able to conduct these large-scale offensive maneuvers, even when under pressure, were comprehensively practiced during the Civil War.

The enormous size of the battlefield and porous state of the frontlines created a need for forces that could maneuver substantial firepower, quickly and over long distances. Due to the condition of the Soviet industry, motorization and mechanization of the communist forces was not possible. This led to an increased reliance on cavalry during the Civil War. The relatively better mobility of mounted units, compared to leg infantry, gave the cavalry arm significant advantages under Civil War conditions. Cavalry was used as a strike force, and to exploit and pursue (Harrison, 2001, pp. 104–106). Also, railways became very important, both to transport forces and supplies, but also to enable heavy firepower through the use of cannon-equipped armored trains (Mawdsley, 2011, p. 294). The character of the Civil War, and the means devised to move firepower over vast distances, made Soviet theorists more prone to review the role of maneuver on the modern battlefield. Despite some theorists seeing the means itself, the cavalry arm, as important, there were prominent officers that realized the ground-breaking *conceptual* importance of the Civil War experience in that maneuver might be supported by mechanization and motorization (see Stone, 2002, p. 21).

Several historians tone down the impact of the Civil War on later theorical gains in the Soviet Union (see Kagan, 2002b, p. 84; Ydstebø, 2021). Interestingly, Svechin warned his contemporaries that:

> The study of the World War seems to us especially important for the Red Army, since only it can be a prerequisite for independent creativity in the art of war. Works of the [Soviet] Civil War cannot compensate for gaps in the study of World War (…) Any direction in the art of war, which will be chosen by the Red Army, will be one way or another an interpretation of the experience of the World War. The World War provides the majority of that particular material, which will contribute to our military thought for a long time (Svechin, 1926/2000, pp. 236–237).

Shimon Naveh, on the other hand, sees the Civil War experience as crucial to the development of the deep operations theory (Naveh, 1997, pp. 167–168). According to him, the Civil War "discredited completely the linear form as an operational manouvering pattern in the eyes of the Soviet revolutionary command, thus encouraging the field commanders to seek decisions by means of bold manoevres and deep actions" (Naveh, 1997, p. 168). Other historians also agree on the formative

role of the Civil War on the development of the Soviet way of warfare. For example, David M. Glantz sees the Civil War period as important to the "embryonic justification for future Soviet combat techniques, such as (…) shock groups (…) and mobile groups" (Glantz, 1991b, p. 59; see also Harrison, 2001, p. 105). The former is important in creating a breakthrough and the latter in exploiting it into the depth. As such, both Naveh and Glantz indicate that the Civil War experience led to an emphasis on large-scale penetrations of the opponent's defensive line, and thus centralization at the operational level of warfare, which became important characteristics of the Soviet way of warfare.

The character of the Civil War, with its large theatre of operations, but insufficient forces available, made the Soviet commanders proficient in shifting large forces between sectors. The increased operational mobility, e.g. provided by massed cavalry, was coupled with the not-so-novel concept of concentration. The need to shore up enemy offensives, and to conduct their own offensives, and thus conduct major operations in a rapid sequence, created the need to quickly move and deploy large forces. Thus, due to the enormous scale of these activities, the front command level (army group) became the focal point of operational art (Glantz, 1991b, p. 57). Additionally, the ability to keep large reserves, counter-intuitively when considering the scarcity of forces, became paramount. The strategic reserves ensured the ability to conduct offensive and mobile operations (Glantz, 1991b, pp. 56–58). Harrison expands on the importance of the operational experiences of the Civil War; he argues that "the fronts' various operations are significant for the *consecutiveness* of their conduct", and that the Soviet conduct of operations resembled a string of offensive operations, enabled by keeping strategic reserves, ruthless massing of forces, and routinely withdrawing and reconstituting forces to resume offensive operations (Harrison, 2001, p. 106). This method of carefully planned consecutive offensive operations surely belongs to the realm of operational art, and, combined with inferences from other conflicts in the early twentieth century, paved the way for the development of Soviet operational theory in the inter-war years.

The inter-war period – the development of a theory of operational art

The period after World War I and the Soviet Civil War saw substantial development in Soviet operational art and tactics. This development was guided by what was seen as the central military problem of the day. The Soviets saw the ability to break through a strong continuous defensive line, with great depth and firepower, as the main problem of warfare. However, it was not enough to just create a breakthrough: the Western Front of World War I had shown that such a breakthrough had to be made significant to the resolution of the war (Kagan, 2002b, pp. 81–82). Thus, the re-establishment of maneuver also became paramount – a breakthrough had to be followed by a large maneuver on an operational scale. In order to achieve this, Soviet military theorists devised several

means. Firstly, the operational level of war became the center of gravity in the command structure. If the operations were to be decisive, the resources and command authority had to be largely centralized to a level that could achieve decisive results, i.e. the operational level of warfare. Secondly, the element of surprise, combined arms, echelonment and mechanization were seen as essential ingredients in achieving the necessary breakthrough and subsequently initiating large-scale offensive maneuvers into the depth of the enemy's defensive system. This subchapter will detail how the Soviets saw the military problem of their day, what they needed to achieve to overcome it, and what means they devised to be able to conduct such an undertaking.

Already in Imperial Russia, military theorists had started to grasp these trends in modern warfare. There were, in particular, two concepts already present in the Imperial Army before the Revolution, but in a nascent theoretical form. Firstly, a notion of "the operation" – a consecutive string of separate battles – was touched upon by several theorists. No longer could battles be easily distinguished from each other, and there was a need to coordinate this continuous military activity into a coherent whole to reach overarching objectives; in other words, there was a need to plan and execute operations (Savushkin, 1995, pp. 245–248). Secondly, it was no longer sufficient to command the nation's armies, the largest unit designed for conducting a single battle or operation, directly from the commander-in-chief – an intermediate command level was needed. For example, already in the Russo-Japanese War, the Russian commander, General A. N. Kuropatkin, divided his army into smaller army-sized units. Thus, he was commanding an army group, or *front* in Russian terminology (Harrison, 2001, p. 13). In essence, early in the twentieth century, the sheer size of the forces involved, combined with the need to arrange a series of engagements into a coherent operation, demanded a more sophisticated and holistic approach to warfare. The prevalent paradigm up until then, *vernichtungschlacht*, the fulfillment of strategy through a single tactical battle, was no longer sufficient (Glantz, 1991b, pp. 17–18). In that, the seeds of a theory of operational art had been sown.

The specific Soviet theory of operational art was derived from two elements: the first, which was touched upon above, is the realization that a modern war could not be decided by a single battle. It was evident to the Soviet theorists that World War I had clearly demonstrated the end of the era of *Vernichtungsschlacht* (Harrison, 2001, pp. 152–153). The second element was the result of an internal military theoretical debate about possible strategies for the Soviet Union: either to exhaust the enemy until limited war aims could be achieved, or to destroy the enemy military organization through forceful and offensive operations. Svechin, the main proponent of the former, argued that World War I had shown that the resilience of a modern military organization, supported by the resources of the state, dismissed the possibility of a total annihilation of the enemy military.

Opponents of this, with Field Marshal M. N. Tukhachevskiy as the figurehead, claimed that this was possible, clearly inspired by Marxist-Leninist ideology and Soviet experience from the Civil War. The outcome of the debate was an acceptance that future war would be protracted and extremely costly to the nation; however, it was also assumed that an offensive strategy of destruction was possible and preferable (Harrison, 2010, pp. 41–42). Discussing a strategy of destruction, Colonel G. S. Isserson argued that the victory of the Allies in World War I was caused by nothing more than economic and political dominance, and that:

> The system of battles for attrition was incapable of finding an operational solution to the problem of breaching the continuous front, and was therefore senseless. As for exhausting the enemy, the system exhausted the attackers more than the defenders. The whole thing was a senseless system of self-attrition (Isserson, 1936/2013, p. 36).

The Soviets then believed that, despite there being no *solitary* decisive battle, there would be a last battle of many – a decisive *final* battle (Savushkin, 1995, pp. 246–248). Consequently, there was a need to plan and execute the necessary series of engagements and operations in order to reach this final decisive battle. This required a significant centralization of resources and command authority at the operational level of warfare. It was at this level that the entirety of the military situation could be understood and the plan devised that would lead to the ultimate objective – the destruction of the enemy force.

Colonel N. N. Movchin analyzed the opening maneuvers of the Germans in World War I and argued that the German high command's expectation of controlling eight armies was not functional, and that the individual army commanders dictated operational developments. Consequently, the armies' tactical actions were not linked to the overall strategy (Movchin, 1928, p. 119). Thus, according to Movchin, the core of operational art was the mastering of complexity. A string of consecutive operations needed to be put together in order to reach the overall strategic aim. This is visible in the central role the *front* played in Soviet operational art. Again, centralization at higher command levels was seen as necessary to control the complexity of modern warfare.

Another fundamental element of military theoretical developments during the interwar years was the element of depth. An operational decisive maneuver required access to the depth of the opponent's defensive system. Consequently, creating a breakthrough and thus accessing the depth was critical in defeating the enemy force. Brigade Commander N. E. Varfomoleyev argued that the capability "to switch tactical successes to success on an operational scale" hinged on the ability to break through the enemy's tactical defenses, influence the enemy forces throughout the defensive

system and retain the mobility to continue into the operational depth of the enemy and destroy his main force (Varfomoleyev, 1933, pp. 173–174). Isserson had a similar idea. He argued that in modern combat, the breakthrough was indispensable. Discussing the "Schlieffen-plan," he observed that:

> Linear strategy thereby came to produce its own antithesis. Its whole essence had been to extend the front laterally for envelopment, thereby avoiding the frontal attack. Now, the possibility for lateral extension was lost, and, along with it, freedom of maneuver along a line. In consequence, linear strategy lost the essence of its reason for being (Isserson, 1936/2013, p. 32).

Thus, to face the opponent's defensive line was inevitable, but decisiveness was only possible by accessing the depth of the opponent's defensive system; in other words, penetration became necessary. However, according to Isserson, a modern defense would not only be continuous, but also extremely deep. This would pose immense challenges to an attacker and threaten to nullify the technological developments (motorization and mechanization) that made deep battle possible. In other words, there was a danger of ending up with the deadlock of trench warfare unless the problem of achieving penetration was resolved (Isserson, 1936/2013, pp. 46–47). Consequently, the emphasis on creating a successful breakthrough and penetrating the defensive system became a lasting characteristic of Soviet warfare.

The main method of solving this problem was to divide the force into two elements with two distinct functions: a powerful combined arms force to create a breach in the enemy lines, and a mobile force to exploit it into the depth once the breach had been established (Isserson, 1936/2013; Triandafillov, 1936; Varfomoleyev, 1933). For the former problem, General V. K. Triandafillov prescribed the use of a massive army[4] consisting of infantry, artillery, aviation and all necessary support, in what he called a "shock army". He envisioned a modern tactical defense as being at least 20-35 km deep, with operational reserves 80-100 km further back. To avoid the defender plugging any holes in the frontline by moving up reserves, Triandafillov assessed that the breakthrough had to have a width of at least one-third of the total frontal length. Each shock army would be responsible for 25-30 km of this breakthrough sector and had to be able to completely root out all resistance in its sector. Only then could the mobile forces advance through the breach and into the depth (Triandafillov, 1936, Chapter Operatsiya-Udarnaya Armiya). Varfomoleyev elaborated on the monumental challenge of achieving a breakthrough in modern conditions. He envisaged functional echelonment even within the shock army itself. The first echelon would force a breach in the first tactical defensive line of the

[4] This refers to the command level "army", contrary to the general term describing a nation's land forces.

enemy. Then, the shock army's second echelon would advance into the operational defensive zone and complete the breakthrough (Varfomoleyev, 1933, pp. 174–175). Isserson's main contribution to this problem set was echelonment – both in depth and in function. An echelonment of the attack forces enabled combat along the depth dimension and an effective exploitation of the breakthrough by deploying specialized forces in each echelon. First, an infantry-heavy combined arms force was used to break the tactical defense zone, then, a second echelon of mechanized and mobile forces, supported by ground attack aircraft, would be inserted into the breach and continue the attack into the operational depth of the enemy (Isserson, 1936/2013, pp. 66–68). Thus, the Soviet solution to the problem of achieving penetration involved large combined arms units, echeloned in depth, and with a high degree of motorization and mechanization. The characteristics of penetration, mechanization, combined arms and echelonment in the Soviet way of regular land warfare in the 1980s, can trace its origins firmly back to this group of Soviet military theorists of the 1920s and 1930s.

The Soviet practice of arranging forces in echelons is important. More specifically, echelonment is to divide a force into consecutive lines, rather than a single line, even when concentrating forces at a decisive point to force a breakthrough. Naveh argues that this was a Soviet solution to the problem of attrition, which impaired major attacks on the Western Front during World War I. An echeloned attacking force could achieve extreme concentration, *viz*. the ratio of forces per km of frontline, without getting the whole breakthrough force committed at the same time, and thus reduce combat-induced attrition (Naveh, 1997, p. 174). Kagan, as well, sees the echelonment of forces as one of the important characteristics of Soviet warfare, brought about by the experience of the early period of the Soviet Union. He argues that at the heart of Soviet operational art was the notion of "echelonment of the attack to match the structure of the defence;" that is, in order to defeat a defense in depth, consisting of consecutive defensive lines, the attack needed a similar configuration to prolong the operation and to avoid the premature exhaustion of the attack (Kagan, 2002b, pp. 88–89). Naveh equally emphasizes the depth dimension of Soviet operational art. However, he argues that the emphasis on depth had a distinctly *systemic* theoretical foundation. More precisely, he proposes a theoretical development that was based on established system theory (Naveh, 1997, p. 191). This systemic perspective has been criticized; Soviet operational art was seen to be more practically oriented and less preoccupied with the cognitive aspects of warfare (see for example Kelly & Brennan, 2009, pp. 56–58, note 82). However, the fact that warfare had a depth dimension, in addition to the traditional lateral dimension, was clearly one of the main elements of Soviet military theory in the interwar period.

The 1920s and 1930s were a "golden age" of Soviet operational art and tactics. Soviet military theorists had, for the first time ever worldwide, devised a solid theoretical foundation for the operational level of warfare and a sound method for penetrating the frontlines of modern armies. Thus, they had, at least conceptually, re-established maneuver on the battlefield. The pinnacle of this development was the "1936 *Polevoy Ustav*" (Field Regulation). This Soviet manual presented the concept of deep battle, which is the tactical variant of deep operations (Glantz, 1991b, p. 79). However, as we shall see, this "golden age" came to an abrupt end.

The Second World War – a total war

On June 22, 1941, three large German army groups launched a surprise attack on the Soviet Union. In the ensuing fighting, large numbers of Soviet forces were destroyed; by the end of the year, the Soviet losses had reached three million soldiers, 20.000 tanks and 18.000 aircraft. German forces had besieged Leningrad, occupied most of Ukraine and were closing in on Moscow (Erickson, 2002, pp. 115–116). The roots of this catastrophe can be found in earlier events. Firstly, the Great Purge removed a great deal of the officers of the Red Army; 3 of 5 field marshals, 14 of 16 army commanders, 60 of 67 corps commanders, and 136 of 199 division commanders were either executed, imprisoned or demoted from their positions (Harrison, 2010, p. 220). Secondly, the Soviet interpretation of the Spanish Civil War misled the Soviet leadership into abolishing large mechanized formations. While they rightly thought that tanks needed infantry support, they wrongly concluded that this meant tanks were reduced to infantry support weapons. Consequently, they started to distribute tanks to the infantry formations. Not until the German successes in Poland and France did they realize their mistake and start to re-establish mechanized corps with motorized infantry (Erickson, 2002, p. 112; Habeck, 2002, pp. 93–106). Finally, contrary to the prediction of Stalin, the Germans were able to launch a surprise attack. Stalin's fear of initiating an unnecessary war deprived him of both the options of a pre-emptive attack and a full-scale mobilization with the result that the Red Army was just partly mobilized, but also poised for offensive operations against what was thought to be a partly concentrated German force (Erickson, 2002, pp. 111–114). These factors, combined with a general lack of professionalism and readiness, made the Red Army ill-prepared for large-scale modern warfare in the summer of 1941.

The Soviet catastrophe continued well into 1942. It was not until the successful, yet bloody, battle of Stalingrad that the tables started to turn. The German onslaught was finally stopped at Stalingrad, and the following Soviet offensive trapped 300.000 German soldiers, the German Sixth Army, in the city in November 1942 (Erickson, 2002, pp. 131–132). From there on, the Soviets regained the strategic initiative, and one and a half years later, the Red Army captured Berlin and ended the war in

Europe. This incredible shift was partly a result of the resilience and sacrifice of the Soviet state and people, but also due to a fundamental shift in the Red Army's way of warfare. Importantly, in the beginning of 1944, after the Soviets had regained the strategic initiative, they only held a slight numerical superiority, which implies that the myth of the "red hordes," "drowning the Germans in human waves," is misleading (Kagan, 2002a, pp. 147–148; Watt, 2008, p. 673). Remarkably, this shift was carried out in the midst of a desperate war of survival.

Despite the general tactical superiority of German units, and the lack of a clear Soviet numerical superiority, the Soviets still prevailed. According to Soviet theorists, the reason for their success was their greater competence at the operational level of warfare. Their ability to generate large strategic and operational reserves by "starving" the frontline units, and then concentrating superior forces in well-planned and controlled large-scale offensives, was the recipe that led to victory (Zlobin, 1995, p. 224). Additionally, the offensives, aimed at creating large breakthroughs, subsequently enabled the encirclement and destruction of large enemy forces. These offensives were often executed consecutively; when one offensive lost momentum and transited into defensive operations, another offensive, with fresh forces, commenced on its heel (Watt, 2008, pp. 673–674). In other words, the Soviet military machine had to re-discover the operational theory they had developed in the interwar years. The theories of deep operations and deep battle, nearly lost in the purges, were brought forward and implemented. However, the deep operations theory of Tukhachevskiy's generation was not only implemented, it was continuously adjusted and improved according to Soviet experiences, and resurged from the Great Patriotic War as a complete operational concept, shaped by war (Kagan, 2002a, pp. 137–138, 148–149). As such, most of the characteristics of the Soviet way of regular land warfare in the 1980s were present during World War II. While largely developed earlier in the inter-war years, approaches such as combined arms, centralization, mechanization, echelonment and surprise were further developed and honed during the war. However, above all, the Soviet ability of centralized planning and command became staggering. Large-scale offensives, penetrating deep behind German lines, were planned, organized and executed effectively, often surprising German forces despite their immense scale (Watt, 2008).

As the war developed, the tactical conduct of the Red Army soldiers improved too. Many of the improvements were closely connected to the improvements in operational art. For example, the echelonment of forces was re-introduced into the Red Army when the ability to create large force concentrations increased. The Soviets gained a preference for narrower, but echeloned, concentrations. This was a clear difference from the broad front offensives earlier in the war (Kagan, 2002a, p. 147). The Soviet method of echelonment drastically increased the ability both to conduct

and to defeat elastic defenses (Glantz, 1991b, pp. 152–157). Importantly, the Red Army became highly competent in the art of timely and effectively transitioning between offense and defense. The massed strategic offensives, relying on an effective transition to the offense, was gradually supplemented by an ability to stop the offensives at the optimal time and transition into defensive operations. Earlier in the war, the Soviet offensives often continued until the notoriously powerful German counterattacks decimated the attacking Soviet forces (Kagan, 2002a, p. 147). A major part of the successful Soviet large-scale offensives was their inclusion of mobile mechanized forces that could develop tactical penetrations, conducted by powerful combined arms shock formations, into operational gains; that is, to develop a tactical breakthrough into a deep operational maneuver. The primary force capable of doing this was the tank army. Glantz argues that, " [t]hese tank armies, along with the existing tank and mechanized corps at army level, brought to full fruition a force structure capable of implementing the concepts enunciated in 1936 concerning the exploitation of tactical success into operational success" (Glantz, 1991b, p. 123). Overall, the ability of creating and operating these enormous tank-heavy mobile groups, which often operated at high speeds over long distances, presupposed a sophisticated ability to plan and execute logistics, artillery support and command.

A fundamental element of the Soviet ability to concentrate forces was their use of deception; it was often used very successfully even at the strategic level. The Red Army had transformed from being the victim of a catastrophic surprise-attack in 1941, to becoming masters in the art of surprise and deception. Illustratively, they routinely surprised the Germans with the timing and location of their offensives. The major offensives in the summer of 1944 were clear examples of that. The Soviet offensive into Finland in June acted as a deception for the *Bagration* offensive in Belorussia, which in turn acted as a deception for later offensives in Western Ukraine and Romania. In other words, as the *Bagration* offensive came to an end, and because the Germans had committed their reserves to halt this offensive, the Soviets exploited this fact and started another successful offensive further to the south (Watt, 2008, pp. 680–686). Consequently, at the end of World War II, the Red Army was a battle-hardened force, capable of conducting effective offensives on a great scale, involving millions of soldiers and large mechanized forces, penetrating deep into the opponent's defensive system.

The Cold War – an age of nuclear primacy

Not long after the Red Army occupied Berlin and World War II was finally over, another major power confrontation arose. The Berlin Crisis and the Korean War demonstrated that it was fascism that had united the world: as fascism disappeared, the communist East and the capitalist West fell into a Cold War. One technology, above all others, had created fundamental changes to the strategic realities of

the time: namely nuclear weapons. The enormous destructiveness of nuclear weapons, and thus their decisiveness, increased Soviet reliance on the nuclear option at the expense of conventional forces, in particular ground forces. Additionally, the end of the war, and the need to divert resources to the rebuilding of the Soviet Union, contributed to the downscaling of the conventional forces and the prioritization of a nuclear alternative for defense (Glantz, 1991b, pp. 177–179). However, Soviet military theorists still developed land warfare theory further, but with the added element of nuclear weapons.

First of all, following the advent of nuclear weapons, Soviet military theorists realized that the massing of forces at breakthrough points could not be executed as aggressively as during World War II; it would make these massed forces vulnerable to nuclear strikes. Additionally, the concentration of forces was not necessary to the same degree because a gap in the enemy's frontline could easily be achieved by nuclear firepower. On the same token, the vast increase of firepower also reduced the viability of traditional shock forces and artillery (Dick, 1979, pp. 66–67). However, maneuver was still of the essence – perhaps even more so. After nuclear firepower had struck, maneuverable forces needed to exploit the gaps and general chaos created by the nuclear detonations. Consequently, penetrations and deep operations were not only important, but also more accessible. As the need for shock forces diminished, there was also less need for specialized mobile groups. Thus, the Soviet forces abandoned the concept of two functionally different categories of forces: one to breach the opponent's defenses, and one to maneuver through the breach and into the depth. It was now demanded of all maneuver forces to be able to penetrate and exploit (Hart & Gormley, 1983, p. 29).

Consequently, Field Marshal G. K. Zhukov reformed the structure of the Soviet Army in the 1950s. The war-time dual system of slow rifle units and fast mechanized forces was removed and substituted by a single type of streamlined, fully motorized, more self-contained, flexible and balanced units. Tank and motor rifle divisions constituted combined arms and tank armies – both with a balance between tanks and motorized infantry. Overall, the Soviet units became more tank-heavy at the expense of infantry and artillery in order to be more resilient to the effects of nuclear and chemical weapons, and to better exploit the anticipated open and fragmented battlefield (Glantz, 1991b, pp. 180–183). Artillery was deemed to be less favorable because of the enormous potential firepower in nuclear weapons: to blow a gap in the enemy frontline was not the challenge it had been before. However, combined arms were still important, and mechanization, which increased mobility and improved the resilience against the effects of nuclear weapons, was perhaps even more important than during World War II.

Studies of the initial period of war became very important to Soviet military theorists during the Cold War (Glantz, 1991b, pp. 178, 206). The fragmented and chaotic battlefield, created by nuclear strikes and fully mechanized forces, meant that there were great opportunities for the most resolute and swift in the initial period of the conflict, even hours after the fighting commenced. The importance of the initial period of war led to a reinvigorated interest in strategic surprise and how to best exploit the situation when surprise was achieved. As surprise became an important question in Soviet military theory, secrecy and deception continued to be essential to the Soviets as these elements aided the achievement of surprise (Glantz, 1991b, p. 190).

In the 1970s, Soviet military theorists started to revise the perception that war with the West would be fought with nuclear weapons from the onset. A situation where the opponent abstained from the use of nuclear weapons, for example within the US concept of "flexible response," created the possibility of, at least in part, a conventional war. Thus, combined arms, conventional firepower, operational art and tactics increased in importance, and, yet again, Soviet military theorists looked back at the foundation created by the Tukhachevskiy generation. Experience from the latter half of the Great Patriotic War, when Soviet forces successfully defeated the German war machine, was also an important foundation (Hines, 1988, pp. 55–56). Consequently, during the 1980s, a rich Soviet tradition of military thought, concerned with the operational level of war and conventional operations, had yet again arisen. This tradition will be described in more detail in the following subchapters.

2.2 Fundamental Traits of The Soviet Way of Regular Land Warfare in the 1980s

Soviet military history points to a way of regular land warfare that is deeply preoccupied with solving two fundamental military problems: firstly, how to breach and penetrate a modern defense in depth, and, secondly, how to exploit this penetration by establishing a decisive operational maneuver. Broadly speaking, the solution to these two problems is found in the "characteristics" of the Soviet way of warfare. The previous subchapter showed that many of the characteristics, such as "combined arms", "penetration" and "echelonment", are intimately connected to the Soviet historical experience. However, this subchapter will present a range of fundamental traits that explain the inclusion of other characteristics. These fundamental traits describe the logic behind the unique Soviet approach to perceiving and solving military problems.

The traits are topically divided into five categories. Further, one novel development of that time will be presented at the end of the subchapter: the utilization of long-range precision-strike weaponry. This theme was part of the Soviet military-theoretical discourse in the late 1980s and could point to

prospective developments going into the 1990s and beyond. Consequently, it could have an impact on the Russian way of regular land warfare, including after 2007.

This subchapter, together with the next, will describe a model of the Soviet way of regular land warfare in the 1980s, and later in the monograph, this model will be used to create a contrast against which later Russian behavior can be compared. The model is partly constructed with the aid of comprehensive western literature of the 1980s on this topic, but also of the book *Taktika*. This book was written in the Soviet Union in the early 1980s to "help officers in the process of independent study of tactical art" (Reznichenko et al., 1984, p. 6), and was a renowned piece of literature in its time (Erickson et al., 1986, p. 52). Thus, it is a normative source to guide the practitioners of the Soviet way of regular land warfare on how to best conduct warfare. Consequently, it will not only indicate the practice of the Soviet way of warfare, but also the reasoning behind it.

The geography of the Soviet Union and warfare on a massive scale

The geographical characteristics of Russian and Soviet territory have shaped Russian and Soviet military forces. The European part of the Soviet Union, and its approach to continental Europe, were characterized by large open spaces with little prominent terrain features. Additionally, this area is enormous, with vast plains and little impeding terrain such as mountain ranges and forests (Menning, 1988, pp. 10–11). Thus, the geography of the Soviet Union produces at least two interesting military inferences: the battlefield often lacks "terrain" (hills, woodlands, depressions), and the sheer size of the areas involved is enormous.

The lack of "terrain" creates challenges in protecting the force from enemy fire – the terrain does not provide cover and concealment. Consequently, Russian and Soviet forces have had to rely on other approaches to avoid the effects of firepower. The Soviets' extensive use of camouflage and deception is one such example. Soviet or Russian deception, often referred to as *maskirovka*, is aimed at reducing the enemy's ability to target your forces, either by concealing them in "plain sight", or by presenting false targets (Donnelly, 1988, p. 21). Secondly, because of the open and flat character of Russian geography, the ability to maneuver while exposed to enemy fire is perhaps particularly important. Consequently, to allow exposed maneuver, armor protection and the suppression of the enemy through fire become crucial. In other words, combined arms warfare becomes crucial, and, not surprisingly, is a recurrent characteristic in Soviet and Russian military theory.

Size is another characteristic of the Eurasian plains. Their vastness has required the Soviets to keep large land forces in order to establish an effective defense. Consequently, the emphasis is generally

on higher command levels. The complexity of controlling massive forces induced the creation of the operational level of warfare and operational art in the Soviet military. In 1932, Isserson described the development of warfare as:

> Now, with massive armies and extremely complex equipment, the enormous depth of columns and difficulty in deploying them into combat formation, and rear area complexity and a whole series of complicating factors, the conduct of operations promotes problems, whose solution does not fit into the framework of a given concrete deployment plan, but requires laying a general theoretical base [which is operational art] (Isserson, 1932/1995, p. 52).

The combination of a lack of terrain features and the sheer size of the areas involved meant that there was little to separate the different units and operations from each other; it was one large mass of forces distributed over a large area. Consequently, the Soviet way of regular land warfare had to be focused on higher command levels and the ability to handle great complexity. The size and complexity contributed to the systemic nature of the Soviet way of warfare; the individual soldier and unit was seen merely as a cog in the machinery. This, in turn, induced the centralization of command at the operational level of warfare.

A scientific view of warfare

The Soviet and Communist view of social reality was characterized by the belief that society evolved in a deterministic pattern. This Marxist-Leninist belief in a deterministic social reality, combined with deeper traits of Russian culture, contributed to a fixation on laws and generalizations in warfare. Consequently, in the study of warfare, generalizations were seen as closer to being laws in the eyes of Soviet military professionals than in the eyes of their Western equivalents (see Schneider, 1989; Yüksel, 2023, pp. 7–9). In other words, the Soviet view of combat was more *positivistic* than in the West. For example, when facing a strong anti-tank defense, a Soviet battalion commander would rely heavily on set norms and procedures for deciding on the forces necessary to succeed and the selection of formation, echelonment and fire support for his attack. Fritz Stoeckli pointed out that:

> The *assessment of the enemy* and the comparison with one's own (Soviet) troops (the correlation of forces) is the central part of the analysis. In Soviet tactics this is a *science* and not a matter for guesswork. The Soviet battalion commander must assess the strong and weak features of the enemy's defences, and reach conclusions as to the elements or groupings whose destruction would reduce most efficiently the defender's fighting potential (…) The *correlation of forces* (…) provides an answer as to the volume of forces to be used to

> achieve success. At the tactical level the ratio between attacking tanks and (surviving) ATGW is an essential factor when attacking well-prepared defences (Stoeckli, 1989, pp. 95–96).

As a consequence of the scientific approach to warfare, the study of military history and the conduct of large-scale experimental exercises, from which large amounts of statistical data could be derived, became of utmost importance in unlocking the laws of warfare (See Isby, 1988, pp. 11–12; Scott & Scott, 1988, pp. 130–131; Stoecki, 1988, p. 244). Thus, in such a scientific view on warfare, a detailed prediction of future warfare would be both feasible and desirable. It could be achieved through the study of empirical data from previous conflicts and the combination of this with the technical capabilities of contemporary technology. This was exemplified by the statement of the XXVIIth Congress of the Communist Party of the Soviet Union:

> Finally, as the qualitative gap between the means of waging the last and future wars increases, there is the particularly urgent question of the scientific prediction and forecasting of the nature and methods of conducting armed combat. (…) Prediction is the main goal of any science (quoted in Schneider, 1989, p. 495).

Therefore, if the laws of warfare could be known, it would also be possible to predict the development of a specific engagement and thus devise the troop density and force composition necessary for victory. This led to another major feature of Soviet military theory: the preoccupation with composing the optimal force structure or "order of battle" (Donnelly, 1988, pp. 58, 224–234). Similarly, Soviet tactics in the 1980s were characterized by set procedures, battle drills and statistical aids, such as numerical norms and monographs (Erickson et al., 1986, pp. 143–152). These features underpin the relative importance of generalizations over individual judgement in Soviet military decision-making. As Baxter pointed out: "Commanders, although they have personal responsibility for command decisions, are expected to consider collective wisdom in reaching their decisions". The collective wisdom is "rules, norms, and regulations [that] in part stems from a perception that these represent a distillation of collective wisdom and are presumably arrived at as a result of careful study" (Baxter, 1986, p. 70). This perception of warfare allowed for a very order-based[5] and centralized command style. The optimal solution to a tactical problem was primarily found in this "collective wisdom", and to a lesser degree in the judgement of a single commander.

[5] The term "order-based" is meant to be the opposite of "mission-based" in relation to command styles, and implies that subordinates are given detailed orders, based on comprehensive planning, and are expected to execute these orders as instructed. It corresponds to the German term *Befehlstaktik* (as opposed to *Auftragstaktik*) and the US term "detailed command" (as opposed to "mission command") (Angstrom & Widen, 2015, pp. 64–65).

Overall, the Soviet acceptance of laws of warfare, and thus the possibility of a general theoretical system describing warfare, created an emphasis on the systemic whole rather than the individual soldier, officer or piece of equipment (Schneider, 1989, p. 493). According to Oscar Jonsson, the Soviet view of military theory was more holistic and less analytical-logical than the Western; that is, it was characterized by "the belief that everything is connected in a single synthetic system" (Jonsson, 2019, p. 23). The Soviet method of disseminating missions in relation to terrain is an illustrative example of this systemic approach. Richard Armstrong pointed to the Soviet tradition of giving orders through "directions and lines" and that they were "designed for time and space control of offensive tempo" (Armstrong, 1988, p. 510). Rather than disseminating orders specifically tailored to the terrain and the tactical situation, as would be more appropriate in the Western military tradition, a Soviet commander was expected to choose the main axis of advance and then control his subordinates' use of space and time through these lines and other symbology (see Poirier & Conner, 1989, p. 522). This is illustrated in figure 3. It shows a typical attack by a motor rifle battalion, as depicted in *Taktika*, in which the companies have been given tasks, in the form of lines, corresponding to the rearward extent of the defending unit.

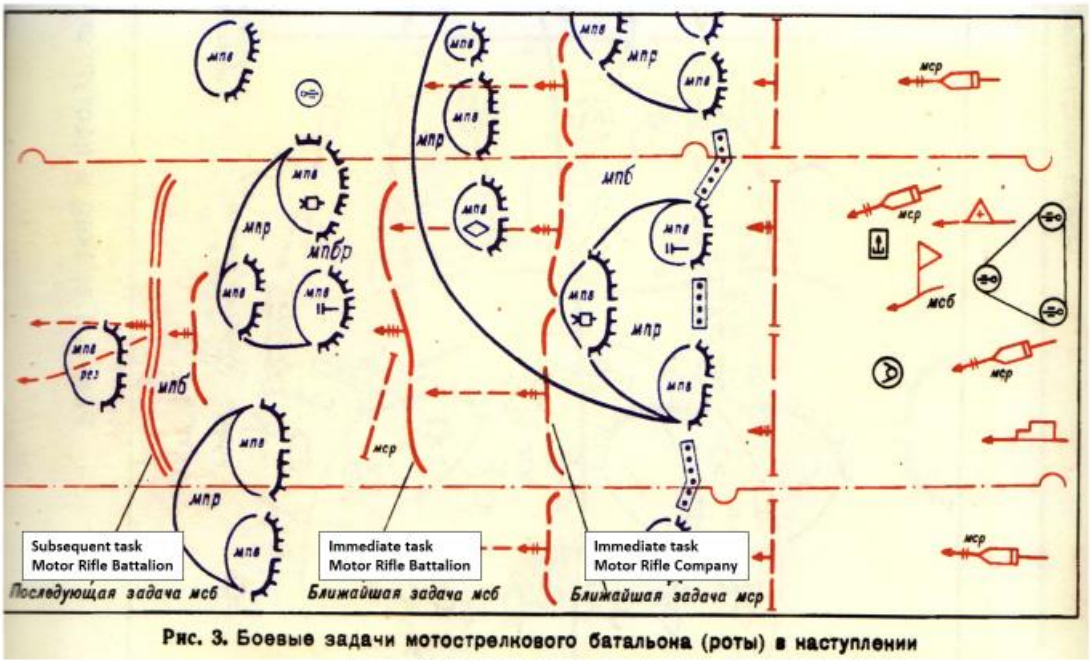

Figure 3 "Combat tasks of a motor rifle battalion (company) on the offensive" (Reznichenko et al., 1984).

In summary, on a fundamental level, the Soviet way of regular land warfare was based on the assumption that warfare was guided by laws: these laws could be put together to create a general theoretical system and thus make prediction viable. This again explains the Soviet preoccupation with drills, procedures and norms at the tactical level. If warfare was predictable, procedures could

be devised beforehand to solve any tactical problem that could emerge. In other words, the best tactic, within certain parameters, could be treated as a template. Additionally, as the lower command levels primarily followed procedures, Soviet forces could increase centralization – flexibility and decentralization of command were not essential at lower command levels. Consequently, the Soviet scientific view of warfare led to an order-based command style, centralization and the use of template tactics – important characteristics of the Soviet way of regular land warfare in the 1980s.

The Soviet scientific and systemic view of warfare had other implications too. As mentioned previously, the perceived ability to predict warfare led to a great emphasis on predicting how future warfare would look and thus being better prepared for potentially future conflict. Jacob W. Kipp argued that:

> The terms, 'future war' [*budushchaya voyna*] and 'initial period of war' [*nachal 'nyy period voyny*] have long pedigrees within Russian/Soviet military science. Both are categories employed by Soviet military analysts when they seek to engage in the difficult process of foreseeing and forecasting the evolving nature of military art in all its interconnected aspects, i. e., strategy, operational art and tactics. Future war has since the 1920s been used by Soviet analysts to address the process of using past experience to define the trends and contradictions reshaping armed conflict and bringing about qualitative shifts in military doctrine. (…) As Colonel General I.E. Shavrov and Colonel Galkin asserted in 1977, '*In its essence, military science is the science of future war*' (Kipp, 1991, p. 624).

According to Kipp, the emphasis on the initial period of war was a logical consequence of the forecasting of future war. It is in the initial period of a conflict, before an actor is able to respond and compensate effectively, that a correct prediction would lead to the greatest advantages. Soviet theorists pointed to the 1941 German invasion to illustrate this point. The faulty Soviet prediction of how and when the war would start led to catastrophic consequences (Kipp, 1991, pp. 624–626). Thus, the initial period of war, as a concept of analysis, was intimately interconnected with the Soviet scientific view of warfare and was a central concept in Soviet military theory.

The balance between mass and technology

Another fundamental trait of Soviet military theory was the view on mass and technology and the relationship between them. The balance between these two contradictory concerns constituted a central problem to Soviet military theorists. In short, the quantity and quality necessary to win a major conventional war was not possible to consistently maintain in peace-time (Yurechko, 1988, p.

233). In general, the Soviets were very preoccupied with technology and how to develop and exploit new technology in their armed forces. After all, the communist ideology was firmly rooted in the belief in progress and the utilization of technology (Scott & Scott, 1988, pp. 132–136). However, on the other hand, the geographical realities of the Soviet Union demanded a substantially large force: the vastness of the country and the length of the border created severe challenges in mounting a defense of the Soviet Union and the Warsaw Pact. Also, the Tukhachevskiy generation did, despite internal disagreements on other fields, agree that modern warfare was characterized by extreme levels of attrition and destructiveness, which in turn demanded the ability to progressively commit fresh forces (Harrison, 2001, pp. 41–42). A modern war, nuclear or conventional, would surely exceed the destructiveness that was expected in the 1920s. These two partially conflicting concerns – to effectively exploit new technology and still retain a sufficiently large force – were sought to be mitigated through several measures. Firstly, a mobilization structure of partly equipped and manned units, the "cadre," was seen as an adequate compromise between a large force equipped with sophisticated and expensive equipment and the necessary mass (Conner & Poirier, 1988, pp. 213–216). Secondly, the Soviet doctrine-centric procurement processes, as opposed to the Western technological-centric approach, avoided excessive levels of "high-tech" equipment. According to Donnelly, the Soviets:

> do not denigrate the importance of technology – quite the contrary. But they eschew technology for technology's sake and the notion (…) that if a weapon is not the latest in sophistication, it is therefore somehow inadequate. The key to their system is this ability to identify the utility of any particular element of technology and to apply it rapidly and efficiently within the framework of doctrine (Donnelly, 1988, p. 123).

Consequently, the Soviet way of regular land warfare put great emphasis on how to retain large quantities of forces, anticipating an enormous scale and high level of attrition in modern warfare, but was still be able to furnish them with equipment of sufficient technological quality. The mobilization-based "cadre" system was a reasonable solution to this problem. However, it entailed some weaknesses. In a situation where this system had to be activated, the use of reservists would mean that the general training level of each servicemember would be low, and that there would be little time for unit-level training. Consequently, the proficiency of the personnel and the cohesion of the units would suffer. In such a situation, the Soviet propensity for an order-based command style and template tactics would be beneficial; in a system of detailed orders and procedures, the demand put on each soldier would be reduced. Still, as Soviet officers were well-educated and usually had lengthy service at each command level, the "cadre" system relied heavily on the competence of the officer

corps. The “soul and backbone” of the Soviet Army was not the NCO, it was the officer (Baxter, 1986, pp. 66–67).

The primacy of the offensive

The third fundamental trait of Soviet military theory was the emphasis on the offensive. As Baxter puts it, “Soviet military doctrine preaches that the offense is the decisive means of military activity” and that “the principal means of warfare are those that favor the offense” (Baxter, 1986, p. 15). This is also clearly stated in *Taktika*: “The offensive is the primary form of combat. It is decisive in defeating the enemy. Only a decisive offensive, carried out with a high tempo and to a great depth, ensures defeat of the enemy” (Reznichenko et al., 1984, p. 44). The emphasis on the offensive was very much rooted in the debate between Svechin and Leon Trotsky on one side, and Tukhachevskiy and Front Commander N. V. Frunze on the other. The former advocated for warfare based on exhausting the enemy and a balanced view on the offense-defense dichotomy; the latter argued for a doctrine based on the destruction of the enemy through offensive warfare based on maneuver. Tukhachevskiy and Frunze, who were able to mobilize more support from the party leadership, came out on top and set the tone for subsequent theoretical debates in the Soviet Union (Hurley, 2015, pp. 53–70). Thus, contrary to an attritional approach, Soviet military theory was fundamentally based on a strategy of the destruction of the enemy force. This in turn, dictated offensive measures. The dictum that only an offensive strategy could be decisive was widely observed in Soviet military theory (Glantz, 1991a, p. 575; Kipp, 1991, p. 639). However, Svechin’s thoughts of an attritional strategy and the utility of the defense gained more momentum in the late 1980s, primarily due to the new strategic approach of “reasonable sufficiency” and the political acceptance of Soviet economic and technological inferiority (Hurley, 2015, pp. 86–88). Still, the conservatism and inertia of an institution such as the Soviet Armed Forces caused the Soviet way of regular land warfare to retain the influence of Frunze and Tukhachevskiy. According to Lester Grau, it should be noted that:

> the Warsaw Pact defensive doctrine proclaimed in May 1987 does not necessarily change the basic objectives of Soviet security policy, nor policy at large. Defensiveness does not imply pacifism. Rather, defensive doctrine is essentially politically motivated and does not alter the basic Soviet faith in the ultimate primacy of offensive operations (Grau, 1990, p. 122).

After all, not only theoretical discourse is considered in the concept of way of warfare, but also practice and behavior (Stoecker, 1991, pp. 27–29).

However, an offensive military approach does not necessarily imply an aggressive political intent, but rather that attack may be the best form of defense. Marxist-Leninist ideology, because of its belief in

the world's deterministic progress towards communism, saw wars to bolster or save communist regimes as defensive despite being waged aggressively. Additionally, in cases where wars had already broken out, there would be no point in refraining from seeking a decisive victory. After all, in the communist world view, all countries are on the path to becoming Communist and there is no point in postponing this inevitable progress – it would in fact be immoral (Donnelly, 1988, p. 62).

Additionally, the Soviets put a lot of emphasis on attaining and retaining the strategic initiative to support offensive operations. A lecture given at the Voroshilov General Staff Academy in the early 1970s stated that a major conventional war between capitalist and socialist nations "will assume a decisive character by virtue of the intensified struggle to seize the strategic initiative, inflict massive losses on the enemy forces, and expand efforts continuously by moving their reserves from the depth" (Turbiville, 1988, p. 45). This emphasis on retaining the strategic initiative and offensive action was also rooted in the Soviets' realization that there was a significant possibility for an initial phase of non-nuclear war between the East and the West. Consequently, there was much to gain in acting decisively in the initial period of the conflict (Turbiville, 1988, pp. 44–45). In addition to the relevance of the characteristics of "the initial period of war", the primacy of offensive action and the importance of retaining the initiative are intimately connected to the concept of *aktivnost'*, as explained further below.

The Soviet conceptual understanding of combat

The Soviet conceptualization of combat is both rigidly structured and differs somewhat from Western understanding. The discussion below will point to two concepts, *udar* and *aktivnost'*, as particularly important in Soviet understanding. However, they are not really established principles, but describe notions that are central in the Soviet understanding of combat, and they elucidate unique characteristics. As such, they are two of the characteristics describing the model of the Soviet way of regular land warfare of the 1980s.

According to *Taktika*, combined arms combat is the primary form of combat and consists of three fundamental concepts: *ogon'* (firepower), *manevr* (maneuver) and *udar* (strike) (Reznichenko et al., 1984, pp. 42–43). These concepts will be explained here in brief and then used in the later analysis. *Ogon'* or *ognevoy moshch'* ("firepower" will be used hereafter) is perhaps the easiest to understand for Western readers. Its meaning is fairly straightforward – it is the fire from all weapons (Reznichenko et al., 1984, p. 42). *Manevr* (maneuver will be used hereafter) is "the organized movement of troops or the redirection of the means of combat (firepower) in the interests of creating favorable conditions for the conduct of military activities" (Reznichenko et al., 1984, p. 43).

As such, similarities aside, it differs from the view of maneuver in the West by its inclusion of the shifting of fire as a form of maneuver.[6]

Udar, on the other hand, is more unique to the Soviet way of warfare. It can broadly be translated as "strike" or "shock action". The concept of *udar* is further divided into three subcategories: *yadernyy udar* (nuclear strike), *ognevoy udar* (conventional fire strike) and *udar voysk* (strike with troops) (Baxter, 1986, p. 111). A Russian encyclopedia entry defines *udar* as a:

> Form of operational (combat) use of [strategic] missile troops, SV, VVS and VMF[7] in operations and in combat. It consists of a short-term [and] powerful destruction of the enemy with nuclear, conventional weapons or the assault of troops (strike with troops) ("Udar," 1986, p. 762).[8]

Similarly, Glantz defines it as: "a short term attack on the enemy with conventional or nuclear forces or weapons" (Glantz, 1991b, p. 43). Thus, the essence of *udar* is that it is a powerful attack, consisting of firepower and/or forces, and conducted over a limited timeframe (see also Baxter, 1986, p. 111). Interestingly, there is a clear psychological and not strictly material dimension, to the intended effect *udar* inflicts on the enemy. Baxter argues that *udar* is meant to administer "the physical and psychological effect of violence on the enemy capability to fight" (Baxter, 1986, p. 111). *Taktika* re-iterates the psychological dimension: it defines one subcategory of *udar*, "*udar voysk*" (strike with troops), as "a combination of fire and the movement of tank and motorized rifle units in order to completely shatter the enemy and seize the designated area (line, objective)" (Reznichenko et al., 1984, p. 43). The Russian word "*razgroma*", used in this definition, is best translated as "shattering" instead of, for example, "defeat", and, as "shattering" implies more than just material destruction, shows the inclusion of the psychological dimension. Baxter points to surprise as another example of the psychological dimension of *udar*: if a strike surprises the enemy, the psychological shattering effect would likely increase and exceed the effect of the purely material destruction (Baxter, 1986, p. 111). In *Taktika*, the use of surprise to enhance *udar* in modern conditions is particularly mentioned: "The use of nuclear weapons, highly effective conventional weapons and highly mobile troops in modern combat has dramatically increased the role and importance of surprise strikes [*udar*]" (Reznichenko et al., 1984, p. 55). Additionally, both Baxter and Naveh see the Soviet emphasis on *udar* as a means of shattering the cohesion of the enemy force. Baxter argues that: "The purpose of

[6] For example the NATO definition of maneuver: "Employment of forces on the battlefield through movement in combination with fire, or fire potential, to achieve a position of advantage in respect of the enemy in order to accomplish the mission" (*AJP-3.2*, 2016, p. LEX-7).
[7] The Soviet Ground Forces, Air force and Navy.
[8] (See Glantz, 1991b, p. 43 for translation of concepts)

[*udar*] is to break apart enemy units so that the attacking forces, in the process of achieving deeper objectives, can isolate small, disorganized enemy groups (…) for later defeat in detail" (Baxter, 1986, p. 111). Naveh sees *udar* as the concept of dealing operational shock to the enemy system through the disruption of the connection between its subcomponents. This is primarily done by strikes into the depth (Naveh, 1997, pp. 211–221). While Naveh perhaps goes too far in viewing *udar* as an abstract and systemic concept; the Soviet emphasis on applying a shattering blow, of a short duration and to the enemy depths, indicates that *udar* is seen as a means of creating a psychological effect on the enemy, beyond direct material destruction.

The intensity of violence prescribed by *udar* points to another similar concept in the Soviet understanding of combat. *Aktivnost'*, which can be translated as "activeness" or perhaps "aggressivity," underscores the Soviet emphasis on putting continuous pressure on the enemy. *Aktivnost'* defines a broader notion in the Soviet way of regular land warfare in the 1980s, and is "ultimately, about seizing of the initiative; about being proactive rather than reactive, and about keeping on the front foot at all times" (Thornton & Miron, 2021, p. 46). Similarly, in Baxter's view, *aktivnost'* implies seizing the initiative in order to sustain pressure on the enemy through continuous and aggressive action (Baxter, 1986, pp. 113–114). In *Taktika*, several of the stated principles for combined arms warfare point to the same notion. One principle states:

> High activeness, determination and relentlessness of combat [is a principle of combined arms warfare]. In order to achieve victory in battle, units must act audaciously, boldly, with initiative, with the utmost perseverance and tenacity, day and night, in any weather, quickly restore combat capability, preempt the enemy's action, disrupt his plans, seize the initiative and firmly hold it (Reznichenko et al., 1984, p. 53).

Another of the principles in *Taktika* states:

> The maneuver of nuclear strikes, forces, means and fire contribute to the achievement of success in modern combat. Units must boldly, resolutely and timely maneuver with forces and means. Skillful use of this principle makes it possible to seize and hold the initiative, disrupt the enemy's plans, successfully fight in changing situations, achieve the objective of the battle in a shorter time and with fewer losses, smash a numerically superior enemy bit by bit (Reznichenko et al., 1984, p. 60).

Trotsky talked about *aktivnost'* as well. He argued that in a war of high mobility, offense and defense are interchangeable; however, the aggressive pursuit of the initiative, or *aktivnost'*, is the key concept for victory (Stoecker, 1991, p. 367).

Aktivnost', the relentless pursuit of the initiative, does also have an influence on other characteristics of the Soviet way of regular land warfare. To uphold relentless pressure on the enemy, echelonment becomes a necessity. Without arranging forces in echelons, their level of activity will need to be cyclically changed to allow for reconditioning and preparations. In the case of a extensively echeloned force, fresh forces will always be ready to replace the worn-out units after their intense and relentless operations (Leites, 1992, p. xvi). Also, *aktivnost'* is related to surprise and the initial period of war. Because the effect of surprise is temporary, *aktivnost'* aids in effectively exploiting the advantage achieved. Thus, according to the Soviets, after surprise is achieved, and similar to the initial period of a conflict, aggressive and relentless offensive operations will wrest the initiative from the enemy (Leites, 1992, pp. 342–348).

Within the concept of *aktivnost'*, retaining the initiative is fundamental; however, it is important to note that the Soviet view of tactical initiative was different from the view in the West. For the Soviets, "initiative" was to execute the mission given with dedication and aggression, not the expansive and creative notion of the Western conceptualization (Baxter, 1986, pp. 113–114). In *Taktika* this is stated clearly:

> From the commanders of all elements, this principle [*aktivnost'*] requires a constant striving for the complete defeat of the enemy. The decision to defeat the enemy must be firm and carried through to the end without hesitation. The commander is obliged to inspire this determination in his subordinates and constantly prepare them for the successful completion of missions, always be ready to take responsibility for the decision made, use all the forces, means and opportunities, as well as the mistakes and blunders of the enemy, to achieve success and completely defeat even a numerically superior enemy (Reznichenko et al., 1984, pp. 53–54).

There is even a principle solely for emphasizing the importance of pursuing the given mission, and not deviating: "Firm and relentless command and control of the troops, steadfastness in achieving the given objectives, fulfilling the decisions made and the tasks assigned" (Reznichenko et al., 1984, p. 68). Thus, the Soviet view of initiative is not only relevant for the characteristic of *aktivnost'*, but also for the order-based command style. Soviet subordinates were not expected to show initiative and find new solutions, but to execute the orders given with the utmost determination and persistence. Consequently, in addition to being a characteristic of the Soviet way of regular land warfare itself, *aktivnost'* also substantiates the characteristics of "echelonment", "surprise", "the initial period of war", and "order-based command".

Precursors for the 1990s and beyond

Not strictly a part of the model of Soviet way of regular land warfare in the 1980s, the developments in Soviet and Russian military theory into the 1990s can still further inform developments from 2007 and onwards. More specifically, observing the vector of military thought and practice from the early 1990s may, or may not, explain the Russian way of regular land warfare after 2007. There was one central trend that seemed to emerge in the 1980s and early 1990s. The emerging technologies that enabled long-range precision-strike conventional weaponry created significant interest in the Soviet military-theoretical discourse in this period. While the potential of these weapons had received much attention earlier in both the East and the West, it was in the late 1980s and 1990s that these weapon systems matured enough to become produced in sufficiently large quantities to induce a revolutionary change in warfare. Soviet concerns about NATO's FOFA (Follow-On Forces Attack) and Air Land Battle approaches in the 1980s were superseded by shock after the 1991 Gulf War (Brisky, 1990, p. 296; Thomas, 1991, p. 595). The US ability to field significant amounts of effective precision-strike weapons was deeply concerning to the Soviets. Thus, by the early 1990s, Soviet military theorists had already been focused on the perceived revolutionary technological development for a considerable amount of time. Some Soviet military theorists (Marshal of the Soviet Union N. V. Ogarkov and Major General V. I. Slipchenko are two prominent examples) envisioned future war to lack traditional frontlines and to be dominated by high-precision weaponry. In relation to what conclusions the Soviets drew after the Gulf War, Glantz argued that:

> For Soviet planners, the most troubling trend was the seeming dominance of the battlefield, if not the theater as a whole, by modern technology in the form of high-precision weapons. Despite the predictable achievement by the allies of total air superiority, the crushing weight of technology seemed to confirm the Soviet's worst fears - that new high-precision weapons (…) dominated in fact, and even changed the course and outcome of the subsequent ground war. These new weapons and, even more important, the systems employed to integrate them and older weapons in combat may, they fear, negate many more traditional measures of military power and have a revolutionary impact on future combined-arms concepts (Glantz, 1991a, p. 563).

Added to that, and with the realization that the use of nuclear weapons would lead to unacceptable destruction of human civilization, the Soviets saw massive use of long-range precision-strike weapons as having a decisive strategic effect and thus becoming an alternative to nuclear weapons. Glantz further described the Soviet answer to the challenge of this prospective technological revolution: he argued that:

> The Soviet solution to the dilemma of countering 1980s high-precision weaponry involved wholesale abandonment of linear concepts of warfare. Soviet military theorists advanced new concepts of non-linear [*ochagovyy*] warfare, characterized by adoption of new echelonment concepts, formation and employment of tailored combined-arms forces down to the lowest tactical levels, increased frequency of independent actions by tactical subunits, and a proliferation of air assault forces at every level of combat (Glantz, 1991a, p. 577).

The Soviets also started to develop their own version of NATO's precision-strike targeting concepts: the "reconnaissance-strike complex" and its derivates (Brisky, 1990, pp. 296, 301). Consequently, at the end of the Cold War, the challenge of the emerging technologies of long-range precision-strike weaponry was at the forefront of Soviet military theory.

Element of analysis	Characteristic	Historical origins	Linked to fundamental traits of Soviet way of warfare
Application of effects	**Centralization**	1. (Inter-war) The insufficiency of *Vernichtungsschlacht* and the need to arrange a set of actions into a coherent whole highlighted the operational level of warfare and led the Soviets to centralize command authority at this level. 2. (World War II) The need to plan, organize and command offensives on a massive scale, involving large mechanized forces and millions of soldiers, increased the centralization of command.	1. (The geography of the Soviet Union) The enormous size of the Soviet Union and Eastern Europe led to the establishment of very large land forces. Consequently, the ability to control such large forces was essential. 2. (A scientific view of warfare) As the Soviets saw combat as largely guided by general laws, command authority could be centralized at higher command levels, and flexibility and decentralization of command became less essential.
	Combined Arms	(Inter-war) To breach the continuous and deep defenses of World War I, there was a need for infantry, artillery, tanks and combat engineers to cooperate. Thus, combined arms were necessary.	(The geography of the Soviet Union) The flat and open terrain of Western Soviet Union necessitated maneuvering while exposed to enemy fire and thus a combined arms approach.
	Udar	---	(Conceptual view of combat) *Udar*, an integral conceptual part of the Soviet view of combat, involves the use of firepower and forces over a short timeframe, to inflict material, but also a "shattering" psychological effect on the enemy.
Conceptual view of space	**Penetration**	(Inter-war) The primary military problem was perceived to be the breach of a modern defensive system and subsequently the establishment of a decisive maneuver. Thus, "penetration", to access the enemy's depth, was a necessary condition for modern offensive operations.	---
	Mechanization and mobility	1. (Inter-war) Exploiting the new technologies of motorization and flight was necessary to develop a breakthrough into an operational decisive maneuver. 2. (Civil War) The extremely low force densities of the Civil War made the ability to maneuver over large distances prominent to Soviet forces. This induced a preoccupation of the means of maneuver and strategic mobility. 3. (Cold War) The destructiveness of nuclear firepower increased the need for protection against its effects, but also made the challenge of creating a breakthrough less prominent. Mechanization increased the ability to bring firepower and protection into fast-paced maneuvers, and thus increased its importance.	---
	Template tactics	---	1. (A scientific view of warfare) The Soviet view of combat as guided by general laws allowed for greater use of norms and procedures. The perceived predictability of combat meant that a tactical problem usually had a template solution. 2. (Mass and technology) The Soviet "cadre" system,

			balancing quality and quantity, benefitted from tactics that were less demanding for the personnel.
	Echelonment	(Inter-war) The success of the "defense-in-depth" of World War I was imitated also in the offense. The arrangement of forces in consecutive lines increased the force concentration per kilometer of frontline, while also reducing the friction and challenges of command and control of extreme force densities.	(Conceptual view of combat) *Aktivnost'*, the relentless pursuit of the initiative required echelonment in order to allow a continuous availability of fresh forces.
Conceptual view of time	**Order-based command**	---	(A scientific view of warfare/Mass and technology) The Soviets saw combat as largely guided by general laws. Thus, for military leaders, the collective wisdom of norms and procedures would be more important in relative terms than individual judgement. Naturally, this demanded less of the individual's judgement, and training could be reduced and more specialized.
	Surprise	1. (Inter-war) With new technology and operational art, developed in the inter-war period, a breakthrough could be achieved quickly enough to avoid being blocked by the enemy's reserves. Thus, surprise became viable again. 2. (World War II) The scale of the *planned* Soviet offensives in World War II made them hard to conceal. Thus, secrecy and deception became crucial to avoid revealing them prematurely.	---
	Initial period of war	(Cold War) On a battlefield fragmented by nuclear weapons, the side that best exploited the initial phase of the war would have a tremendous advantage. Additionally, at the end of the Cold War, a non-nuclear initial phase in a war between NATO and the Warsaw Pact became imaginable. Thus, the initial period following a surprise attack, before the defenders were fully prepared for war, was perceived as the only viable instances in which breakthroughs were possible.	1. (Primacy of the offensive) It was only the offensive that could create decisive outcomes, and the initial period of war, before the defender was fully prepared for war, presented the best opportunity to succeed in seizing the strategic initiative and reaching decisive objectives. 2. (A scientific view of warfare) The Soviets viewed the forecasting and predicting of future war, and thus how they could be won, as both viable and important. Consequently, it was in the initial period of war, before an opponent could adapt, that the Soviet (correct) prediction would have the largest impact.
	Aktivnost'	---	(Conceptual view of combat) *Aktivnost'* defines a broader notion in the Soviet way of warfare. It is about retaining the initiative and putting continuous pressure on the enemy by relentless and aggressive action.

Table 1 Historical origins and fundamental traits of the Soviet way of regular land warfare of the 1980s.

2.3 Specific Indicators of the Soviet Way of Regular Land Warfare in the 1980s

The overall description of the Soviet way of regular land warfare in the 1980s is categorized into "characteristics". As shown in the previous subchapters, these characteristics are derived from Soviet military history and from fundamental traits in Soviet military thinking. This subchapter will operationalize these characteristics into a set of related indicators. Consequently, these indicators form the basis of the analysis of the four cases. It is whether Russian behavior corresponds with the indicators that decides if Russian behavior is comparable, or not, with the Soviet way of regular land warfare in the 1980s. Thus, by analyzing the four cases, it is possible to elucidate the development of the Russian way of regular land warfare from the end of the Cold War until the 2022 full-scale invasion of Ukraine.

The characteristics, with their corresponding indicators, will be described within the three established elements of analysis: the application of effects, the conceptual view of space, and the conceptual view of time. In contrast to the previous subchapter, which justified the selection of characteristics, this subchapter will elaborate on each characteristic and conclude with a set of indicators. An overview of the indicators, and thus the specifics of the model of the Soviet way of regular land warfare in the 1980s, is presented in the table at the end of the subchapter.

The application of effects

Centralization

The Soviet way of regular land warfare in the 1980s was characterized by the centralization of command. First of all, the Soviet view of warfare allowed for high levels of centralization; the Soviet "scientific approach to warfare" – that is, that military problems had a predictable and correct answer – allowed for approaches that extensively exploited centralization and automation. For example, the use of cybernetic approaches[9] to control the logistics and information exchange within large forces, partly by the use of computers, was particularly central to Soviet military thinking in the 1980s (see Gilbert, 1980, p. 19). However, if warfare was seen as extremely unpredictable and fluid, more flexibility and delegation of command authority would be necessary to handle fast and unexpected changes in a situation. In other words, contrary to the logic in the Western "maneuver

[9] Encyclopaedia Britannica defines cybernetics as: "associated with models in which a monitor compares what is happening to a system at various sampling times with some standard of what should be happening, and a controller adjusts the system's behaviour accordingly" ("Cybernetics," n.d.). In a military application of cybernetics, an automated self-regulatory systems approach in the conduct of operations is implied.

warfare" tradition, which emphasized decentralized decision-making in order to allow timely and flexible decisions, Soviet decision-making could be done centrally, based on the norms and procedures developed beforehand through scientific methods.

However, Simpkin argued that Tukhachevskiy, among others, saw the necessity of decentralized command and control in maneuver-centered warfare, such as deep battle, but without addressing the challenge. The gap between the bureaucratic and rigid Soviet leadership culture, and decentralized command and control was too large to be navigated. Simpkin further alludes to the fact that this is an unsolved and enduring paradox in Soviet military theory (see Simpkin, 1987, pp. 71, 77). For example, the Soviet general, I. A. Gerasimov, argued that in modern conditions (late 1970s), "the significance of the initiative has grown immeasurably," and that the commander's creativity is crucial in seizing the initiative. However, he still reserves this need for creativity to *senior* commanders, and further argues that creativity is largely needed to attain offensiveness and rapid decision-making (I. A. Gerasimov, 1979/1982). Thus, he acknowledges the need for flexibility and creativity, but it does not seem that this results in an acknowledgment for de-centralized leadership. In *Taktika*, the emphasis is on firm and continuous control of troops; however, in relation to the pursuit, "a complex and dynamic form of offensive combat" (Reznichenko et al., 1984, p. 128), the handbook opines for a more de-centralized command and control:

> Having discovered the enemy's retreat, the subunits begin pursuit, as a rule, on their own, without waiting for the order of the senior commander. At the same time, the battalion commander organizes additional reconnaissance of the enemy and specifies the tasks for the subunits to conduct pursuit. The battalion commander reports to the regiment commander about the transition to pursuit and informs the neighbors (Reznichenko et al., 1984, p. 128).

Still, while the text gives provisions for acting without orders, it immediately continues to prescribe detailed actions for regaining hierarchical control. Overall, centralization permeated Soviet texts and military culture. In the 1980s, Soviet way of regular land warfare was still heavily centralized and hierarchical.

While the Soviet "scientific view of warfare" allowed a high degree of centralization, other parts of Soviet military culture contributed to centralization as well. For example, in the Soviet Army, support relationships were not used generally, if at all. This was partly a result of the particular Soviet view of command, or more specifically, the concept of *edinonachaliye* (unity of command) (Baxter, 1986, pp. 67–69). In the Soviet Armed Forces, a commander had unrestricted responsibility for his unit and mission, and thus needed to retain full control of all assets necessary to fulfill this responsibility

(Naveh, 1997, pp. 173, 196). Consequently, if a unit, for example an artillery battalion, was designated to provide fire support to a maneuver battalion, it would be fully under the command of that maneuver battalion commander. For example, if a motorized rifle battalion acted independently as an advance guard, it could have the regiment's organic artillery battalion attached. However, in circumstances where the regiment's organic artillery battalion was kept under the regimental command, the subordinate motorized rifle battalions would largely lack artillery support. Specifically, the artillery units at the regimental command level, organic or attached from the division, would be put into a "regiment artillery group" and would conduct fire missions only for the regimental command and not the subordinate units (Erickson et al., 1986, pp. 88–90). Consequently, unless resources were attached to a commander's unit, this commander could not expect support from other units, including the parent unit, to achieve his specific mission. The commander's extreme accountability for his mission, inherent in the concept of *edinonachaliye*, made support between units, included down to subordinate units, less plausible. This increased centralization at higher command levels because of the lack of support down in the chain of command.

Soviet emphasis on centralization was also a result of the primacy of the operational level of warfare. One of the main purposes of Soviet operational art was to establish an operationally decisive maneuver. Marshal of the Soviet Union, N. V. Ogarkov, described deep operations theory, and thus the fundament of Soviet operational art, as:

> [A] form of combat action of operational large formations (…). Its essence consists of simultaneous suppression of the enemy defense by striking its entire depth, and of penetration of its tactical zone along a selected axis with a subsequent rapid exploitation of tactical success into operational success by introducing into the engagement an echelon for developing success (Ogarkov, 1976/1995, p. 191).

While deep operations theory was developed as a suitable solution to the positional deadlock of World War I, it was still the guiding theoretical foundation in the late Cold War period. Ogarkov claimed that "the general principles of this theory have not lost their significance even today" (in 1976) (Ogarkov, 1976/1995, p. 199). Importantly, deep operations theory prescribed a formula for defeating an opponent that demanded centralization of command authority and resources at higher command levels. A planned breach of the enemy defensive system, large enough to facilitate a massive breakthrough, and then the development of this breakthrough into an operational significant maneuver demanded that the top commanders of such an operation had a high degree of control of their forces. If not, the effort would become fragmented and dissipate.

Additionally, as discussed earlier, the sheer size of the Soviet Union demanded massive forces. This fact, combined with the lack of topographic delineations in the typical terrain of the Western Soviet Union, created a situation in which operations naturally became very large. In other words, the uniformity and size of the European part of the Soviet Union and Eastern Europe deprived the battlefield of natural barriers and induced large-scale operations. Thus, this led to the centralization of command authority and resources at higher command levels.

Consequently, Soviet centralization was partly caused by cultural issues and partly by Soviet military theoretical views. Two indicators seemed to characterize this Soviet preference for centralization: firstly, during operations, *there was little support and synchronization between different commanders, even down the chain-of-command*. The Soviet concept of *edinonachaliye* and the "scientific view of warfare" resulted in little flexibility and will to support and cooperate with other units. Secondly, *the needs of the operational level of warfare were ruthlessly prioritized above the needs of the tactical level of warfare*. This was perceived as necessary to be able to achieve the ambitious aims of Soviet operational art.

Combined arms

Artillery has always been an important part of Soviet and Russian warfare. Stalin even called artillery "the God of War" (Isby, 1988, p. 223). This was also the situation in the 1980s. As the Soviets foresaw the prospect of a conventional phase in a war with NATO, at least initially, the need to mass firepower to achieve the initial breach into the enemy defensive system reappeared (Erickson et al., 1986, pp. 31–35). Without nuclear weapons, artillery became simply indispensable. For example, Kerry Hines argued that "from their [the Soviets] tests, exercises, and evaluations of local conflicts Soviet military authorities determined that the ratio of attacking tanks to defending anti-tank weapons must be at least 5:1", underlining the potency of modern firepower and the threat of neutralizing Soviet offensive capabilities (Hines, 1988, p. 63). Further, the Soviets calculated that "a successful armor attack required the neutralization of 50 to 60 per cent of the enemy's fire systems (anti-tank, tanks, and artillery) by the time the attacking force comes within range of those weapons" (Hines, 1988, p. 63). In other words, without nuclear weapons, massed indirect fires were necessary. In fact, Baxter argues that:

> The integration of these diverse capabilities [field artillery, rocket artillery, air support from fixed-wing and rotary-wing] into a unified fire support plan for an operation is a major task for combined arms commanders and is fundamental to the success of the operation (Baxter, 1986, p. 177).

This emphasis on the role of firepower, and the fire support plan, is echoed in *Taktika*: "Practically all weapons of units and subunits are involved in the fire destruction of the enemy, it is therefore planned by the combined arms commander" (Reznichenko et al., 1984, p. 108). However, in contrast to Baxter's list of relevant weapons, *Taktika* specifically includes all types of weapons in relation to conditions in modern warfare (in the 1980s):

> The introduction of new weapons into the [armed] forces has had a significant impact on the content and nature of the fire destruction of the enemy in offensive [operations]. The essence of these changes is that fire destruction is achieved by a coordinated, complex impact on the enemy by many types of weapons - tanks, small arms, air defense systems, as well as artillery fire, air strikes and combat helicopters (Reznichenko et al., 1984, p. 106).

Consequently, in relation to Soviet combined arms warfare in the 1980s, firepower has an exalted position. The "fire destruction of the enemy", conducted with a variety of weapons, was not only seen as an integrated part of combined arms, but combined arms in itself. How this firepower was conceptually applied will be further discussed below in connection with the *udar* characteristic.

The Soviet version of combined arms warfare was in many respects similar to the Western approach; however, there are some notable distinctions. Soviet centralization of command, and the resulting need for complete combined arms structures at nearly all command levels, led to the layered appearance of Soviet fire support. As explained above, the Soviet practice of strict command relationships, contrary to support relationships, and the concept of *edinonachaliye* resulted in the creation of structures that contained the necessary elements to create a complete combined arms units at nearly all command levels, either through organic assets or procedural attachments. (Isby, 1988, pp. 25–27). For example, even at the motorized rifle company level the company commander would possess a limited combined arms unit including infantry, air defense (MANPADS), long range anti-tank missiles, area-effect fire (from automatic grenade launchers or IFV weapons), and often tank support (Isby, 1988, p. 160).

Consequently, an element of fire support would be present at all command levels. Thus, any Soviet combined arms commander would have, at his disposal, directly attached mortars, field artillery, rocket artillery, or ballistic missiles. Interestingly, for fire support platforms to be relevant for different types of command levels they needed to be significantly specialized. For example, the type of self-propelled howitzer usually attached to battalions or regiments (2S1) was amphibious and had a significant ability for direct fire; however, it lacked range and had a relatively small caliber (Isby, 1988, pp. 275–279). This multitude of platforms, differing in capacity and function, created a fire

support system that provided all commanders with access to their own integral heavy firepower, and thus, as a whole, the fire support system became deployed in a layered posture. Additionally, the practice of extensive echelonment, both in offensive and defensive operations, contributed to this layered appearance of deployment. Consequently, the different ranges of Soviet artillery and other means of fire support, combined with their use of echelonment, presented an opponent with increasingly intense fire the closer he was to the frontline (Erickson et al., 1986, pp. 103–107). This layered nature of the Soviet fire support system is an indication of the presence of the distinct Soviet combined arms system.

Secondly, differently from the modern Western approach to combined arms warfare, in which all arms are integrated through the application of creativity and military art in appreciation of the specific situation, the Soviet approach may more correctly be characterized as several systems of arms overlapping and synchronized through procedures, norms and the commander's direction. The Soviet scientific view of warfare led to a systemic view of combined arms warfare. For example, Soviet reconnaissance-strike complexes, which started to appear in the late 1980s, were largely automated: "the goal is to establish an automated link between the reconnaissance and destruction elements channeled through the control element [of the reconnaissance-strike complex]," and "[e]ach RFC [reconnaissance-fire-complex] and RSC [reconnaissance-strike-complex] - a division, army or front could easily have more than one - is tailored to a particular set of targets" (Brisky, 1990, p. 301). Thus, instead of a system that is designed to be responsive and flexible to the commander's judgement, and thus could be detailed integrated with other parts of the combined arms force, the Soviets developed an automatic system. Similarly, when tank units were broken up and distributed among the infantry, the tank commander usually retained command authority over his units. For example, if the motorized rifle regiment's tank battalion was distributed as tank platoons to each of the motorized rifle companies, the tank commanders (tank company and battalion commanders) still commanded the tanks (Isby, 1988, pp. 25–26). In other words, a system of tank support was distributed over the same area in which the motorized rifle company was operating, creating a system-over-system approach to combined arms. The different elements of the combat force, operating in the same area with procedural integration, provided different functions and, as a whole, established a combined arms system.

Finally, electronic warfare is worth mentioning. The Soviets considered NATO forces' reliance on extensive radio communications as one of their main vulnerabilities. This made them place emphasis on capacities in the electromagnetic domain (Isby, 1988, pp. 482–483). In *Taktika*, EW is expressly mentioned. When listing the content of combined arms warfare, it states that:

> The main content of modern combined arms warfare is nuclear strikes (if combat operations are conducted with the use of nuclear weapons), conventional fires, strike [*udar*] and maneuver; electronic suppression of the enemy will become an integral part of the battle, [it will affect] his command and control systems, and weapons (Reznichenko et al., 1984, p. 42).

In fact, Timothy Thomas argued that one Soviet perspective of future war, produced by the events of the 1991 Gulf War, was that "[s]ome systems (especially electronic warfare/EW) that were support branches must now be viewed as combat systems" (Thomas, 1991, p. 602). While it seems that the development of electronic warfare into an independent combat arm was not fully completed in the 1980s, it was increasing in importance and mentioned along with nuclear and conventional fires as important components of combined arms warfare. A particular emphasis on electronic warfare as a constituent part of combined arms is another indicator of the presence of the Soviet way of regular land warfare in the 1980s.

To summarize, the Soviet version of combined arms was not so much the coming together of several arms to cooperate, but the unification of all resources, necessary to accomplish the mission, under a single command. Moreover, *the fire destruction of the enemy, in itself, was seen as an essential part of Soviet combined arms warfare*. The creation of complete combined arms units, even at the lower tactical level, but with little support between units, resulted in *the distinct layered appearance of the fire support system*. On the other hand, the execution of combined arms relied heavily on procedures and norms. This implied that the different elements of the combined arms system, to some extent, acted independently, but the system as a whole achieved combined arms by operating in the same area. This gave Soviet combined arms *a pronounced system-over-system appearance*. Additionally, *electronic warfare* was not fully seen as an independent combat arm in the 1980s but was specifically mentioned as *an important element in combined arms*, juxtaposed with conventional fires.

Udar

The "application of effects" is closely related to the Soviet concept of *udar*; more specifically, *udar* is one approach to utilizing firepower. As mentioned earlier, the definition of *udar* involves the use of fire or troops, over a short timeframe, in order to inflict a shattering blow to the enemy. When using the concept *udar* as an indicator of the Soviet way of regular land warfare in the 1980s, it is not necessarily the strict definition that is used. However, it is assumed that the Soviet concept of *udar* is inclined towards a specific way of applying combat power. The shock effect of *udar*, shattering the enemy's cohesion, is achieved mainly through two elements: firstly, the different attacks on the enemy, constituting the strike, are administered simultaneously or near-simultaneously. Secondly,

the attacks are distributed spatially, and specifically throughout the depth dimension. By affecting the target unit during a short time-period and throughout its depth, its cohesion is disrupted, and it can no longer operate as a functional unit.

This extended understanding of *udar* can also be applied to the operational level of warfare. Simpkin argues that the Soviet way of warfare was characterized by "simultaneity". It was the simultaneous application of maximum force over the whole depth of an operation that would neutralize the enemy (Simpkin, 1987, pp. 33–34). Naveh reinforces this Soviet emphasis on simultaneity in the extended understanding of *udar*, which he describes as "operational shock". In his view, the simultaneous application of effects is one of the elements of creating a shock effect (Naveh, 1997, p. 192). Moreover, when explaining the essence of the theory of deep operations, Isserson stated that:

> It is necessary to organize offensive combat in order to pin down and neutralize the entire tactical defensive depth simultaneously. If simultaneity is not accomplished, new centers of resistance will materialize from the depths to replace neutralized defensive sectors (Isserson, 1936/2013, p. 101).

Observing the Soviet preoccupation with simultaneity and affecting the depth of the enemy, it is no surprise that they were very eager to exploit nuclear weapons for battlefield purposes. Ballistic missiles with nuclear warheads would be able to penetrate the entire depth of the enemy combat system and strike multiple targets with devastating firepower – surely creating a shattering "shock effect" (Scott & Scott, 1988, pp. 147–149; Simpkin, 1984, pp. 143–144). Tellingly, in *Taktika*, there are several references to the important role of nuclear strikes (*yadernyy udar*); however, descriptions of strikes (*udar*) with conventional firepower are more infrequent. Still, *Taktika* emphasized that increased range, accuracy and effect in modern conventional firepower would continue to increase rapidly. Consequently, there was an assumption that strikes (*udar*) with conventional firepower would increase in importance relative to the other types (nuclear and troops) in the 1980s (Reznichenko et al., 1984, pp. 106–117). The emergence of long-range precision-strike weaponry in the 1980s – a very central military theoretical issue into the 1990s – was at the core of this improvement in conventional firepower. Equally to nuclear weapons, precision-strike weapons would be able to simultaneously strike multiple targets throughout the depth of the enemy's defenses. Additionally, precision would be able to mitigate the lack of brute firepower that nuclear weapons provided.

Consequently, the Soviet way of warfare in the 1980s put great emphasis on the simultaneous use of firepower throughout the depth of the enemy combat system, and thus inflicted organization-wide

disruption and collapse. Thus, *the application of effects at multiple targets, in a short timeframe, and, as far as possible, employed into the depth of the defenses for the purpose of shattering the enemy cohesion*, would indicate the presence of the characteristic of *udar*.

The conceptual view of space

Penetration

In Soviet military theory, a fundamental problem was the two-fold challenge of penetrating the opponent's defensive system, and then establishing an operational decisive maneuver into his depth. This was the basis for the deep operations theory and inspired later Soviet military-theoretical developments (Hines, 1988, p. 55). *Taktika* states that:

> During the First World War, positional fronts were formed [and] put before the advancing troops a new problem - the need to overcome a strong, deeply echeloned enemy defense. This was achieved by a breakthrough; that is, by creating a gap in the enemy's defense, initially in a narrow sector of the front, [and] subsequently developed in depth and expanded towards the flanks (Reznichenko et al., 1984, p. 72).

Taktika then states that in modern combined arms warfare (in the 1980s):

> In an offensive [operation], using only conventional weapons, the defeat of the enemy is achieved by consistently defeating his defending subunits of the first and second echelons, and reserves by delivering fire strikes against them, decisively advancing motorized rifle and tank subunits into the depth of defense and capturing tactically advantageous areas (lines) of terrain (Reznichenko et al., 1984, p. 74).

Clearly, both the problem and the solution are recurring themes in Soviet military theory. Thus, *penetration* of a defense in depth is central in the Soviet way of regular land warfare in the 1980s.

The primary means of supporting the penetration was the utilization of *udar*. In the 1980s, the most efficient, and thus the primary, form of *udar* was the nuclear version. However, emerging technologies of long-range precision-strike weaponry had the potential to fundamentally alter modern warfare, and the Soviets saw in these technologies an opportunity to avoid the problem of penetration altogether. If an operationally decisive maneuver could be conducted by the maneuver of high-speed missiles, instead of large mechanized forces, there was no need to create a breach in the defensive system. This was the basis for the "non-contact" warfare; that is, non-contact between large regular land forces. Slipchenko explains:

> The role of the branches of the armed forces will change. Without exception, in all wars of past generations, the bulk of the confrontation fell on the ground forces, since, as already noted, it was they that, in order to achieve victory, had to defeat the enemy's armed forces, destroy his economic potential and overthrow the political system. This could not be achieved without the occupation of enemy territory. In future wars, in most cases, occupation may not be needed at all. It is enough with the help of strategic strike (non-nuclear) forces armed with high-precision weapons to inflict a heavy defeat on its means of retaliation, destroy the most important key military facilities and destroy the entire economy, energy supply and communications system, and the enemy's political system will fall apart on its own (Slipchenko, 1999).

Another Soviet approach to avoiding the problem of a modern defense in depth was to attack before the defender was prepared. A hasty attack before the defender was ready was preferable to a deliberate attack, even when the former involved great risks (Erickson et al., 1986, pp. 80–81).

However, Soviet forces had to be prepared to face the challenge of penetrating a prepared defense in depth without the help of nuclear weapons. It was expected that such a defense was without any vulnerable flanks or gaps, and thus had to be breached by a frontal assault. Consequently, *the prioritization of means and methods that could overcome the challenge of penetrating a modern defense in depth* would be an indication of the characteristic of penetration.

Mechanization and mobility

The second challenge of the fundamental Soviet military-theoretical problem, establishing an operational decisive maneuver, relied heavily on mechanization (the ability to fight from vehicles) and high mobility, provided by motorization and airmobility. Thus, with roots from the Tukhachevskiy generation, the Soviet way of regular land warfare in the 1980s was, in essence, a way of mobile warfare.[10] Consequently, one of the core interests of the Soviet theorists in the 1920s and 1930s was how to utilize new technologies of mechanization and mobility that could increase speed and mobile firepower. They realized that these technologies could enable the maneuver of firepower into the depth of the enemy defensive system and conduct operational level maneuvers (Ogarkov, 1976/1995, p. 191). Consequently, tanks and other armored and armed combat vehicles were crucial to the Soviets – they allowed for the high-speed maneuver of significant firepower. Unsurprisingly, the Soviet Army was almost entirely a mechanized army – large formations of dismounted infantry

[10] The term "mobile warfare" is used instead of "maneuver warfare" to avoid misunderstandings. "Maneuver warfare" can indicate the maneuver warfare tradition, a specific Western approach to land warfare primarily developed in the 1980s.

did not exist (see Dunn, 1979, p. 38; Isby, 1988, pp. 30–42). Further, as mechanization by wheels and tracks was crucial to Soviet military theorists in the 1920s and 1930s, the increased mobility provided by the rotor was equally crucial in the 1980s (J. F. Holcomb, 1989, p. 266). The Soviets were eager to introduce airmobile units to increase the reach and speed of ground forces. Consequently, they were increasingly able to maneuver substantial amounts of firepower into the depth of the enemy defensive system (J. F. Holcomb, 1989, pp. 271–274). As mentioned earlier, the Soviet perception of maneuver as the movement of firepower in itself, and not strictly movement of troops, substantiates the Soviet preoccupation with technology that enabled speed and penetration. In that sense missile and rocket technology was also important in aiding penetration and maneuver.

For the Soviets, modern conditions demanded even higher levels of mechanization and motorization. The devastating effects of nuclear weapons would both fragment the battlefield and expose forces to intense weapon effects. *Taktika* describes modern combined arms warfare as:

> The high maneuverability in modern combat is the result of the use of powerful means of destruction [nuclear], the increase in mobility of combined arms units and formations due to their full motorization and a high degree of mechanization, and also the result of the absence of a continuous front in the defense and offense. (…) In the past, troop maneuver was usually limited to movement in order to take the most advantageous position in relation to the enemy for delivering strikes. At present, it is also used for the timely [exploitation] of the results of nuclear and fire strikes; the rapid transfer of efforts into the depth or to a new direction; overcoming zones of radioactive contamination, rubble, areas of destruction, fires and floods; the withdrawal of troops from enemy nuclear strikes; the replacement of units and subunits that have suffered heavy losses and lost their combat effectiveness (Reznichenko et al., 1984, p. 46).

Consequently, the Soviet view that mechanization was necessary for maneuvering on the modern battlefield, combined with the perception that large land forces were a prerequisite for an effective defense of the Soviet Union, led to an enormous demand for mechanized vehicles and equipment. Thus, while using a large amount of the country's resources on military equipment, Soviet procurement processes had to avoid unnecessary excesses in quality (Donnelly, 1988, p. 123).

Additionally, in order to get these large land forces to be at the right place at the right time, strategic mobility and force readiness were central. For example, Soviet tanks would be light (less than 45 tons) to simplify strategic movement by rail, air or trucks, and they would be better at long-range marches on their own tracks than Western contemporary equivalents. Moreover, all mechanized

combat vehicles were supposed to have water fording capabilities (Donnelly, 1988, pp. 28, 210). In the Soviet Armed Forces, strategic mobility and logistics were supported by specialized troops for building, repairing and maintaining infrastructure. Separate railway, road construction and pipeline troops existed and would support the transfer and supply of the large Soviet land forces (Isby, 1988, pp. 21, 94–95). To move rapidly and deploy large conventional forces over large distances, preferably in secrecy, was also a prerequisite for achieving strategic surprise in a war with NATO.

Consequently, even though mechanization and strategic mobility are important in any modern land forces, there was a particularly strong emphasis on these elements, and thus they were a characteristic, of the Soviet way of regular land warfare. This characteristic is indicated by a *near all-encompassing mechanization of the land forces*, and that *there exist comprehensive measures to assure effective strategic mobility for rapidly concentrating overwhelming combat power and achieving surprise*.

Template tactics

Soviet tactics were characterized by standardization, procedures and norms. That is, the Soviets viewed collective knowledge, obtained through military history, statistics and experimentation, as superior to a single tactical commander's judgement. Consequently, in Soviet ground forces, set combat drills were far more central than in Western armies. Soviet commanders, having assessed the situation at hand, were expected to decide on the appropriate combat drill rather than produce a creative course of action that fully appreciated the current situation: "a Soviet tactical commander does not make a 'plan' for action but a 'decision' (*resheniye*), i.e. his task is to decide between the alternatives which he will have been taught" (Donnelly, 1988, p. 221). Moreover, while the Soviet rigid approach reduced the ability to foster initiative and fully exploit the benefits of terrain, there is no doubt that this type of approach would allow extremely fast decision-making and streamline the execution of operations, reducing the need for time and "staff-power" when preparing for battle.

Additionally, by the 1980s, the immense threat to static and concentrated forces caused by nuclear weapons had increased the importance of achieving a high operational tempo and quickly closing with the enemy. Thus, according to the Soviets, the speed of command needed to be increased (Hemsley, 1980, pp. 58, 63). While decentralized command and control is one method of achieving more rapid decision-making, the Soviets went for another method. Glantz argued that:

> To capitalize fully on the effects of maneuver, the Soviets believed that they had to reduce planning time and execute command and control more precisely. This required increased

> emphasis on the use of cybernetic tools, including automation of command and expanded reliance on tactical and operational calculations (nomograms, etc.) (Glantz, 1991a, p. 578).

This, of course, contributed to a Soviet templatic view of tactics.

Further, Simpkin points to the Soviet lack of terrain exploitation. According to him, the Soviets saw terrain as an "untrustworthy ally," and were more aligned towards using other means for concealment such as smokescreens (Simpkin, 1984, p. 60). Suppressive fire was also an essential part of Soviet tactics. However, while suppressive fire is far from exclusive to Soviet tactics, their inclination for maneuvering while exposed to enemy fire, due to the lack of terrain exploitation, increased the importance of this measure. This is mirrored in the concept of *udar*. In this concept, suppressive fires were not localized and temporary, aimed at enabling a specific maneuver, but rather aimed at shattering the cohesion of a larger unit, enabling a subsequent or simultaneous penetration. Furthermore, to demonstrate the relationship between terrain and tactics, Grau pointed to the Soviet approach of assigning missions to subordinate units. According to him, the common mission would be a line that corresponded to the rearward limit of an enemy unit that was targeted for destruction. Thus, despite the mission being fixed to terrain, its purpose was focused on an enemy unit. Additionally, the mission was not placed geographically because of the advantage of that specific position, but because it defined the location of an enemy unit (Grau, 1990, pp. 127–130). This way of assigning missions strengthens the view that terrain was of less importance in Soviet tactics. Consequently, if terrain is less important, tactical procedures applied to the available battlespace will be more akin to a template.

The Soviets did also procedurally organize units with special roles from the existing force structure. A good example is the formation of what Western literature has translated as "forward detachments" (*peredovoy otryad*). These formations were meant to maneuver in front of the main force and bypass, if possible, enemy opposition to reach important geographical features such as bridges and ports. Forward detachments often did consist of a fairly large part of the parent organization – the divisional forward detachment were often a reinforced regiment – and thus, despite relying on infiltration, were large mechanized maneuver forces (Glantz, 1988). *Taktika* describes forward detachments this way:

> The increased decisiveness and dynamism of modern offensive combat opens up the widest possibilities for employing forward detachments. In addition to capturing individual terrain objects (road junctions, settlements, passes, etc.), forward detachments can perform such complex tasks as destroying nuclear weapons, air defense systems, enemy command posts,

> his rear facilities, combating air (sea) landings and airmobile units. When setting combat missions for the forward detachment, it usually indicates: the composition and direction of actions, which line and when to take possession of it, the procedure for supporting it with artillery fire and air strikes (Reznichenko et al., 1984, p. 102).

Another *ad hoc*, yet procedurally formed, unit was the operational maneuver group (OMG). The tandem of the shock and mobile forces of World War II, the former creating the breakthrough and the latter exploiting it, was exchanged for Field Marshal G. K. Zhukov's streamlined and flexible divisions in the 1960s due to the immense firepower of nuclear weapons (Glantz, 1991b, pp. 32, 178). However, the perception of an increase in the possibility of a non-nuclear war again introduced the need for large, mobile and independent forces to exploit a breakthrough and create an operationally decisive maneuver – an operational maneuver group (Simpkin, 1984, p. 94). The forward detachment and the OMG were examples of large Soviet combat formations that were procedurally task organized. In this way the Soviets were able to relatively quickly, and within the tradition of procedures and norms, establish special purpose units out of the existing force structure.

The Soviets also created "specialized" reserve units, such as the "anti-tank reserve" and the "mobile obstacle detachment", from organic forces. These had a designated role in the system and did not act as completely uncommitted reserves (see Isby, 1988, p. 60). While uncommitted echelons of forces enabled some flexibility, they were not strictly reserves (Baxter, 1986, p. 96). Overall, the use of procedurally formed *ad-hoc* units, in contrast to specifically tailored task forces, and small portions of uncommitted reserves, indicates a belief in the predictability of warfare. Combat was seen as guided by laws and thus could be controlled by procedures and norms.

Consequently, the presence of a Soviet inclination towards template tactics can be indicated by *the procedurally formation of specialized and standardized units from the organic structure*, and t*he extensive use of standardized procedures and norms in tactics, in which terrain has a less prominent role*.

Echelonment

The elaborate and recurring Soviet method of echeloning forces is a fundamental trait of the Soviet way of warfare. This was originally devised as a method of creating overwhelming force concentrations at certain stretches of frontline, and at the same time reducing the attrition and vulnerability of these massed forces. Additionally, to overcome "defense in depth," the perceived effective countermeasure to the breakthrough, Soviet theorists prescribed equally arranging the offensive forces in depth (Kagan, 2002b, pp. 87–88). The arrangement of forces in echelons was

usually conducted in one, two or three echelons, and was one of the decisions a Soviet commander above the company level was expected to take (Baxter, 1986, pp. 94–96). The echelonment of forces is a lasting element of Soviet military theory. In the 1980s, it was the vulnerability of massed forces to nuclear strikes that was, in particular, a major concern. Forces arranged in echelons, which would attack from the march, were supposed to reduce opportunities in both time and space for destruction through nuclear strikes (Erickson et al., 1986, pp. 83–87). This was also important in a conventional war with NATO, as the Soviet forces were expected at any point to transition to the use of battlefield nuclear weapons. Even in a conventional environment, the Soviets feared that the increasingly devastating firepower of modern conventional fires was enough to deny any massive force concentration (Hines, 1988, pp. 56–57). In this way, the echelonment of forces, including the use of airborne forces as a so-called "air echelon," enabled the effects to be distributed within the depth of the enemy system in an expedient way (Glantz, 1988, p. 320). Thus, the Soviet force posture, echeloned in depth, gave the increased appearance of a way of warfare that emphasized layered effects. This reinforces the arrangement of firepower in layers described in the previous subchapter.

In the Soviet way of regular land warfare in the 1980s, the second and subsequent echelons were not reserve forces – they had predetermined missions. In Western military tradition, large reserves, often one-third of the force, enable the flexibility to address unforeseen developments and to exploit success. Conversely, the Soviets usually created a fairly small reserve force – a combined arms force of one-ninth of the total force. The following echelons had their own set of missions and could not count as reserves as in the Western military tradition (Grau, 1990, n. 24). These missions could coincide with the first echelon's mission, which entailed reinforcing or taking over the attack, or could be directed at seizing secondary objectives or defeating bypassed forces (Erickson et al., 1986, p. 61). *Taktika* describes the combat order of a unit in offensive operations this way:

> According to experience from tactical exercises, the battle order of a unit when breaking through the enemy defenses is usually in one or two echelons. The first echelon, as a rule, is created as the strongest and tasked to completely defeat the opposing grouping and develop the offensive. The second echelon is intended to build up strength [for the attack] and develop the successes of the first echelon, to replace first echelon units that have suffered losses, to repel enemy counterattacks, and to conduct offensives in new directions. With a one-echelon formation, a combined-arms reserve is created, which is intended to solve tasks that suddenly arise in the course of the offensive (Reznichenko et al., 1984, p. 100).

Thus, the Soviet way of warfare in the 1980s was characterized by an emphasis on echelonment. More specifically, *the forces were echeloned in consecutive lines, creating considerable depth, both in the offense and defense*. The extensive depth of Soviet force posture was a result of echelonment not only at the tactical, but also at the operational and strategic levels of warfare.

The conceptual view of time

Order-based command

Central to Soviet military theory was the offensive. As John Erickson, Lynn Hansen and William Schneider pointed out: "The Soviets consider the offensive the basic form of combat action, playing a decisive role in achieving victory (…) [and they] recognize defense only as something the enemy does, or as a temporary local measure to prepare a successful offensive" (1986, p. 51). Accordingly, the Soviets saw the rapid accomplishment of the operation's objectives and early resolution of the conflict as an inherent requirement in modern warfare. This points to time, or more specifically to the reduction of the time needed to conduct combat actions, as exceptionally important in the Soviet way of warfare. The emphasis on the time factor is of course not restricted to the Soviet way of warfare; the fundamental logic in the Western "maneuver warfare" tradition is to complete the decision-making process (the OODA-loop) more quickly than the opponent (see Lind, 1985). However, despite the similar aim of time reduction, in the 1980s, the Soviet methods of achieving a higher operational tempo were significantly different from the methods that were preferred in the West.

The approach to command and control reveals several differences between the Soviet way of regular land warfare and Western "maneuver warfare". According to the Soviet scientific view of warfare, as explained earlier, aggregated knowledge from collective experience and theoretical work is superior to any single commander's judgment alone. In other words, the Soviet system of norms and procedures, developed beforehand, would produce better results on the battlefield than the commander's artistic application of judgement. Consequently, in the view of Soviet officers, operational tempo was largely secured through a streamlined and rigid decision-making process (Donnelly, 1988, pp. 224–228). Illustratively, when electronic aids for command and control became more available in the 1980s, the Soviets saw the potential for increasing the speed of their centralized command system rather than the potential for de-centralized leadership (Cimbala, 1991, p. 434). Consequently, in relation to time, the Soviets wanted to reduce the workload, and thus reduce the required time, for the individual commander in his preparations for battle. A Soviet commander at a lower command level was not expected to come up with a comprehensive plan and

extensively apply his individual judgement. Rather, the commander would rely heavily on set procedures and norms because this would increase tempo, but still present viable solutions to specific military problems.

The Soviet order-based form of command and control was created by the Soviet scientific view of warfare. However, Soviet culture, and leadership culture in particular, increased this tendency. The hierarchical and authoritarian Soviet culture led naturally to an order-based military leadership culture (Baxter, 1986, p. 67). Moreover, an order-based command style requires less judgement and initiative beyond the given tasks from military leaders, and thus requires less training and experience. If officers and soldiers are largely expected to execute procedures after receiving explicit orders and not deviating from them, the training can, to a large degree, focus more on these procedures and less on the ability to apply personal judgement to a situation. Consequently, as the sophistication and time spent on training is reduced, the ability to produce mass increases.

To summarize, the Soviet order-based command is characterized by *an emphasis on rapid decision-making, resulting in explicit orders that are expected to be strictly executed*. This is done to enhance the overall speed of military activities, increase centralization and to reduce the burden of command.

Surprise

The military concept of "surprise" is key to understanding the Soviet way of regular land warfare: to the Soviets, surprise was seen as the most important force multiplier. This was true at all levels of warfare – the strategic, operational and tactical (Scott & Scott, 1981, pp. 88–89). *Taktika* states surprise as one of the key principles of combined arms warfare:

> Surprise in combat, [is] accomplishing missions [with] the use of methods that are unexpected for the enemy to create favorable conditions for defeating the enemy in a short time and even with smaller forces and means. *Surprise has long been the most important principle of military art* [emphasis added] (Reznichenko et al., 1984, p. 55).

Even in situations where a surprise attack would forfeit important preparations for combat, the Soviets would choose surprise over preparations (Phillips, 1991, p. 36).

As explained in Subchapter 1.3, surprise consists of two activities: the delay of the enemy's detection of the operation, and the rapid execution of the operation (see Leonhard, 2017, pp. 180–181). A similar view can be found in Soviet understanding. A definition of surprise states that it is achieved by:

> [S]ecrecy and swiftness of action; the use of deception of the opponent and new methods of combat. As a result, the enemy's command and control system is disorganized and favorable conditions are created for victory even over an enemy of superior strength (Tyutyunnikov, 2018a, p. 167).

The Soviets wanted to conduct rapid maneuvers on a grand scale, but this would involve comprehensive preparations and be based on a procedural and predictable approach. Consequently, effective ways to "delay the enemy's detection" were crucial to the Soviets, and Soviet operations would expectedly contain a comprehensive plan for secrecy and deception (*maskirovka*).

For example, when relying on centralized command and set procedures, the point and time of a breakthrough would have to be preplanned and comprehensively prepared because of the magnitude of such a breakthrough in modern high-intensity warfare. Consequently, if the opponent knew the point and time for an attack, his ability to introduce effective countermeasures to the oncoming operation would increase immensely. Accordingly, the Soviets realized that these vulnerabilities had to be mitigated through secrecy and deception (Glantz, 1988, p. 325). Thus, the Soviet emphasis on *maskirovka* was not primarily a result of choice, but of necessity.

Consequently, beyond the emphasis on strict operational security, the Soviets were very interested in developing methods for deception. Kerry Hines argues that:

> [d]espite the high value that they place on natural camouflage and cover, the Soviets recognize that natural features will not always be available (…). Consequently, they also are examining a host of technical countermeasures to protect forces from enemy reconnaissance and weapon guidance systems. These include such measures as 'the employment of smoke screens for screening or blanketing, the deployment of decoy targets as a countermeasure against projectiles fitted with homing heads, and reducing heat signatures against the background of the surrounding terrain' (Hines, 1988, p. 67).

The wide-ranging ability to utilize technical measures for deception purposes was perhaps a distinction from the Western way of warfare. For example, the Soviet capacity to deploy smoke was significant, and not only reserved for blinding weapon systems, but also to conceal large-scale maneuvers (Donnelly, 1988, pp. 42–43; Hines, 1988, p. 68).

Consequently, in the Soviet way of regular land warfare, *surprise is emphasized and prioritized*. Soviet officers would largely forfeit advantages, such as optimal preparations and numerical superiority, to achieve surprise. Additionally, surprise is achieved both through the rapid execution of operations

and *the delaying of the opponent's realization of those operations through extensive secrecy and deception (maskirovka)*.

The initial period of war

The Soviet emphasis on surprise did logically lead to an emphasis on the initial period of a conflict. Particularly in cases where nuclear weapons had been used, the chaos and fragmented state of the battlefield was expected to allow rapid maneuvers and deep penetrations. If nuclear weapons were not used at the outset of the war, the initial period of war was perceived to be the only situation where large-scale and penetrating maneuvers were reasonably conceivable (Erickson et al., 1986, pp. 70, 83). Thus, the party that could best exploit the opportunities in the early stages of a conflict, before the total military potential had been mobilized, could receive significant gains. There was a resurgence of the Soviet preoccupation with the initial period of war in the 1980s. This renewed interest was sparked by both the possibility of an initial non-nuclear phase in a war with the West and the opportunities presented by the "revolution in military affairs" related to emerging information and precision-strike technologies (Phillips, 1991, pp. 30–31).

As a consequence of the perceived importance of the initial period of a conflict, the Soviets put much thought into how to best exploit it. For example, the meeting engagement became more important; that is, how to fight on an open battlefield where units were inadvertently passing each other or initialized contact without any prior preparations (Grau, 1990, p. 129). This expectation of facing meeting engagements rather than deliberate operations, increased the emphasis on rapid decision-making. For example, although not a new feature of the Soviet way of warfare, the ability to attack from the march became crucial (Erickson et al., 1986, pp. 61–62). *Taktika* also emphasizes the prevalence of meeting engagements and the need to enter battle from the march:

> The rapid closing of the opponents, and their entry into battle from the march, is due to the high mobility of the troops. (…) The entry of troops into battle from the march, immediately after closing [with the opponent], is due to the decisiveness of the objectives and tasks, the desire to preempt the enemy, and the dynamism of the battle itself. The deployment of units into battle order is usually carried out from columns on the march. In some cases (…) the troops of one side or both can be deployed into battle formation in advance. However, in this case, they will still enter battle from the march (Reznichenko et al., 1984, p. 153).

In additon, the composition and arrangement of pre-contact formations, from which a procedural development of the situation could be initiated, increased in importance. Usually, a unit on the march would be divided into an "advance guard" (or equivalent), the main force, and rear security. In

this manner, the advance guard would be able to defeat the encountered enemy forces without the main force being committed or even delayed (Erickson et al., 1986, pp. 62–66). In this regard, a Soviet procedural and automatic approach would perhaps prove more responsive than an analytically based approach to command and control. Soviet forces would act automatically if engaged in combat, committing incrementally larger forces as they were needed and became available. Minimal planning would be implemented, reducing tactical efficiency and increasing risks, but also reducing the use of time. If the enemy was defeated, the rest of the unit would continue without delay.

Consequently, the Soviet way of regular land warfare was characterized by *the exploitation of the initial period of war*, in which the defender's fragmented state due to nuclear strikes or lack of preparations presented significant advantages to the most swift and resolute. Effective exploitation was achieved *by rapid decision-making, acceptance of risk, and a high rate of advance*.

Aktivnost'

The characteristic of *aktivnost'* points to a *notion* in the Soviet way of regular land warfare. It emphasizes the relentless and aggressive prosecution of combat, resulting in simultaneously striking the enemy in multiple areas. This approach, the "relentless prosecution of an operation without pause" was supported by the Soviet fast-paced decision-making process and offensive mobile warfare (Erickson et al., 1986, p. 53). Several attacks, simultaneously conducted in different areas, would create confusion and put pressure on the opponent's decision-making process. Consequently, the opponent would lose his ability to respond timely and allow Soviet forces to seize and retain the initiative.

Simultaneity, fundamental to *aktivnost'*, was also fundamental to *udar*. In *udar*, the simultaneous infliction of firepower or forces throughout the depth of the enemy's defensive system created a shock effect. Thus, both concepts emphasized simultaneity and were aimed at shattering the enemy cohesion. In *Taktika*, the relationship between *udar* and *aktivnost'* is demonstrated:

> The most important way to achieve high maneuverability can be attributed to the reliable suppression of the enemy throughout the entire depth of his combat formation with nuclear weapons and conventional fires and the timely and effective use of its results; extensive use of aviation, tactical air landing forces and forward detachments; rapid advance in pre-battle formations and columns without dismounting; conducting maneuver operations along axes; rapid overcoming zones of radioactive contamination, rubble, areas of destruction, fires and floods; forcing water barriers on the move and others (Reznichenko et al., 1984, pp. 62–63).

In other words, the effects of *udar* should be exploited by aggressive and offensive actions, which point to *aktivnost'*. This relentless and aggressive approach would likely be maintained from the initialization of hostilities until the resolution of the war.

While the Soviets still saw a deliberate breakthrough as viable, another form of combat had increased in importance by the 1980s. "Future war, as Soviet planners assess[ed], will be fought in terms of meeting engagements, preemptive maneuvers of forward detachments, and attacks against an enemy in a partially prepared or unprepared defense" (Grau, 1990, p. 129). According to Soviet military scientists, several factors had increased the fluidity of the battlefield. In particular, the enormous destructive power of battlefield nuclear weapons, but also increased lethality and maneuverability of conventional weapons, had increased the potential for gaps and flanks on the modern battlefield. This in turn led opposing forces to maneuver intermingled with each other. For example, not only the initial period of a war, but also breakthroughs locally, presented situations that could produce meeting engagements (Erickson et al., 1986, pp. 70–72). In such an operational environment, the ability to conduct relentless and aggressive maneuvers simultaneously over a wide area increased in importance, accentuating *aktivnost'*.

Consequently, the Soviet way of regular land warfare in the 1980s was characterized by *aktivnost'*. While *aktivnost'* also originates from deeper traits in Russian culture (See Leites, 1992), it is, combined with the concept of *udar*, an approach to achieve penetration and a collapse of an enemy defensive system. The presence of *aktivnost'*, as understood by this thesis, is indicated by an *emphasis on relentless and aggressive operations, simultaneously executed over wide areas*.

Element of analysis	Characteristic	Indicator
Application of effects	**Centralization**	1. There is little support and synchronization between different commanders, even down the chain-of-command. 2. The needs of the operational level of warfare are ruthlessly prioritized above the needs of the tactical level of warfare.
	Combined Arms	1. The fire destruction of the enemy, in itself, was seen as an essential part of Soviet combined arms warfare. 2. A distinct layered appearance of the fire support system. 3. A pronounced system-over-system appearance. 4. Electronic warfare is seen as an important element in combined arms.
	Udar	1. The application of effects at multiple targets, in a short timeframe, and, as far as possible, employed into the depth of the defenses for the purpose of shattering enemy cohesion and ability to resist.
Conceptual view of space	**Penetration**	1. The prioritization of means and methods that could overcome the challenge of penetrating a modern defense in depth
	Mechanization and mobility	1. Near all-encompassing mechanization of land forces. 2. There exist comprehensive measures to assure effective strategic mobility for rapidly concentrating overwhelming combat power and achieving surprise.
	Template tactics	1. The procedurally formation of specialized and standardized units from the organic structure. 2. Extensive use of standardized procedures and norms in tactics, in which terrain has a less prominent role.
	Echelonment	1. The forces are echeloned in consecutive lines, creating considerable depth, both in the offense and defense.
Conceptual view of time	**Order-based command**	1. Rapid decision-making is emphasized resulting in explicit orders that are expected to be strictly executed.
	Surprise	1. Surprise is emphasized and prioritized. 2. The delaying of the opponent's realization of operations through extensive secrecy and deception (*maskirovka*).
	Initial period of war	1. The initial period of war is exploited by rapid decision-making, acceptance of risk, and a high rate of advance.
	Aktivnost'	1. An emphasis on relentless and aggressive operations, simultaneously executed over wide areas

Table 2 Specific indicators of the Soviet way of regular land warfare of the 1980s.

Chapter 3: Analysis of Russian Military Behavior

Having established the Soviet way of regular land warfare of the 1980s, the next chapter will compare this "model" with four cases of Russian military behavior. Consequently, this will show whether the Russian way of regular land warfare has changed from its predecessor, and, in that case, how it has changed. Each of the case study subchapters have a table inserted at the end (Tables 3,4,5 and 7) that presents a summary of how the cases compare to the indicators of the Soviet way of regular land warfare (Table 2).

3.1 The 2008 Russo-Georgian War

Figure 4 Map of Georgia. Borders are approximate. Original map from d-maps (https://d-maps.com).

Background

The war between the Russian Federation and their Ossetian and Abkhazian allies on one side, and the Georgian forces on the other, began in earnest on the night of August 7, 2008. However, this was neither the first war between the belligerents nor the clear beginning of this war. In fact, post-Soviet Georgia have had a long history of malign Russian influence. Georgia left the Soviet Union with unresolved territorial issues remaining. The regions of Adjara, South Ossetia and Abkhazia were all

part of the former Georgian Soviet Republic, but contained separatist movements which, when the Soviet Union collapsed, sought their own independence. Several clashes and wars between the Georgian Central Government and separatist movements occurred up until 2008, most notably in 1991-1993 in South Ossetia and Abkhazia. While the Adjara issue was resolved politically, Georgia eventually lost territorial control of Abkhazia and South Ossetia (Illarinorov, 2009, pp. 51–52, 55). Arguably, the Russian Federation have exploited separatist movements in Georgia to ensure Russian leverage over Georgian central authorities.

The Abkhazian republic, situated in the northwestern corner of Georgia along the Black Sea coast, is the largest of the break-away areas of Georgia, and has *de facto* been outside Georgian territorial control since a brutal war with the Georgian central authorities in 1993-1995. The 1993-1995 War was also subject to Russian military intervention, both through Russian supply of armaments and through direct involvement (Goltz, 2009, pp. 24–27). Later, in 1998 and 2001, Georgian authorities attempted to regain control of Abkhazia with the use of proxy forces. These Georgian attempts failed in both circumstances (Cheterian, 2009, p. 158). Consequently, in 2008, Abkhazia was securely under the influence of the Kremlin, and a diplomatic route to re-join the republic with Georgia was hard to discern (Smith, 2009, pp. 140–142).

Similarly, South Ossetia sought independence immediately after the break-up of the Soviet Union. Despite the fact that South Ossetia was smaller, and "merely" an autonomous district instead of a republic, the Ossetians aimed at secession from Georgia proper. Ethnic Georgians viewed Ossetians, in contrast to their view of Abkhazians, as a "new" ethnic group in the Caucasus. The Abkhazians had a more legitimate claim in the eyes of the Georgians. Thus, after the Ossetian declaration of independence in 1990, South Ossetia was promptly attacked by Georgian forces (Goltz, 2009, pp. 17–18). The fighting lasted until 1992 when a peace-agreement was signed, a period the outgunned South Ossetians could not have survived without Russian military aid (Independent International Fact-Finding Mission, 2009, pp. 12–13).

Consequently, in August 2008, only one out of three separatist regions were under Georgian territorial control. Additionally, the lack of territorial control was, to a large degree, formalized through several diplomatic arrangements: in other words, it was "frozen in place". In South Ossetia, a cease-fire agreement was implemented in 1992. The agreement established the Joint Control Commission (JCC), consisting of four partners: Russia, North Ossetia, South Ossetia and Georgia. Additionally, on the ground in South Ossetia, joint Russian-Ossetian-Georgian peacekeeping units were patrolling in accordance with the agreement (Gordadze, 2009, p. 31). Clearly, the agreement was set up to put Georgia in a lesser position. Similarly, in Abkhazia, the so-called "1994 Moscow

Agreement" stipulated a cease-fire agreement, observed by the UN and upheld by a Russian peacekeeping force (Gordadze, 2009, p. 35). These arrangements, very unfavorable to Georgia, were starting to be challenged by Georgian authorities in the lead-up to the 2008 war. These efforts included a Georgian declaration that the JCC was outdated and needed to be re-negotiated and an offer to Abkhazian authorities of a peace-agreement that ensured a large degree of autonomy for Abkhazia (Popjanevski, 2009, p. 144). Russian responses were far from positive to the Georgian challenges, and this increased the tension between Russia and Georgia.

Descriptions of the lead-up to the war have been conflicting. From one side, the Russian attack is described as a reaction to a Georgian military attack on Tskhinvali (see Barabanov et al., 2010; Richter, 2009), and from the other the Georgian military build-up towards South Ossetia is seen as merely an effort to thwart the pre-planned Russian attack (Cornell & Starr, 2009; Malek, 2009). The EU "Fact-Finding Mission", dispatched to Georgia after the hostilities, stated that all parties to the conflict had some responsibility (Independent International Fact-Finding Mission, 2009, p. 32). However, there was no question about the presence of significant Georgian forces around South Ossetia on the night of August 7, but their objective is more difficult to discern (Cheterian, 2009, p. 155). Either they were there to seize Tskhinvali and South Ossetia and create a *fait accompli* before Russian forces could react, or they tried to fight themselves through Russian peacekeepers and Ossetian forces to reach the Roki Tunnel, the only direct entrance from Russia to South Ossetia through the Caucasian mountains. In any case, within the scope of this thesis, it is difficult to conclude decisively on this question. However, it is quite clear that Russian forces were well prepared for military action against Georgia, regardless of whether the operation was a reaction to a Georgian military offensive, or not. The Russian preparations for the war included an increase of the peacekeeping contingent in Abkhazia, Russian railway troops repairing a railway in Abkhazia which would be later used in the invasion, an influx of volunteers into South Ossetia from Russia, and a military exercise, "*Kavkaz*-2008", conducted in Northern Caucasus just prior to the invasion, involving much the same forces as participated in the invasion (Malek, 2009, pp. 228–230).

Similarly, the exact timing of the start of hostilities is somewhat hard to determine. Over the spring and summer of 2008, Abkhazia and South Ossetia saw airspace intrusions by both manned and unmanned aircraft, downing of several unmanned aircraft, explosions on both sides of the cease-fire line in Abkhazia, and armed clashes in South Ossetia, including the use of mortars and artillery (Independent International Fact-Finding Mission, 2009, pp. 18–19). However, during the night of August 7, substantial shelling of Tskhinvali by Georgian forces marked a significant increase of hostilities. The morning afterwards, Georgian forces assaulted Tskhinvali, and regular Russian forces

began to flow through the Roki Tunnel. While clashes between Russian and Georgian forces had occurred already on August 8 in South Ossetia, combined Russian-Abkhazian forces did not begin attacking the Kodori Gorge in Abkhazia until August 9 (Karagiannis, 2014, p. 404). However, according to most accounts, the war started during the night between August 7 and 8.

Throughout August 8, despite receiving Georgian artillery fire on the way from the Roki Tunnel, Russian forces steadily increased in strength in the combat zone around Tskhinvali. When regular Russian forces arrived at the town, the Georgian forces were already in combat with Ossetian militia and Russian peacekeepers in and around Tskhinvali (Felgenhauer, 2009, pp. 168–170). In Abkhazia, Russian and Abkhazian forces entered the Kodori Gorge, which was Georgian-controlled territory, on the morning of August 9. Subsequently, on August 10, Russian VDV-forces crossed the cease-fire line, and entered the Georgian-controlled Zugdidi District (Lavrov, 2010, pp. 65, 68–69).

It was a substantial force that attacked Georgia. The bulk of the Russian ground forces came from the 58th Combined Arms Army of the Northern Caucasus Military District, but also from the VDV, GRU and Black Sea Fleet. In the South Ossetian direction, the invasion force included three tactical groups (between battalion and regiment in size) from the 19th Motor Rifle Division and two tactical groups from the 42nd Motor Rifle Division. Additionally, a few tactical groups from the 76th and 98th Airborne Divisions, several "*spetsnaz*" units, a variety of combat support units, and elements from the Chechen *Zapad* and *Vostok* battalions also participated. The main invasion force in South Ossetia allegedly totaled 10,000 Russian soldiers and 120 tanks on August 10 (Barabanov, 2008, p. 10). In the Abkhazian direction, tactical groups from the 20th Motor Rifle Division, 7th and 76th Airborne Division and the 810th Naval Infantry Brigade participated. The number of Russian soldiers, attacking through Abkhazia, was reportedly 9,000 (Barabanov, 2008, p. 10; Tsyganok, 2011, p. 153). In addition to the Russian forces, the Abkhazian and South Ossetian armies numbered 5,000 and 2,500 soldiers respectively (Tsyganok, 2011, p. 158). However, while the strength of the opposing sides is unclear, there was a clear Russian superiority in numbers. Nevertheless, in the initial period of the conflict, the superiority was not overwhelming – less than twice the number of Georgian forces (Nicoll, 2008). Thus, it cannot exclusively explain the Russian victory.

From August 9, the Georgian military leadership already viewed the situation as close to hopeless. From then on, the Georgian forces were in continuous retreat. On August 11, Georgian forces left the city of Gori, just north of South Ossetia, and on August 12 they tried to establish a last stand at Mtskheta, the gateway town to Tbilisi (Felgenhauer, 2009, pp. 174–175). In the east, Russian forces stopped their advance in Gori; however, they continued their advance in the west of the country. Several Russian formations rapidly advanced southwards along the Black Sea coast, seizing Zugdidi

on August 11, and reaching Poti on August 12 (Lavrov, 2010, pp. 72–74). While a cease-fire was brokered by the French president, Nicolas Sarkozy, on August 12, the Russian Federation demanded that the agreement allow for "security sweeps", used as a pretext to continue offensive operations up until August 18 (Cheterian, 2009, pp. 155–156; Lavrov, 2010, pp. 74–75).

While Russian forces eventually withdrew from Georgian territory outside Abkhazia and South Ossetia, Russian control over Georgia was effectively maintained. Russian forces could at any time launch a new assault from South Ossetia and Abkhazia, acting as large bridgeheads south of the Caucasian mountain range, and immediately threaten Tbilisi. Additionally, as Georgia is largely cut into two parts when it comes to infrastructure, a Russian attack from South Ossetia would effectively cut the country in two by seizing the Tbilisi-Zugdidi Highway (*Respondent 49, Interview 1*, personal communication, 2022, p. 6).

Russian military behavior in the 2008 Russo-Georgian War has been described as predominantly Soviet, which would bring it close to the Soviet way of regular land warfare (Pallin & Westerlund, 2009, p. 28). However, there were several elements, such as the use of battalion tactical groups, which showed some progression away from the traditional approach. Additionally, some Soviet characteristics were lacking, perhaps most notably "echelonment". However, the Russian forces invading Georgia in 2008, showed several weaknesses. In addition to the weaknesses that will be described below, there was also a general lack of sufficiently trained service personnel and adequate equipment. Even in comparison with Soviet standards, the Russian level of competency in 2008 might be described as sub-par. A wide range of insufficiencies, from the low number of annual flight hours of Russian pilots to the deteriorated technical state of Russian armored vehicles, reduced Russian combat effectiveness and required force superiority in order to produce military success (Bukkvoll, 2009, p. 59; McDermott, 2009a, pp. 71–72). These insufficiencies were largely used as pretexts for jump-starting much-needed military reforms after the war (McDermott, 2009b, p. 486).

The application of effects

As the regular Russian forces arrived in South Ossetia and entered into combat, artillery was immediately deployed and began to shell Georgian forces. While there was widespread use of indirect fires during the war, there were fewer direct fire encounters. Thus, despite Russian artillery being used with good effect, more often than not it was used without the need for coordination with ground maneuvers (Bukkvoll, 2009, p. 58). The Russian fast-paced tactics, in which Russian columns "made no attempt to stop, establish support by fire positions, and maneuver to the flanks of the Georgian units they encountered," made detailed coordination between indirect fire and maneuver

less relevant (A. Cohen & Hamilton, 2011, p. 28). However, as several analysts have pointed out, it was the sum of heavy air support and artillery fire, combined with overwhelming Russian forces maneuvering at high speed, that created the shock effect which caused the Georgian forces to crumble (A. Cohen & Hamilton, 2011, p. 29; Lavrov, 2010, p. 54; McDermott, 2009a, p. 66). For example, on August 8, while the Georgian 4th Infantry Brigade's 42nd Light Infantry Battalion was in combat with South Ossetian militia in Tskhinvali, they lost three T-72 tanks and "almost simultaneously with the destruction of the three Georgian tanks, a pair of Russian Su-25 raided the positions (…). More than 20 Georgian soldiers were killed and several dozens injured. The Battalion fled in panic" (Lavrov, 2010, p. 54). This shows the aggregate effect of combat and firepower, creating a cognitive shock effect, which is central to the Russian concept of *udar*. It also shows a combined arms system that was not tightly coordinated, but still effective. While the reasons for the lack of coordination were diverse, they exemplify the "system-over-system" approach to combined arms integration.

Still, despite the effectiveness of the Russian combination of air support, artillery and overwhelming concentration of maneuver forces, the Russian forces overall struggled to establish efficient communications. The ability to communicate to some extent is a fundamental prerequisite to conducting combined arms warfare. Similarly, effective joint warfare also depends on inter-service communications. According to several analysts, one of the root causes of the underperformance of the Russian forces was the lack of proper communications. This applied from the strategic level down to lowest tactical levels. For example, according to some reports, the coordination between the Russian ground and air forces was done at the highest level; more specifically, inter-service coordination was conducted by a cell phone in the office of Colonel General Aleksandr Zelin, the Air Force Chief (Pallin & Westerlund, 2009, p. 407). Consequently, according to this reporting, air and ground coordination was strictly carried out by time synchronization of activities (A. Cohen & Hamilton, 2011, p. 35). According to another source, initially, there were no forward air controllers or personnel with appropriate radios present within the Russian ground forces in South Ossetia, making them unable to conduct detailed air-ground coordination at the tactical level (Pallin & Westerlund, 2009, p. 408; Petrov, 2008). This had severe consequences:

> During the first day there was no advantage for the aviation [because] there were no aircraft controllers in the troops, which allowed the Georgian MLRS and artillery to fire freely on Tskhinvali for 14 hours. The reason is that the operational groups of the Air Force did not allocate 2-3 people to the combined arms units in a parallel deployment at their headquarters, and therefore there was no real forward air control (Tsyganok, 2011, p. 161).

Even at the tactical level, within the Russian Ground Forces, a lack of sufficient communications caused severe difficulties. A well-known example is the incident in which the commander of the 58th Army, Lieutenant General A. N. Khrulëv, allegedly had to borrow a satellite phone from one of the embedded journalists in his headquarters (Baranets, 2008). Similarly, Russian forces had to rely on cell phones to a large extent. This was both due the lack of proper communications and the mountainous conditions of Georgia; in particular, communications across the Caucasian Mountain Range were difficult. The need to use Georgian cell phone networks made the reliance on cell phones, and not secure military communications, additionally hazardous (Lavrov, 2010, p. 167).

Beyond communications there were other components missing from the Russian combined arms warfare system. Electronic warfare was not implemented into the Russian campaign in any competent way (A. Cohen & Hamilton, 2011, p. 34; Pallin & Westerlund, 2009, p. 408). While there are some reports of Russian successful jamming of Georgian communications these could simply be the result of Georgian incompetency at handling US communications equipment. A Georgian officer argued: "There are reports that Russians were successfully jamming Georgian Communications (Harris Radios). [However, this] subject is debatable. [It is more likely] Georgians were not properly utilizing radios and this was causing malfunctions" (*Respondent 61, Interview 5*, personal communication, 2022). On the other hand, it is argued that the Georgians successfully disrupted Russian communications, adding to the already low connectivity of the Russian forces mentioned above (Pallin & Westerlund, 2009, p. 407; Tsyganok, 2011, p. 143). It seems that Russian electronic warfare only had a marginal role in this war – both belligerents' lack of competency was the main reason for all the challenges in achieving sufficient connectivity during the fighting. This is in stark contrast to what could be expected from the central role of electronic warfare in the Soviet way of regular land warfare of the 1980s.

Another area largely lacking from the Russian combined arms system was "reconnaissance". While some of the Russian underperformance in the 2008 Russo-Georgian War was due to trade-offs, such as the rate of advance versus the avoidance of ambushes, the extensive Russian lack of reconnaissance is no such trade-off. The traditional Russian approach to offensive operations, emphasizing a high rate of advance, does not allow for a great deal of scouting ahead of the main force beyond using vanguards; the speed of the maneuver and short time for preparations makes this difficult. In this way, the maneuver, by itself, is the primary means of unlocking the opponent's disposition and strengths at the tactical level of warfare. Other deficiencies included the lack of satellite intelligence, UAVs, and night-vision equipment. The lack of sufficient reconnaissance, combined with the above-mentioned lack of connectivity within the Russian forces, was detrimental

to the Russian commanders' situational awareness (Pallin & Westerlund, 2009, pp. 411–412). A veteran from the Russo-Georgian War pointed to another contributing factor. He argued that:

> When it goes down to the military intelligence (…) and reconnaissance gathering they [the Russians] don't have the capabilities (…). So now in a western battalion structure, the battalion has an intelligence officer. These guys are really one of the decision makers in a battalion. (…) And we in Georgia implemented the same system. Now in a Russian battalion, there is no place for an intelligence officer. No one is particularly responsible for intelligence or reconnaissance. They have only a [reconnaissance] platoon commander and a platoon commander have already much headaches so he has no time to plan at this [battalion] level. You need someone to plan. A battalion is already a bigger organization, so [someone should] plan for intelligence gathering, reconnaissance gathering, and combat intelligence (*Respondent 61, Interview 1*, personal communication, 2022, p. 7).

Consequently, due to the lack of proper reconnaissance, Russian tactics, as shown in the 2008 war, became predictable and unresponsive; however, if a defender is not prepared, the speed and shock of Russian operations might cause the defender to collapse quickly.

There seems to be two elements of combined arms that were introduced in the 2008 war: the "reconnaissance-strike complex" and the "battalion tactical group". However, these elements were far from novel and were still in a nascent form. The use of long-range precision-strike missiles in a reconnaissance-strike complex is worth mentioning. Interestingly, aircraft from the air force were not extensively used in this role: the lack of suppression of enemy air defense (SEAD), and the poor planning and integration of the air force into the overall operation, reduced this opportunity. Additionally, the lack of night-fighting capabilities, precision-strike weapons, and access to a satellite navigation system[11] made a large air campaign, similar to NATO's air campaigns in Iraq and Yugoslavia, unattainable (McDermott, 2009a, pp. 70, 72). An example of the poor performance of the Russian Air Force is the fact that Russian aircraft bombed previously Soviet air bases in Vaziani and Kopitnari, which were not in use by the Georgian Air Force, but did not bomb Georgian air bases that were in use (A. Cohen & Hamilton, 2011, p. 38). This poor performance implies that Russian forces were using old Soviet maps and did not have access to updated intelligence, which is an obvious prerequisite for an effective reconnaissance-strike complex. Additionally, beyond the combat zone, it seems that Russian forces were limited to only striking permanently static targets. A Georgian officer

[11] GLONASS was not yet operational and US authorities had turned off GPS signals in Georgia (McDermott, 2009a, p. 70).

who participated in the war claimed that no mobile targets, such as headquarters and reserve formations, were struck. He lists the following Georgian targets hit by Russian air and missile strikes:

> Significant targets include: Poti Port, Senaki Airbase, Senaki Military Base, Radars located in West Georgia, Logistics facilities in Adjara, City of Gori, Training Center in Gori, Marneuli Airfield, Tbilisi Former Factory 31 Airfield, Vaziani Airfield, [and the] Former Shiraki Airfield (*Respondent 61, Interview 5*, personal communication, 2022).

While the *Iskandr-M* short-range ballistic missile, recently fielded at the time of the war, was only used in limited numbers, it was highly praised and might have been a better candidate for constituting an effective reconnaissance-strike complex than aircraft (Nicoll, 2008). It seems that only two *Iskandr-M* missiles were used in the war; however, as many as 23 confirmed launches of *Tochka-U*, an older tactical ballistic missile, were confirmed by the Georgian side, and show the use of a substantial number of these weapons (*Respondent 61, Interview 5*, personal communication, 2022). This emphasis on the use of ballistic missiles implies that the Russians saw a future reconnaissance-strike complex to be heavily reliant on ballistic missiles for the "strike" portion of the "complex". However, another important part of a functioning reconnaissance-strike complex, or any targeting system at all, is the ability to detect and track targets, and derive targeting data. In other words, the "reconnaissance" part is needed for the "complex" to work. In the 2008 Russo-Georgian War the lack of key modern equipment to fulfill the reconnaissance function, seems to be a significant deficiency in the Russian operation. The lack of modern UAVs, counterbattery radars, and reconnaissance aircraft are particularly mentioned (McDermott, 2009a, p. 72; Pallin & Westerlund, 2009, p. 411).

The Russian forces that were deployed to Georgia were, to a large extent, battalion-sized task forces. In the Russian Armed Forces, reforms to change the previous regiment-division-army-army group structure to a more streamlined brigade-army-military district structure were well underway before the 2008 Russo-Georgian War. In fact, at the time of the war, the North Caucasus Military District had "made the most progress in switching to the brigade structure" (Lavrov, 2010, p. 40). This brigade structure put more emphasis on combat readiness, and, as a compromise between readiness and mass, deployed battalion-sized task forces, generated from brigades and regiments. For example: "Many of the formations stationed in the region maintained permanent combat-ready status. Each of the combat-ready regiments was capable of fielding a combat-ready battalion-sized tactical group (…) within 24 hours" (Lavrov, 2010, p. 40). Similarly, the airborne forces, deployed into the war, were reportedly deployed as battalion-sized units (Lavrov, 2010, pp. 41, 58). Despite the battalion-sized task forces being created out of necessity, this could have been a fortunate "disadvantage". One analyst argues that:

> The Russian generals were forced to commit forces to the battle in parts (…). The reliance on troop maneuver groups (MMG) consisting of motorized rifle battalions, reinforced with tanks and self-propelled artillery and possessing great autonomy in combat operations, fully justified itself. Formed even before the troops entered into the conflict zone, (…) they were able to make a dash across the Caucasus Mountain Range, quickly enter the battle and turn the tide from the first hours. In fact, in the first five hours of the battle, only three MMGs, which approached Tskhinvali from different directions, blocked the Georgian attack on the city and absorbed the strikes of the Georgian reserves (…) With their active actions, the MMGs (…) allowed the main force of the 58th Army to deploy in this area by the morning of the second day and start defeating the Georgian group of forces (Tsyganok, 2011, pp. 156–157).

However, it is debatable how combat-ready these battalions were. In many circumstances the better trained VDV-forces were used in front of the columns, effectively screening the regular motorized rifle units from the brunt of the fighting. One Russian journalist compared the use of airborne forces in the mechanized infantry role to "hammer nails with microscopes" (Khramchikhin, 2008).

It is as difficult to find examples of regiments or larger formations fighting coherently as it is to find independently operating companies. Consequently, it seems that the primary combined arms land unit in the Russian Armed Forces in the 2008 war was the battalion. This is in contrast to the Soviet tradition in which the regiment were seen as the lowest echelon in which most combat and combat support arms were present under a single commander.[12] This development is seconded by Glantz, who stated that "the Russian Army's extensive employment of battalion tactical groups to conduct tactical maneuver on a battlefield increasingly dominated by new precision-guided weapons and munitions (PGM), [is] a theme that has dominated Soviet and Russian military thought since the 1980s" (Glantz, 2009, p. 6).

While there are many aspects of the Russian invasion of Georgia in 2008 that were either missing or performed poorly, the Russian operation succeeded. This was largely caused by the routing of Georgian forces. The overwhelming and fast-developing strategic operation caused the Georgian defenders to collapse. While Russian military superiority might have predetermined the outcome, the Georgian side had the military capabilities to present much stiffer resistance to the Russian attack. Consequently, something beyond the balance of military power must provide a key to

[12] The regiment was the smallest unit that could conduct independent missions, be administratively self-sufficient and in which the commander was allowed some freedom of action in the execution of his missions. Units with this level of autonomy are labelled *chast'* (unit) in Soviet and Russian military terminology (Veremeyev, 1985; Donnelly, 1988, p. 216).

understanding. The Russian concept of *udar* is crucial to the comprehension of the outcome of the Russian operation in August 2008. The use of superior force concentrations and the massing of firepower over a short timeframe, central to the concept of *udar*, created a collapse in the Georgian forces and were important for the Russian victory. Additionally, this approach points to the centralization of the Russian forces. Causing operational shock to the Georgian forces was ruthlessly prioritized over tactical performance, thus prioritizing the operational level of war over the tactical. One veteran from the war argued that:

> Well in 2008 to be honest we had the weakest enemy in tactical terms (…) than we ever had or will ever have. I mean if you take the Soviet and Russian manuals on warfare, they fought like the first two pages of it. Literally the first two pages (*Respondent 49, Interview 1*, personal communication, 2022, p. 1).

In other words, it was the initial volume and speed of the Russian ground assault and air strikes that caused the collapse of the Georgian Armed Forces, not a superior Russian force in tactical terms.

The conceptual view of space

The operational goal of creating a collapse in the Georgian forces demanded penetration. Firstly, the Roki Tunnel needed to be forced, and secondly the Russian forces needed access to the interior of Georgia. If Russian forces had been slower, the terrain of Georgia would have presented many opportunities for effective defensive operations. Consequently, to achieve the necessary penetration, the Russian forces were reliant on a high rate of advance. In order to support this rapid advance, Russian forces emphasized simplistic mechanized tactics and high strategic mobility.

The Russian ground forces used what one author has described as "Soviet tactics": they were "moving in column formation, fighting from the lead elements, (…) [and] [t]hey generally made no attempt to stop, establish support by fire positions, and maneuver to the flanks of the Georgian units they encountered" (A. Cohen & Hamilton, 2011, p. 28). An encounter, perhaps typical for the Russian contact behavior, was described as:

> A convoy of the 693rd Motorized Rifle Regiment which followed the van took the road via the Georgian village of Zemo-Khviti. At 1430 it was ambushed in the center of the village by a small Georgian force (…) The Russian force lost one T-72 tank (…), and two BMP-2 infantry fighting vehicles (…). The Russian convoy got separated into two parts. The head of the convoy, which included the tank company and the motorized rifle company, had already passed the village and continued onwards. The rest of the convoy halted and began

> surrounding the village. In coordination with special task forces (…) they conducted a clean-up operation in Zemo-Khviti and the surrounding villages (Lavrov, 2010, p. 70).

The reluctance to clear built-up areas, and other easily defendable terrain, before driving through them, mounted and in column formation, shows the Russian emphasis on mechanization and simplistic, yet aggressive, tactics. Mechanized forces, fighting mounted and from the march, are necessary to achieve a rapid rate of advance – as soon as the forces dismount and transit to combat formations, the rate of advance will be drastically reduced. Nevertheless, the above example caused the Russians to suffer severe casualties, but it did not make them deviate from their preferred tactics. This shows that a trade-off between risk and speed is central to Russian tactics. According to a Georgian officer, the highly mechanized behavior of the Russian forces was what they were trained for. He argued that "they try to stay close to their vehicle because of the armor protection and because they do not know how to conduct those [dismounted and urban] operations. (…) Because mainly they have mechanized units – they don't have light infantry" (*Respondent 88, Interview 1*, personal communication, 2022, p. 8).

An obvious disadvantage of such an aggressive approach is the risk of being ambushed. As such, the abovementioned case of Zemo-Khviti is a good example. However, the high rate of advance did also produce significant gains. At some point a Georgian unit, part of the 2nd Infantry Brigade, withdrew from South Ossetia towards Gori and, allegedly, entered the road behind the Russian lead elements:

> Eventually it reached the Tskhinvali-Gori motorway, unaware of the fact that it was following the Russian convoy heading ever deeper into Georgian territory along the same road. Near Shindisi, the Georgians bumped into two Russian BMD-1 airborne armored vehicles of the 104th Airborne Assault Regiment. (…) the van of the 693rd Motorized Rifle Regiment (a tank company and a motorized rifle company) arrived at the scene after being radioed for help. The Russian tanks and armor quickly suppressed Georgian resistance (Lavrov, 2010, p. 71).

Additionally, the threat of being bypassed and encircled creates psychological pressure on a defending force and, most likely, attributed to the collapse of the Georgian Armed Forces. However, that the poor Russian tactical behavior was purely the result of a deliberate choice is more unlikely. It is probable that at least some of it can be explained by a general lack of training and tactical competency.

While mechanized ground forces were used in a traditional Soviet way – mounted and attacking from the march – the "air echelon" was missing. Equally, as the exploitation of the wheel and track was important to penetration and a high rate of advance early in the Soviet period, the rotor and the

parachute became increasingly important in the latter. Tellingly, the VDV forces participating in the operation were used as regular mechanized forces, inserted along the roads and railways leading into the combat zone, and not inserted by helicopter or air landed by transport aircraft (Bukkvoll, 2009, p. 58). The cause of this lack of an "air echelon" was probably the Russian Air Force's lack of ability to suppress Georgian air defenses.

If speed and shock are prerequisites for a successful Russian invasion, significant Russian strategic mobility, as shown in the 2008 Russo-Georgian War, would be necessary to achieve speed and shock in the first place. The ability to move large forces quickly, and over long distances, both by rail and air, and, to a large extent, in secrecy, was important to quickly reach a superior force ratio in South Ossetia and thus incur the collapse of the Georgian forces. One author, describing the successful Russian strategic surprise, has pointed to three potential challenges that the Russian Armed Forces were able to overcome effectively. Firstly, they were able to quickly deploy sufficient forces through the Roki Tunnel. Secondly, large regular forces from the 58th Combined Arms Army were able to move from their bases and railheads at Vladikavkaz to Tskhinvali, along a 167 km mountain road, in a relatively short time. And finally, elite airborne forces were deployed to the theatre of operations from all over Russia by air and rail in time to have a significant impact on the operation (Donovan, 2009, p. 13). Some forces, crucial to the Russian operation, were already in Georgia or a very short distance from the border. These categories of forces included the Russian peacekeepers in Abkhazia and South Ossetia and a small group of regular forces just north of the Roki Tunnel. However, it was the sheer number of Russian forces pouring into Georgia from several directions, in only a few days, that decided the outcome of the war at such an early stage.

According to the commander of the 58th Army, Lieutenant General A. N. Khrulëv, the order to start the attack towards Tskhinvali was received at 00:03 August 8 (Shurygin, 2012). Also according to Khrulëv, the staff of the 58th Army was fully assembled by 01:30, the first BTGs forced the Roki Tunnel at 01:40, and had already reached the strategically important Gufti Bridge, halfway between the Roki Tunnel and Tskhinvali, by 04:40, at which point they entered combat with Georgian forces defending the bridge (Shurygin, 2012). This indicates an extreme rate of advance. Another analysis also points at the high rate of advance:

> The army of the Russian Federation is characterized by a high readiness for movement, which made it possible to increase the group of forces in a short time. (…) In half a day, the units traveled 300 kilometers, maintaining order and organization. The difficult 200-kilometer route along a winding mountain road, a pass, [and] a narrow highway was passed with virtually no losses in equipment and personnel. The 58th Army repeated the dash of the 11th

> Army of the [Baltic Military District] (1200 km in two days in August [1968] to Czechoslovakia [)]. True, without enemy resistance. (…) And [the Russian advance] was seriously hampered by the only motorway, Vladikavkaz-Tskhinvali (167 km), which has an extremely limited capacity (Tsyganok, 2011, pp. 155–156).

In other words, Russian military analysts also point to the crucial role of high Russian combat readiness and strategic mobility for the rapid victory in 2008.

The emphasis on quick decision-making and relentless activity was clearly visible in Russian military behavior during the operation. The trade-off between the rate of advance and the reduction of casualties mentioned several times above, and thus between shock-effect and force protection, is a conscious choice in Russian military theory. In an effort to describe the positive side of Russian performance in the war, a Russian analyst argued that "[e]ven with an almost equal level of armaments and combat training, the eventual losses of the Georgian army were much greater, since tactical tasks were solved much more quickly in the Russian army" (Tsyganok, 2011, p. 159). This was seen in the context of Russian forces conducting "meeting engagements", which:

> [A]s a rule, is short, dynamic and very intense. You often have to act "automatically", you do not even have seconds to think, but only fractions [of a second]. Russian forces, especially spetsnaz and VDV, showed their combat abilities [in meeting engagements] by applying their combat experience from conducting special operations (Tsyganok, 2011, p. 159).

A recurring trait of Soviet and Russian operations is the arrangement of the forces into echelons. However, in the 2008 Russo-Georgian War there was little indication of phasing the forces into echelons beyond the piecemeal deployment that happens naturally, as forces are employed as they become available (*Respondent 61, Interview 4*, personal communication, 2022). For example, the VDV-forces attacking from Vladikavkaz towards South Ossetia were employed in three distinct waves. These waves functioned similarly to three echelons (Tsyganok, 2011, pp. 164–170). However, the waves were, to a large extent, dictated by the capacity of Beslan Airport close to Vladikavkaz:

> [Beslan Airport] was a civilian airfield, absolutely unsuitable for receiving military transport aircraft: only two to three Tu-154 aircraft could land there. The commanders of the Il-76 military aircraft were able to land eight aircraft at the same time, the distance between the aircraft was only 1-2 meters. After unloading, the plane immediately took off, and another one landed in its place, seven planes hung in the air (Tsyganok, 2011, p. 168).

Consequently, it seems that the need to rapidly increase the force concentration in South Ossetia and force the vulnerable Roki Tunnel before any Georgian countermeasures took precedence over arranging the forces into echelons. The advantage of a deliberate echelonment of the forces would be to avoid congestion along the land lines of communication, to avoid entering combat with too many forces, thus causing disorder and friction, and to ease command and control. Russian behavior in the initial hours of the invasion did not show a particular concern over these disadvantages.

Overall, the Russian conceptual view of space in the 2008 Russo-Georgian War was not very sophisticated and aimed at serving the operational level of warfare. The operational need to force the Roki Tunnel, increase the force concentration to an overwhelming level, and rapidly reach decisive objectives before Georgian forces could mount any countermeasures took precedence over any tactical concerns. While this approach was successful in 2008, it entails great risks if the defender is able to make comprehensive preparations, both physically and regarding morale.

The conceptual view of time

During the 2008 Russo-Georgian War, Russian commanders positioned themselves far forward and were deeply involved in the subordinates' execution of their missions. This was likely due to the difficulties of communications within the Russian forces, but also due to the Russian order-based command style. According to Khrulëv:

> [T]he commander must be in the right place at the right time, and in order to achieve victory, arrive at the battlefield before the enemy (…). [A] soldier does not go into battle without a commander. And even more so in conditions of rapidly changing situations, when there are only a few minutes to make the right decision. In a critical situation, the personnel look at the commander, and if the commander is calm, then everything is fine (Shurygin, 2012).

Illustratively, at least four generals followed the initial forces into South Ossetia: Military District Commander Colonel General N. E. Makarov, Army Commander Khrulëv, Deputy Commander of the VDV Major General V. N. Borisov, and VDV Division Commander Major General A. Kolpachenko (Tsyganok, 2011, pp. 168, 170). These generals were clearly taking a hands-on approach to commanding the forces in South Ossetia, which consisted of nothing more than a few battalion groups. For example, when Russian airborne forces started the attack out of South Ossetia:

> The grouping of airborne troops in the South Ossetian direction was moving towards Gori on two axes. The deputy division commander, Colonel Andrey Krasnov, was [commanding] on

> the left flank, on the right, the division commander, Major General Alexei Kolpachenko. The dividing line was the Tskhinvali-Gori railway (Tsyganok, 2011, p. 170).

The best example of the forward positioning of the Russian commanders, often taking command of units far down the chain-of-command, was the actions of the Commander of the 58th Combined Arms Army, Lieutenant General Khrulëv. He was alongside the first Russian regular forces moving into South Ossetia, and, when closing with Tskhinvali, thought he saw an opportunity to quickly enter the town as South Ossetian militia seemed to gain control (Lavrov, 2010, p. 60). After personally ordering a motorized rifle battalion to attack Tskhinvali, Khrulev and his HQ unit joined the convoy and:

> On the edge of the city, the Russian convoy encountered the Georgian 2nd Infantry Brigade's reconnaissance company. Both sides were taken by surprise, and both took casualties in the ensuing brief and extremely short range exchange of fire. (…) The commander of the 58th Army, Gen Khrulev, was injured (Lavrov, 2010, p. 61).

Additionally, the piecemeal commitment of forces and the lack of a uniform command structure made it necessary for commanders at higher command levels to get involved in the command of different units. In the initial period, single units were committed into the operation without their parent unit present. For example, the use of battalion task forces, without regiment and brigade headquarters fully operational, demanded that commanders at higher command levels (division and army) gave commands directly to the battalion commanders. Consequently, lack of sufficient connectivity in the Russian forces, combined with their order-based command style, caused Russian officers to situate themselves far forward, taking command of units below their command level.

Beyond the question of whether the Russian invasion was pre-determined, a response to Georgian actions, or an example of an evolving security dilemma, the Russian forces had undoubtedly made detailed preparations and were ready for war. Examples of these preparations include: the repair of a railway line in Abkhazia in the lead-up to the war (later used in the invasion), the deployment of Russian forces as part of the *Kavkaz*-2008 exercise, and the influx of peacekeepers and volunteers into South Ossetia immediately before the outbreak of hostilities (Malek, 2009, pp. 228–230). Consequently, the Russian forces were well-positioned to exploit the initial period of the war when it all started. Further, the overall Russian military strategy has been described as "swiftly achieving an overwhelming superiority in numbers by combining massive ground deployments with supporting air and naval operations" (Pallin & Westerlund, 2009, p. 403). With this swiftness, the Russian operation was able to overcome several vulnerabilities. Firstly, the vulnerable point of the Roki Tunnel might

have constituted a significant challenge to the Russian operation. If Georgian forces had reached the tunnel and destroyed or blocked it, the Russian forces, heading for South Ossetia, would have to be flown over the Caucasus Mountain Range. Additionally, a Georgian force, in control of Tskhinvali and dug-in, would have been much harder to dislodge than neutralize in a meeting engagement. By entering Tskhinvali very early in the war, the Russian forces were pitted against the Georgian forces on a much more equal footing. Finally, the Russian rapid advance along the Black Sea coast would have been able to block any prospects of Western military aid to Georgia, either through the Turkish border or Georgian ports. In sum, and in addition to the general shock effect of the Russian approach, the speed and audacity of the Russian advance was able to mitigate several vulnerabilities, albeit at a higher risk and with potentially higher casualties than in a more traditional and methodological approach.

An exploitation of the initial period of war implies that the defender, to some degree, is less prepared for war than the attacker. Thus, the Russian emphasis on exploiting the initial period of war presupposes that they are able to surprise their opponent. Consequently, Russian efforts to surprise the Georgians were also present in the 2008 Russo-Georgian War. Several measures were in place to ensure Russian force superiority, and thus strategic surprise, early in the war. In this context, it is beneficial to reiterate that strategic surprise is less about launching operations "out of the blue", but instead about preparing for the outbreak of war at a higher pace than the opponent. Even if a defender knows an attack is imminent, he is "surprised" if the attacker is better prepared for war at the point of initiation of hostilities. In the war with Georgia, the Kremlin continued to claim that there was an impending or on-going genocide in South Ossetia, and that a potential Russian military response would be limited and designed to protect civilians. This was designed to confuse both the Georgians and western countries, and thus delay their realization of the true scale and intention of the Russian operation (Donovan, 2009, p. 12). In certain circumstances, the West might, directly or indirectly, have come to the Georgians' aid, and this could have drastically altered the strategic situation for Russia.

Other examples of Russian efforts to achieve surprise included the significant influx of Russian peacekeepers and "volunteers" to South Ossetia and Abkhazia before the war (A. Cohen & Hamilton, 2011, pp. 17, 21). These measures, without symmetrical Georgian responses, would shift the balance of power in favor of the Russian side. In other words, it would make the Russian side better prepared when or if hostilities were initiated. Another measure, designed to alter the force ratio in favor of the Russians, was the exercise "Kavkas-2008". It was held in July 2008 in North Caucasus and constituted a method of placing large Russian forces in the field not far from the Georgian borders. Many of the

same forces participating in the exercise were later used in the invasion – they were not returned to their garrisons when the exercise ended (Felgenhauer, 2009, p. 163). According to Khrulëv:

> Having completed the exercises, and knowing that the Georgians were continuing unclear maneuvers with forces and means, (…) some formations and units of the army (two battalion tactical groups (BTGs) from two motorized rifle regiments with their commanders and staffs) did not return to their barracks, but remained in the mountains on the approach to the Roki tunnel (…). Both BTGs were well dispersed, camouflaged and fully equipped with people, equipment, ammunition, and fuel. It was these BTGs that decided the outcome of the operation... (Shurygin, 2012).

Additionally, the scenario played out in "Kavkaz-2008" was very similar to the invasion later that year – Russian forces were to assist Russian peacekeepers within Georgia in a peace enforcement operation. 8,000 servicemembers, 700 armored vehicles, 30 aircraft and elements from the Black Sea Fleet participated in "Kavkaz-2008" (Pallin & Westerlund, 2009, pp. 405–406). As such, the use of exercises as a means of deploying large forces to an area, but at the same time reducing the opponent's suspicion, seems to be an integrated part of the Russian approach to surprise.

In Russian eyes, the emphasis on strategic surprise would make these force deployment measures fundamental for the success of the invasion. This would be true whether these force deployment measures were precautions in case of war, or preparations introduced after the decision to go to war had been made. Importantly, to achieve strategic surprise, it would be necessary to keep these force deployments in strict secrecy. If all Russian soldiers were to be told about the oncoming operation well beforehand, the risk of compromising the operation would be significant. However, secrecy also causes soldiers to be mentally unprepared – it reduces morale and combat effectiveness. The chaotic and ad-hoc development of the military situation on the Russian side, including central commanders being on vacation and a lack of essential preparations within the air force, suggests that few were told until the last hours (Tsyganok, 2011, pp. 169, 183). However, a Georgian officer claimed that "based on our information, junior officers and most of the soldiers had information that they were going to invade Georgia before the war" (*Respondent 61, Interview 5*, personal communication, 2022). Nevertheless, this could be the result of guesswork that something was brewing by Russian servicemembers. The number of preparations in Northern Caucasus in the lead-up to the war would likely have made it clear to Russian servicemembers that something was about to happen. These preparations included the "Kavkaz-2008" exercise, a general force build-up in the Russian part of Caucasus, South Ossetia and Abkhazia, and statements alluding to an upcoming war amongst Russian officials (Illarinorov, 2009, pp. 71–73). However, strategic surprise usually demands a high level of

secrecy, and this secrecy could cause one's own forces to be ill-prepared both materially and psychologically. The latter has a particular importance because war is a very dangerous and brutal activity, and human beings need to be mentally prepared for it in order to attain high combat morale.

The reliance on quickly achieving large force concentrations through high strategic mobility, and then conducting operations with a high rate of advance, supported by rapid decision-making, a mechanized approach and simplistic tactics, showed the Russian emphasis on *aktivnost'* to achieve their objectives in the 2008 Russo-Georgian War. Relentless and aggressive combat actions, which put the defenders under pressure, led eventually to the collapse of the Georgian Armed Forces. This approach is perhaps not very sophisticated, but effective when the defender is not physically and psychologically prepared. As one Georgian officer put it:

> [T]hey [the Russians] are somehow dependent on heavily armored columns. (…) Make no mistake they are very intimidating – they look very scary. (…) If they catch you in the open, you are having big trouble. But if they have a formidable enemy which is [dug-in] somewhere, and especially in urban areas or mountains, [their] armored columns are not as effective and [more] vulnerable (*Respondent 61, Interview 1*, personal communication, 2022, p. 7).

Importantly, the Russian approach, effective in the 2008 Russo-Georgian War, relies on several preconditions. Strategic surprise and a high rate of advance in the initial period of war are essential. If these preconditions are not achieved, the Russian operation will be at risk.

Summary

The 2008 Russo-Georgian War, as a case of Russian use of conventional force in an inter-state war, is a very useful example for the understanding of the Russian way of regular land warfare. The primary conclusion to make is that the Russian success, to a large degree, hinged on the prioritization of the operational level of war. Rapidly increasing force-concentrations in South Ossetia and Abkhazia, coupled with a high rate of advance and deep penetration, achieved decisive objectives even in the initial period of the war (see Table 3). Despite a long history of conflict between Russia and Georgia, the Georgian Armed Forces seemed unprepared for a Russian invasion. Thus, Russian forces were able to achieve strategic surprise, at least partially, and rapidly reached their war aims. This approach was reliant on very offensive and aggressive, almost reckless, maneuvers in the initial period of the war, putting the Georgians under continuous pressure, and was another example of the application of *aktivnost'*. This approach, combined with the use of heavy fires, including artillery, air support and

missile strikes, caused the collapse in Georgian morale and force cohesion. Additionally, this was done in only a couple of days. This shattering of the Georgian fighting potential points to a preoccupation with creating *udar*, or shock effect, on the enemy. As such, the Russian invasion, despite the superiority of the Russian Federation over Georgia, would constitute an example of how shock effect might achieve ambitious aims in a short time.

However, on the other hand, the Russian tactical performance was poor in many aspects. In particular, the lack of adequate military communications made combined arms, including proper joint integration, difficult. Additionally, it did also lead to general command and control challenges – for example in relation to strategic communications across the Caucasus Mountain Range. The permeating lack of reconnaissance was another aspect contributing to the poor tactical performance of Russian forces. Both reconnaissance used to support maneuver forces and for target detection and acquisition were very poorly executed, even completely lacking in some respects. Still, some of the poor performance at the tactical level of warfare was a biproduct of the primacy given to the operational level. For example, the extensive use of mechanized columns, rapidly and aggressively penetrating deep into Georgian territory, was a necessity in order to create the collapse in the Georgian fighting potential, despite the increased risk at the tactical level. Despite the fact that the characteristics of the Soviet and Russian way of regular land warfare were not novel, three elements seem to be particularly emphasized by the Russians and might justify a closer look in later cases: the use of exercises as a cover for large-scale deployments; a nascent version of a reconnaissance-strike complex with tactical ballistic missiles; and the use of the battalion, conversely to the regiment, as the primary combined arms unit.

Element of analysis	Characteristic	Observations
Application of effects	Centralization	Objectives at the operational level of warfare, most notably the forcing of the Roki Tunnel and the routing of the Georgian Army, took clear precedence over tactical performance.
	Combined Arms	The use of air support, artillery support and mechanized maneuver was not well integrated, thus, indicating a system-over-system approach.
	Udar	The shattering of Georgian morale and cohesion in a few days, simultaneously taking tactical risks, points to a preoccupation with *udar*.
Conceptual view of space	Penetration	Penetration of Georgian territory by a high rate of advance and significant risk-taking on the tactical level of warfare.
	Mechanization and mobility	The rapid achievement of force superiority in South Ossetia, and thus strategic mobility, was a necessity for the rapid Russian victory. Tactical conduct was primarily mounted and mechanized.
	Template tactics	Simplistic tactics, aimed at achieving a high rate of advance, were largely applied.
	Echelonment	No echelonment beyond the piecemeal introduction of forces as they become available.
Conceptual view of time	Order-based command	High-ranking officers were situated far forward, taking command of units far below in the chain-of-command.
	Surprise	The Russian strategic messaging, introduction of personnel categories before the outbreak of hostilities, and the use of exercise to assemble, prepare and deploy forces indicate that surprise was emphasized.
	Initial period of war	The invasion force was not sufficient to establish an indisputable superiority over Georgian forces. However, the exploitation of the initial period of war, involving a high-risk penetration into Georgian territory, managed to rout the Georgian forces in two days.
	Aktivnost'	Having achieved strategic surprise, Russian forces relentlessly and aggressively attacked Georgian forces as soon as they could. This enabled the Russian forces to seize the initiative and ultimately rout the Georgian forces.
Novel characteristics		-The use of exercises as a cover for large-scale deployments. -A nascent version of a reconnaissance-strike complex with tactical ballistic missiles. -The use of the battalion, in contrast to the regiment, as the primary combined arms unit.

Table 3 Summary of the 2008 Russo-Georgian War.

3.2 The 2014 Invasion of Crimea

Figure 5 Map of Crimea. Original map from d-maps (https://d-maps.com).

Background

On February 27, 2014, Russian forces started to appear at strategic positions around the Crimean Peninsula. Only a few days later, local Ukrainian forces were neutralized and Russian forces were in control of the territory. And most importantly, this was done almost without bloodshed. While this fact, combined with Russian precautions to hide their national, personal and unit identities, could be interpreted as a new type of covert and non-attributable warfare, this chapter will show that the invasion was largely conducted as a conventional invasion within the Soviet tradition, and thus a very interesting case for elucidating the Russian way of regular land warfare.

After the dissolution of the Soviet Union, the Crimean Peninsula became part of the new Ukrainian state. This was internationally recognized, including by the Russian Federation. In fact, Russia had guaranteed Ukrainian territorial integrity through the 1994 Budapest Memorandums. In exchange for nuclear disarmament, the US, UK and Russian Federation guaranteed Ukrainian, Belarusian and Kazakh security (*Joint Declaration [Budapest Memorandum]*, 1994). However, Crimea is historically

important to Russia. Since its inclusion into the Russian Empire in 1783, it has been the place of important historical events. For example, the Crimean War (1853-1856) and the siege of Sevastopol (1941-1942) are important events in Russian national history. In 1954, Crimea was transferred from the Russian SFSR to the Ukrainian SSR by Khrushchev, the leader of the Soviet Union. This was used by the Russian Federation as a justification for the annexation of the Peninsula in 2014. (Biersack & O'Lear, 2014, p. 250). However, while there is much more to Crimean history, this thesis is concerned with military developments in February and March 2014.

In November 2013, the Ukrainian president Yanukovych discarded an already negotiated association agreement with the EU for an agreement with the Russian Federation (Biersack & O'Lear, 2014, p. 248). The EU agreement, which would open more trade with the EU, was exchanged for an offer from President Putin. This deal involved significant financial support to Ukraine (Tsygankov, 2015, p. 284). This sudden change of direction caused many Ukrainians to take to the streets in what has been popularly called the "Euromaidan". This was a protest both against Yanukovych's refusal to sign the EU association agreement and also against the high levels of corruption and nepotism in Ukraine (Ditrych, 2014, p. 82). The Kremlin saw the EU agreement as a dangerous development – a Ukraine with tight bonds to the West would be detrimental to Russian interests. In particular, a subsequent Ukrainian NATO-membership would, in the eyes of the Kremlin, put the Russian Federation in an untenable strategic position (Götz, 2016, pp. 313–314). Consequently, as the protests succeeded and President Yanukovych fled the country on February 21, Russian forces were on the march.

On February 27, 2014, unmarked soldiers started to appear on the Crimean Peninsula and a "bloodless" invasion followed. Russian forces seized important infrastructure and started to increase the force concentration on the peninsula and pacifying Ukrainian forces. After a few days the Ukrainian forces were neutralized – effectively confined to their bases – and Russian forces started consolidating their control of Crimea, not only militarily, but also by taking control of economic and political institutions. Russian forces quickly reached the Perekop Isthmus, the land connection between the Crimean Peninsula and the rest of Ukraine; they took control of airports and air space control agencies; and they blockaded the Ukrainian ports in Crimea. These actions severed all connections between Crimea and Ukraine (Bebler, 2015, pp. 11–12). The political process following the Russian invasion, aimed at giving it legitimacy, went quickly forward. On March 6, the parliament of the Crimean Autonomous Republic voted for independence from Ukraine, and on March 18, in a referendum heavily criticized internationally as illegitimate, an overwhelming majority of the Crimean population voted to integrate Crimea and the city of Sevastopol into the Russian Federation (Mullerson, 2014, p. 140).

The Russian force that entered Crimea in late February 2014, was primarily a conventional force that operated overtly. As will be clearer further below, while Russian soldiers removed flags and badges, they had Russian uniforms, weapons, vehicles and equipment and operated openly, making it very unlikely that Ukrainian civilians and military did not realize who they were. The denial of their existence by Russian authorities, calling them "little green men", was part of the standard Russian approach to conventional operations, enhancing surprise and penetration. The first Russian forces to operate in Crimea were probably units from the 810th Naval Infantry Brigade, usually based in Sevastopol. They were already reported to operate outside their restrictions in Crimea on February 24. Russian landing vessels arrived at Sevastopol on February 26 and 27, carrying special forces (KSO) and VDV troops. On the morning of February 28, three Mi-8 transport helicopters and eight Mi-35M attack helicopters entered the Crimean Peninsula. Several more units from the VDV and *Spetsnaz* arrived, airlifted into Simferapol airport or in landing vessels making several beachheads along the Crimean coastline. Finally, from March 6, motorized rifle, artillery, air defense and coastal defense units were ferried over the Kerch strait, effectively changing the balance of power decisively in the Russian favor (Kofman et al., 2017, pp. 7–9). While the Russian forces were light, agile, and had removed much of their markings, they were mostly operating overtly and there was no uncertainty in the Ukrainian forces and political leadership as to who these soldiers were. After all, the Ukrainian Permanent Representative to the UN stated on March 1 that "Russian troops illegally entered the territory of Ukraine in the Crimean peninsula (…) and their number is increasing every hour" and that "[this] constitutes an act of aggression against the State of Ukraine" (United Nations Security Council, 2014).

Russian forces faced a permissive environment when they entered Crimea as an invasion force. The history of Crimea, combined with a predominant ethnic Russian population, led to a particularly pro-Russian sentiment in the Crimean population. Besides, the formal agreements between the Russian Federation and Ukraine, regulating the Russian military presence in the Sevastopol naval base and on the peninsula at large, gave Russian forces legitimate opportunities to move throughout the peninsula (*Soglashenie [Black Sea Fleet Agreement]*, 1999). This added to Russian freedom of action, and thus the extraordinary permissive environment.

The Ukrainian forces' reluctance to resist, which was the prime reason for the low level of violence in the invasion, was partly result of the permissive environment for Russian forces, but also due to the large Russian conventional force that was assembled on Ukraine's eastern borders. A substantial

force, consisting of approximately 40,000 soldiers,[13] acted as a deterrent towards the Ukrainians (Kofman et al., 2017, pp. 23–24). On February 28, the Ukrainian National Security and Defense Council discussed the developing situation in Crimea. The defense minister Igor' Tenyukh informed the Council that:

> Their [the Russian Federation] goal is not just a demonstration of strength, but a real preparation for the invasion of our territory: the transition to and execution of combat missions. 38,000 people, 761 tanks, 2,200 armored vehicles, 720 artillery pieces and MLRS, as well as up to 40 attack helicopters and 90 military transport helicopters, and 90 attack aircraft have already been concentrated in the Kyiv, Kharkiv and Donetsk directions. In the Black Sea, 80 warships of the Russian Federation went on combat duty (*Transcript UNSDC*, 2014).

He further elaborated on the status of the Ukrainian Armed Forces, and what an unnecessary escalation could mean:

> Today we will be able to assemble, from the whole country, a military grouping of about 5,000 servicemembers, which is capable of performing combat missions. We can throw them into Crimea, but this will not solve the "Crimean problem". (…) And what should we do with thousands of kilometers of borders [with Russia] and Russia's preparations for an invasion? If they come in from the Chernihiv region in the morning, they will be in Kyiv by the evening (*Transcript UNSDC*, 2014)!

It was not only the Ukrainians that were deterred by the presence of the large conventional invasion force at Ukraine's eastern borders. During the meeting, the head of the Ukrainian security service (SBU), Valentin Nalivaychenko, briefed the Council that:

> The information coming through our channels fully confirms that Russia is ready to use its troops, which are concentrated along our border. Both the Americans and the Germans are all unanimously asking us not to launch any kind of active action, because, according to their intelligence, Putin will be using this [as a pretext] to launch a large-scale land invasion (*Transcript UNSDC*, 2014).

In other words, the lack of resistance of the Ukrainian Armed Forces, and also the lack of Western intervention, was not a result of a lack of markings or any other deception measure, but the tangible

[13] "Combat soldiers". When counting all categories of soldiers, the invasion force was just shy of 100,000 (Sutyagin & Clarke, 2014, p. 12).

threat of the use of large-scale conventional force. In fact, had the Russians fully succeeded in deceiving Ukrainian and Western decision-makers of the substantial presence of Russian forces on the Crimean Peninsula, the Ukrainians would have seen less risks if they intervened. This would similarly apply to Western powers. In other words, had the Russian deception succeeded in denying any Russian involvement, the probability of Ukrainian armed intervention would have increased (see Osflaten, 2021). This demonstrates that the Russian invasion of Crimea was indeed largely conventional in character, but with several distinct Russian trademarks which could make it look otherwise. These trademarks will be elaborated on in this chapter.

As the invasion of Crimea took its course, another development in the Donbas region increased the crisis for the Ukrainian political and military leadership even further. In April 2014, ethnic Russian separatists started to take control of political institutions and police stations in Donbas (Kofman et al., 2017, pp. 38–40). While the initial involvement of the Russian Federation in the unrest continues to be unclear, there is little doubt that the Russians were involved in the conflict after it had started. The invasion of Crimea and the intervention into Donbas were perhaps both part of the same Russo-Ukrainian conflict; however, the Russian military approach in the two areas was quite different. Consequently, they are analyzed in separate chapters.

The application of effects

The Russian invasion and subsequent annexation of Crimea was executed with a very small loss of life – the literature points to only two deaths (Lavrov, 2014, p. 174). In that respect, it seems irrelevant to discuss the Russian "application of effects". However, in this thesis, firepower does include all effects placed on the opponent. As touched on above, the Russian potential of conventional force, both on the Crimean Peninsula, but also at Ukraine's eastern border, created an effect on the outcome of the operation, even though this potential was never used. However, while Russian conventional potential was not used in relation to the operation in Crimea, this was not true in the case of Donbas. Interestingly, the "bloodless" character of the Russian invasion of Crimea was unexpected when considering the brutal and firepower-centric approach of the Russian Armed Forces in the Chechen conflict. In the Chechen wars, Russian forces used massive punitive firepower and oppressive measures in order to subdue the Chechen population (Miakinkov, 2011). The restraints shown in Crimea in 2014, with the 2008 Russo-Georgian War somewhere in-between, demand explanation. One contributing factor to the Russian restraint was the permissive environment the Russian forces encountered in Crimea. The pro-Russian sentiment, and general concern about the political developments in Ukraine, caused the Crimean population to be more friendly to Russian invaders (Biersack & O'Lear, 2014, p. 249). Additionally, the threat of escalation to

large-scale war, which the Ukrainian Armed Forces were ill-prepared for, pacified Ukrainian forces; thus, it reduced the challenge of avoiding bloodshed for the Russian forces. However, the magnitude of Russian measures to restrict their use of violent force implies that this was a very deliberate approach. Russian forces and pro-Russian Crimeans surrounded the Ukrainian forces in their bases and tried to make them surrender through every means: persuasion, bribes, threats and, ultimately, fistfights (Lavrov, 2014, pp. 173–178). While lack of discipline and brutal behavior often are attributed to Soviet and Russian soldiers, there are other historical examples of Soviet and Russian restraint. For example, a similar restraint to that seen in the Crimean invasion was present in the invasion of Czechoslovakia in 1968 – a total of 137 Czechs and Slovaks were killed (Fraňková, 2017). While this is not meant to say that this was not a brutal and oppressive invasion, the total death toll does not indicate an army without the ability to restrict their use of force.

Other non-lethal effects, such as effects from cyber warfare, would be expected in an operation with significant restrictions on the use of lethal force. While there were no major cyberattacks during the invasion, and none with large destructive effects such as attacking electrical power supply, some minor cyberattacks were reported (Limnell, 2015, p. 525). These attacks included distributed denial of service (DDoS) attacks against Ukrainian governmental websites and hacking of cell phones of members of the Ukrainian parliament (Polityuk & Finkle, 2014). Consequently, the use of cyberwarfare was only limited. Added to that, much of the Russian effort on the Crimean Peninsula was focused on isolating the Ukrainian forces there by *physically* disrupting communications. These disruptions, including the cutting of fiber optic landlines, cell phone jamming and the seizure of telecom installations, could certainly be a part of a cyber strategy, but are also traditional methods in regular warfare (Kofman et al., 2017, p. 10). Arguably, this adds to the "regular" character of the invasion.

Despite the invasion being largely "bloodless", the Russian concept of *udar*, or "shock action", was present during the invasion of Crimea, albeit in a subtle and indirect way. The pacification of Ukrainian forces was caused by the swiftness, boldness, and rapid achievement of superiority of the Russian invasion force; thus, "shattering" the Ukrainian will to resist. However, the uncertainty and mental unpreparedness of the Ukrainian forces, combined with the tacit threat of large-scale invasion, also contributed. While *udar* is predominantly used about physical, and thus violent, actions directed at the enemy, the Russian combat *potential*, clearly displayed to the Ukrainian defenders in great depth and during a short time, had a similar effect. In other words, *udar* is visible in Russian behavior, not through the use of massive firepower but in the use of combat *potential*.

The conceptual view of space

While a seizure of Crimea was likely a contingency[14] the Russian General Staff had planned for a long time, the invasion on February 27 was probably not decided long beforehand; there is a difference between planning for a contingency, which most militaries do, and actually deciding to execute this contingency. In the case of Crimea, the Kremlin is unlikely to have foreseen the ousting of President Yanukovych and thus many of the prerequisites for the invasion. The final decision to invade was likely made by Putin on February 22 (see McDermott, 2015, pp. 9–10). Consequently, the speed at which this operation was conducted was impressive. Not only did the elite Russian forces, spearheading the invasion of the Crimean Peninsula, arrive and start operations quickly after receiving their orders, but a large regular force also materialized at the eastern borders of Ukraine. Both of these build-ups of forces were siphoned off from a series of exercises and readiness inspections. Accordingly, these activities acted as a "cover" for the strategic deployments necessary for the invasion of Crimea (Kofman et al., 2017, p. 24). The strategic mobility and readiness that the Russian forces displayed in the lead-up to the invasion were impressive, but also a requirement for the swiftness and ease of the seizure of Crimea. A delayed operation, or an invasion of Crimea without the threatening build-up on Ukraine's eastern border, would have given Ukraine and the West more opportunities to respond politically and militarily. Consequently, the considerable strategic mobility and combat readiness of Russian forces acted as preconditions for the penetration of the Ukrainian defensive system. The Russian use of surprise and swift exploitation of the initial period of war, discussed below, achieved this penetration before effective countermeasures could be implemented.

Russian regular units are traditionally reliant on heavy firepower and a high degree of mechanization. Artillery and firepower from armored vehicles such as tanks and infantry fighting vehicles are important to Russian tactics. However, in the invasion of Crimea light units were mainly used, at least in the first few days. According to one source, VDV forces, naval infantry, special forces (KSO), and *spetsnaz*, both from the GRU and the VDV, were used initially in the operation (Kofman et al., 2017, pp. 7–8). It is important to note that Russian *spetsnaz* is not an equivalent of Western "special forces" or "special operation forces". *Spetsnaz* (short for *spetsial'noye naznacheniye* or "special purpose") would be better described as "robust elite infantry" who are especially trained for operations behind enemy lines or in contested areas (Bukkvoll, 2016, pp. 25–27). Generally, they "are

[14] The word contingency, in the military context used here, points to something that is perceived as a possible operation in the future. Thus, it would be sensible to plan for such an event. The decision to execute the plan is not made, but if it becomes necessary, this contingency plan will make the operation better prepared in a shorter time.

not intended to act independently, [and] [t]hey are seen as an elite force that performs missions (reconnaissance, direct action, etc.) to further the movement and maneuver of the rest of the conventional armed forces" (Bartles & McDermott, 2014, p. 51). While the *Spetsnaz* designation may cause some to think of them as Western-style special forces, they are not. However, the Russian Special Operations Command (KSO), officially established as late as 2011, is more similar to Western special forces such as the US "Delta Force" and the UK "Special Air Service" (Nikolsky, 2014, pp. 124–125). Following the Soviet and Russian tradition, all these types of forces are largely equipped with light combat vehicles in order to rapidly maneuver by their own means. During the invasion of Crimea, the initial Russian forces were primarily equipped with armored personnel carriers such as BTR-80, BTR-82A and *Tigr* (Lavrov, 2014, pp. 160–164). These vehicles are armored and capable in combat, and thus these units could be classified as motorized, or even mechanized. Consequently, the vast majority of the forces used in the initial phase of the invasion of Crimea were elite infantry, with some degree of mechanization.

This operational role of rapid insertion of elite forces in the initial period of war, ensuring the unhindered introduction of larger regular forces at a later stage, is not new. For example:

> This role began with the Soviet invasion of Hungary, aimed at quelling the Hungarian uprising of 1956. VDV units began quietly occupying Hungary weeks before overt Soviet action began, and after the commencement of hostilities they gained a reputation for quickly and efficiently seizing objectives in an urban battle space to which conventional Soviet commanders were not accustomed (Bartles & McDermott, 2014, p. 52).

While it is questionable how "covert" the influx of naval infantry, VDV and *spetsnaz* forces were in the Crimean case, the overall approach in Hungary and Crimea seems comparable. In a way, the elite forces, inserted into the battlespace first, constitute the first echelon, paving the way for follow-on operational echelons of a more regular character. A report from the Swedish Defense Research Agency (FOI) explains that:

> the spearheading light forces have a higher share of contract soldiers, are disciplined and well trained, also for operations abroad. (…) In Crimea, they were gradually replaced by regular infantry units largely manned by one-year conscripts less likely to show the same morale and discipline. Having high-quality units with more contract soldiers is the result of a well-known choice in the reshaping of Russia's Armed Forces (Franke & Westerlund, 2014, p. 42).

After all, the continuous existence and prioritization of these elite units (VDV, naval infantry, *Spetsnaz*) in the Soviet and Russian armed forces indicates their lasting role as a spearheading operational echelon. However, conversely to traditional echelonment, which emphasizes the deliberate phasing of attacking units, this type of operational echelonment might also be a consequence of different strategic mobility and combat readiness amongst categories of Russian troops. For example, VDV forces will most often spearhead a Russian invasion because they are able to be airlifted into the operational area in the early stages of an operation. In the 1979 Invasion of Afghanistan, units from the 103rd and 105th Airborne Divisions were airlifted into Kabul and Bagram airfields in the initial hours of the invasion (The Soviet Invasion of Afghanistan, 1980, pp. 44–47).

During the invasion, the Russian forces used several means and methods to introduce forces into the Crimean Peninsula. While trying to maintain a shroud of uncertainty over the scale and intent of the invasion (*maskirovka*), Russian forces, and thus their combat potential, quickly increased. From February 27 onwards a steady stream of Russian forces arrived in Crimea, for example by large landing ships arriving in the port of Sevastopol. These ships likely made several trips between Novorossiysk and Sevastopol, carrying forces from several units such as the 382nd Independent Naval Infantry Battalion, the 10th Independent Spetsnaz Brigade, and the 25th Independent Spetsnaz Regiment (Lavrov, 2014, pp. 164–166). Helicopters were also used to increase the Russian forces on the peninsula. Three transport helicopters and eight attack helicopters (Mil-35M) entered Crimean airspace on February 28 (*V Krym pribyli 10 rossiyskikh vertoletov*, 2014). In the initial part of the invasion, a large share of the Russian forces was likely inserted by transport aviation. One source stipulates that eight to 14 Il-76 transport aircraft landed at Gvardeyskoye air base near Simferopol on February 28. According to the same source, this would have increased the Russian forces by as much as 1,500 VDV soldiers (Lavrov, 2014, p. 165). There are also reports of landings of Russian forces by hovercraft along the Crimean coast line, for example in Feodosia on March 1 (Bartles & McDermott, 2014, p. 57). From March 6, ferries over the Kerch Strait were used to bring additional forces to Crimea (Kofman et al., 2017, p. 9). By March 12, several thousand Russian soldiers from VDV, *Spetsnaz*, naval infantry and special forces units had been inserted into the peninsula by approximately 15 landings at Crimean ports, 48 landings by aircraft, and ten vehicle convoys ferried across the Kerch strait. After March 12, regular mechanized forces were brought into Crimea, primarily across the Kerch Strait. These forces included the 18th Independent Motor Rifle Brigade and the 291st Artillery Brigade (Lavrov, 2014, pp. 169–172). Importantly, in case of Ukrainian military resistance, all these means of insertion would be vulnerable in a situation which suddenly changed to a “shooting war”. Landing vessels and transport aircraft, without escorts and preparatory suppression of Ukrainian coastal defense and air defense forces, would end up sunk or downed.

While there seems to be a particular prioritization of pacifying Ukrainian air defense units first, only 60 percent had been seized by March 1 (McDermott, 2015, p. 12). In other words, hundreds of Russian soldiers could have become casualties before they even disembarked. This risk acceptance is significant and an important characteristic of this Russian operation.

In relation to the Russian conceptual view of space, an approach that emphasizes swiftness seems to stand out. Firstly, this approach presupposes a high degree of general readiness and strategic mobility in the Russian forces. Without it, they would not be able to concentrate sufficient forces as quickly, presuming the decision was made a few days before the launch of the invasion. Secondly, the elite forces from the VDV, naval infantry, *spetsnaz* and special forces acted as a first operational echelon, paving the way for the introduction of heavier mechanized forces, which also included heavy air defense and shore defense units. This first echelon was inserted into the Crimean Peninsula by many means and methods, which entailed great risk to the force. When the Russian forces were in theatre, they moved quickly to their assigned objectives, thus increasing the risk even more. Consequently, the swift introduction and movement of forces, combined with a high level of risk acceptance, points to the concept of *aktivnost'*. The willingness to accept high risks to ensure swift and relentless offensive maneuvers, the essence of *aktivnost'*, seems to be very much present in the Russian invasion of Crimea. This will be discussed further in the next section. The "bloodless" character of the invasion makes it difficult to assess Russian tactics and combined arms; however, the case shows clear similarities to the Soviet conceptual view of space, including strategic mobility, mechanization and echelonment.

The conceptual view of time

The Russian order-based command style in the case of the Russian invasion of Crimea portrays perhaps a different picture of Russian behavior than in earlier wars. It seems that the traditional Russian challenges of applying sufficient de-centralized and flexible leadership were significantly improved. However, despite improvements in Russian discipline compared to earlier conflicts, Russian improvements within command and control were more indecisive.

The Crimean Peninsula was a largely permissive environment for the Russian invasion forces. With pro-Russian sentiments in the population and political elite, and close connections between the Russian and Ukrainian military on the peninsula, the Ukrainian will to resist was low (*Respondent 72, Interview 1*, personal communication, 2022, pp. 1–2). Still, the process of pacifying and defeating the Ukrainian forces, without resorting to the use of deadly force, was not easy. In many cases, it was not possible to pressure, bribe or cajole the Ukrainian forces into submission (Kofman et al., 2017, pp.

26–27). Thus, many Ukrainian ships and bases had to be captured with non-lethal force. One such non-lethal assault is illustrating:

> On the night of March 24, SOF soldiers stormed the last bastion of Ukrainian resistance on the ground, the compound of the elite 1st Marines Regiment in Feodosia. (…) About 60 Ukrainian marines (…) had barricaded themselves inside their barracks. The Russian spetsnaz decided on a demonstration of overwhelming force to persuade their opponents. The compound was cordoned by BTR-82A APCs, and two mi-8 helicopters landed directly on the unit's parade ground with Russian soldiers disembarking in assault formation. Two mi-35M attack helicopters also provided air support overhead. Russian soldiers then launched stun and smoke grenades at the barracks and fired several shots at the upper part of the windows on the second floor. That minimized the risk of the Ukrainian marines being hit (…) During the ensuing assault a fistfight broke out (…) [and] [t]he marines' resistance was overcome two hours after the launch of the operation (Lavrov, 2014, p. 177).

Clearly, the Russian forces showed a high degree of discipline in refraining from using deadly force. Also, according to one source, "there were no reports of looting or other activities that could have alienated the population" (McDermott, 2015, p. 18). Consequently, and conversely to other Russian military conflicts such as the war in Chechnya, the behavior of the Russian forces was more disciplined than expected.

Consequently, the invasion of Crimea points to a Russian force without the traditional shortcomings related to Soviet command and control. The elite Russian forces, used in the initial phase of the invasion, seemed to show both flexibility and initiative. Thus, the traditional lack of de-centralized leadership and tactical initiative in Russian forces appeared to have significantly improved. However, it is important to note that the Russian forces did not encounter armed resistance. Consequently, the reason for the apparent Russian improvements in command and control could simply be that their centralized planning and order-based leadership style performed well. Because the opponent was not fighting back with military force, their leadership style was not significantly "put to the test". In other words, the Soviet view on initiative – the dedication to solve the mission as ordered – would perhaps be sufficient. To find solutions beyond the given orders, which is a better description of the Western view on initiative, would, to a larger degree, be unnecessary.

The success of the invasion of Crimea rested largely on the Russian ability to pre-empt any Ukrainian or Western countermeasures. A lengthy build-up of forces, with its accompanying increased tension, could have given the Ukrainian Armed Forces the possibility to deploy forces to the field, mobilize

what resources they had, and influence the public to resist an invasion. Russian forces neutralized any opportunity to resist by acting before such countermeasures could be applied if that were the chosen Ukrainian course of action. However, in order to act with such speed, the forces needed to be ready at hand and in theater immediately after the Kremlin made the decision. This was achieved through the strategic mobility of the Russian elite forces, to a large extent by air. They were quickly deployed either to areas close to Crimea or directly to airports on the peninsula itself (McDermott, 2015, p. 12). The speed of the deployment of forces clearly aided surprise. Additionally, the forces needed to be combat ready when they entered Crimea, presumably without much time to prepare. Importantly, as the Russian forces were not facing combat during the invasion, it is difficult to establish how combat ready they really were. In spite of this, they were able to achieve their missions. Surprise encompasses both the speed of the operation and the delay of the opponent's realization of that operation. Thus, there would likely be Russian measures of secrecy and deception, designed to delay the Ukrainian realization of the Russian operation.

These Russian measures, or their plan for *maskirovka*, included the removal of flags and badges from uniforms and vehicles, some forces acting as "local self-defense militia", the disruption of communications between Crimea and the rest of Ukraine, and non-use of violence; the latter would also include the acceptance of the inherent tactical risks if the Ukrainian forces resisted militarily (Bruusgaard, 2014, pp. 83–86). While the Ukrainian political and military leadership was in no doubt about the existence of a Russian military operation in Crimea, the Russian measures of secrecy and deception made it difficult to discern its exact scale and intent (Lavrov, 2014, p. 173). However, the permissive environment for Russian forces and the strategic threat to Ukraine, constituted by the large Russian force on the eastern borders of Ukraine, would probably still not have altered the outcome if the plan for *maskirovka* failed.

The Russian ability to quickly mobilize and deploy substantial forces to the theatre of operations, and at the same time reduce the signature of those forces, was aided by the use of large-scale exercises and readiness inspections (the so-called "snap-inspections"). A large readiness inspection, starting on February 26 acted as a "cover" for the deployment of elite forces to Crimea. To increase the deception, large parts of the mobilized forces were sent to areas far from Ukraine and Crimea (Lavrov, 2014, p. 162). Three armies, two from the Western MD and one from the Central MD, were allegedly put to the field and, according to Russian reporting, involved 150,000 soldiers. The subsequent exercises were concentrated on the eastern border of Ukraine and the Kola Peninsula, while an announcement coming from the Southern MD, the military district closest to Crimea, stated that nothing out of the ordinary was happening there (Norberg, 2014). The exercises, lasting

between February 28 and March 7, included elements from air, naval, and airborne forces, in addition to the Ground Forces, and had, according to Defense Minister Shoigu, a focus on combined arms and joint operations (McDermott et al., 2015, p. 45). Consequently, an important part of the Russian deception effort was the use of large-scale exercises and readiness inspections. Additionally, these kinds of activities, making large Russian troop movements commonplace, had become more frequent in the previous years and thus made it harder for Ukrainian and Western decision-makers to guess what they were up to in February 2014 (see Norberg, 2014).

After surprise was achieved, Russian forces employed swift and relentless operations from the initial period of the conflict. Light elite units quickly secured Ukrainian military installations and strategic points such as Simferopol Airport and the Perekop Isthmus. Furthermore, the composition of the Russian forces initially used on the Crimean Peninsula required an emphasis on swiftness and agility. The lack of heavy forces could have put the Russians in an inferior tactical situation if the heavier equipped Ukrainian forces had resisted. Initially, the Russian forces were outnumbered and scattered, and thus vulnerable (Kofman et al., 2017, p. 22). However, to wait for larger forces to be built up would forfeit the opportunities that existed in the uncertain and chaotic situation in the first hours and days of the operation. In this, there is an acceptance of risk at the tactical level of warfare in order to achieve operational level aims. In addition to showing an emphasis on *aktivnost'*, this indicates a Russian prioritization of the operational over the tactical level of warfare to a degree that might have been perceived as reckless in a Western context. After all, had the Ukrainian forces in Crimea deployed to the field in time, or just opened fire on the Russian forces, the invasion would have been significantly more brutal at the very least; in the worst case scenario for the Russians, they would have failed to seize the peninsula.

The initial Russian actions, aimed at creating uncertainty of the scale and intent of the invasion, changed rather quickly into a Russian acknowledgement of the military seizure of the peninsula. This acknowledgement was necessary both to adhere to the Russian strategic communication of "protecting ethnic Russians from the nationalists in Kyiv", and to deter any Ukrainian military endeavors into Crimea (see for example "Putin Acknowledges Russian Servicemen," 2014). As such, it is likely that the Russian deceptive measures were primarily aimed at ensuring a rapid and unhindered insertion of a regular invasion force, and not at exploiting a hybrid or "grey zone" approach – at least not beyond getting the conventional force in place. As one analysis puts it: "The Crimean operation does not represent a case of hybrid warfare [as in Frank G. Hoffman's definition], but rather a fairly traditional covert operation to shape the battlefield for a conventional invasion" (Kofman et al., 2017, p. 23). However, as discussed above, the operation was more overt than this

analysis suggests. If the invasion was supposed to be covert, Russian forces should almost exclusively have used hidden units or soldiers in civilian clothing or Ukrainian uniforms. Instead, they invaded with thousands of elite conventional forces, entering the peninsula with transport aircraft, large landing crafts and attack helicopters, followed by heavy mechanized forces and artillery, air defense and coastal defense units. The removal of badges and flags, but not of their organic uniforms, weapons and vehicles, would make it hard to follow which units were present where (i.e. *maskirovka*), but not that the soldiers were from the Russian Federation. Finally, perhaps the strongest argument against the "non-attributional" interpretation of the Russian invasion is that the more successful this approach had been, the lower would have been the risk to Ukraine and the West if they intervened – they would then think they were facing armed Ukrainian citizens and not the forces of a nuclear armed major power.

Overall, Russian forces had implemented several measures to ensure surprise in the lead-up to the invasion of Crimea. These measures included large-scale exercises, acting as a "cover" for the force deployment, and the removal of markings on the forces appearing in Crimea. Consequently, they made it difficult to understand the true scale and intent of their operation for the Ukrainians. This reduced the Ukrainian ability to react appropriately before heavy Russian mechanized forces were in place and would make any effort to defend the Crimean Peninsula futile. Finally, there seems to be a clear Russian awareness of taking advantage of the initial period of war, and Russian forces accepting great risks to exploit these possibilities.

Summary

The Russian invasion of Crimea was, to a large extent, conducted as an invasion by regular forces; however, it was conducted with some typical Russian and Soviet characteristics. Firstly, it showed an emphasis on achieving surprise and exploiting the initial period of war (see Table 4). When Russian authorities denied the presence of a significant number of Russian forces on the peninsula, stating that the soldiers appearing were nothing more than local militia, they were partly trying to give some legitimacy to their use of force, but also attempting to protect the on-going operation through deception and secrecy. The Russian forces, in Russian uniforms and with modern Russian weapons and vehicles, would not be mistaken for anything else by the Ukrainians, albeit without flags and markings. This deception was meant to delay Ukrainian and Western realization of the scale and intent of the invasion and thus their countermeasures. Consequently, this would prolong the favorable situation for the Russian forces in the initial period of the operation. However, this thesis argues that if the Ukrainians had believed it to be a more limited operation, the strategic situation would still have made them unlikely to intervene.

Secondly, elite Russian units, such as VDV, naval infantry, *spetsnaz* and special forces, were introduced first, due to both their readiness, and also their ability to execute the delicate mission; there was clearly an ambition to seize Crimea without the use of deadly force. These forces, effectively pacifying Ukrainian forces and seizing control of Crimean infrastructure and government buildings, acted as a first operational echelon, ensuring the unhindered introduction of heavier mechanized forces at a later stage. Consequently, a combination of secrecy, deception and elite forces rapidly taking control of the peninsula was able to quickly change the balance of forces until the Russian forces had achieved superiority. However, such an approach entails great risks. If the defender is materially and mentally prepared and decides to resist, the invasion force, relying on rapid rather than secure means of insertion into the theatre of operations, will be in a very vulnerable position.

Element of analysis	Characteristic	Observations
Application of effects	**Centralization**	The rapid and scattered introduction of forces into the area of operations shows an acceptance of risk at the tactical level of warfare in order to achieve operational level aims.
	Combined Arms	---
	Udar	The Russian display of combat *potential* to the Ukrainian defenders, in great depth and over a short time, had a shattering effect on the Ukrainian will to resist.
Conceptual view of space	**Penetration**	Penetration was necessary to quickly reach decisive objectives, such as Ukrainian military bases and airports, before any countermeasures could be implemented.
	Mechanization and mobility	-Despite Russian forces, used initially, being elite and light in character, they were equipped with organic combat vehicles, thus, having a degree of mechanization. -Russian strategic mobility and combat readiness was a precondition for achieving surprise.
	Template tactics	---
	Echelonment	The elite infantry, used in the initial period of the invasion, acted as a first operational echelon, preparing the area of operations for the later introduction of mechanized forces.
Conceptual view of time	**Order-based command**	While Russian forces showed a high degree of discipline, avoiding the use of lethal force, it is inconclusive whether Russian behavior showed a more flexible and decentralized leadership style.
	Surprise	*Maskirovka* measures, such as removing badges and flags, isolating Crimea from the rest of Ukraine and denying the presence of Russian forces, were implemented to achieve surprise.
	Initial period of war	The Russians exploited the surprised and pacified Ukrainian forces by swift and relentless operations in the initial period of war. Force superiority quickly changed in the Russian favor.
	Aktivnost'	See "initial period of war".
Novel characteristics		There was a deliberate Russian use of large-scale exercises and readiness inspections to act as a "cover" for the necessary force deployments towards Crimea.

Table 4 Summary of the 2014 invasion of Crimea.

3.3 The Russian Intervention into Donbas from 2014

Figure 6 Map of Donetsk and Luhansk Oblasts. Original map from d-maps (https://d-maps.com).

Background

Commonly labelled as an example of irregular warfare, the fighting in Donbas from April 2014 did also have several "regular" aspects. The intervention by Russian regular forces, most notably from August 2014 until February 2015, is one obvious example (The White Book of the ATO, 2017, pp. 31–36). Additionally, the military activity by the Russian-backed separatists also involved formations with equipment and organization that resembled regular forces, both in a mobile mode on the fluid battlefield in the initial phase of the conflict and in a positional warfare mode after the "Minsk"

cease-fire agreements had cemented the frontlines. Strictly speaking, the separatist formations were not part of the Russian Armed Forces, but it can be presumed that they would behave using some characteristics of the Russian way of regular land warfare. The separatist forces had partly received training from the Russian Armed Forces; they were supported and in some instances led by service members from Russia; and their material basis (e.g. equipment, manuals) was, to a large extent, Soviet and Russian (*Analiz Vedennya Antiterorstichnoi Operatsii*, 2015, p. 1). Consequently, while it might not be directly apparent, the Russian intervention into Donbas after 2014 can produce inferences about the Russian way of regular land warfare. The whole period from April 2014 to the 2022 large-scale invasion is of interest; however, the most interesting period runs from the summer of 2014, when the fighting between Russian-backed separatists and Ukrainian forces started in earnest, to the "Minsk II" agreement, signed February 11, 2015, "freezing" and stabilizing the frontlines.

There are two general explanations as to how the armed rebellion in Donbas was initialized and sustained: the first "perspective" argues that the rebellion was fabricated and sustained by the Russian Federation. Thus, the anti-Kyiv sentiments in the Donbas population and the organization of armed rebels were all part of a clandestine operation orchestrated by the Kremlin. The other "perspective" sees the rebellion in Donbas as spontaneous and a reaction to Ukrainian ethnic nationalism. There is no clear verdict of which "perspective" is the most correct – indications of both can be found (see Sakwa, 2016, pp. 148–156). The first separatist demonstrations had already happened on March 1. 7,000 protesters gathered on the central square of Donetsk with Russian flags and pro-Russian messages (Käihkö, 2021, p. 37; Sakwa, 2016, p. 148). However, the first violent and forceful actions by pro-Russian activists in Donbas started on April 7, when separatists stormed offices of the SBU (Ukrainian security service) and other state administrative buildings. The separatists took control of weapons from the SBU offices (The White Book of the ATO, 2017, p. 20). As the Ukrainian government started to clamp down on the primarily unarmed protesters and arrest their popular figureheads in early March, more militant leaders with links to Russian security services, such as Igor Girkin (with the *nom de guerre* "Strelkov") became more prominent (Balaban et al., 2017, pp. 32–35). From then on, the pro-Russian activists seemed increasingly better organized and resolute. They proclaimed the "Donetsk People's Republic" on April 7, and later, on April 27, a similar organization was proclaimed in Luhansk, the "Luhansk People's Republic" (Sakwa, 2016, p. 150). Initially, the Ukrainian central government seemed passive and unwilling to challenge the protesters in Eastern Ukraine – much the same as happened in Crimea. For example, the local police force would not intervene and remove the protesters from administrative buildings (Käihkö, 2021, pp. 38–39). Consequently, it was not the Ukrainian authorities that were the first to challenge the

separatists in the East, but Ukrainian volunteers who wanted to avoid a dismembered Ukraine. These volunteer battalions increased the intensity of the conflict and the situation soon escalated further (Bukkvoll, 2019).

Already by mid-April, the rapid deterioration of the situation, including a lack of territorial control in Donbas, and the renewed Ukrainian assertiveness after the political chaos following Yanukovych's departure, made Ukrainian authorities decide on a much more forceful approach. A military response, the so-called "Anti-Terrorist Operation (ATO)", was introduced on April 15. To a large extent, the ATO was launched to avoid a similar scenario to Crimea – a *fait accompli* (Käihkö, 2021, p. 39). Initially, the Ukrainian operations were largely ineffective; Ukrainian forces were reluctant to use violence and were blocked by relatively small rebel groups and demonstrators. However, by late April, Kyiv had started mobilizing the country, including the re-introduction of general conscription on May 1, and was eventually ready for decisive operations (Kofman et al., 2017, pp. 40–42). From this point on, the ATO had an increasingly military appearance and Ukrainian forces were more prepared to use force.

Parallel to the events in Donbas, a large Russian conventional force was assembled at the eastern border of Ukraine from early March 2014. According to RUSI's assessment, in April 2014, this force was just shy of 100,000 soldiers if combat support and logistical forces are included. Importantly, these forces were not primarily conducting field exercises, but in a state of high readiness along the Ukrainian eastern borders, and deployed in pre-combat positions and poised to attack towards Chernihiv, Sumy, Kharkiv, Donbas, and the southern part of Ukraine, including Mariupol, Kherson and possibly Odessa (Sutyagin & Clarke, 2014, pp. 3–5, 12). Additionally, several pieces of information indicated that this force was ready to invade if the order was given and not simply a demonstration of force. Firstly, field hospitals were deployed together with the invasion force (Gordon, 2014). Secondly, troops of the Russian Ministry of Interior (MVD) were put on higher readiness: the war-time task of the interior troops being to pacify populations in occupied territory (Sutyagin & Clarke, 2014, pp. 12–13). Thirdly, compared to previous Russian exercises, unprecedented activity in the Russian Military Air Transport Command had been observed. The build-up also involved the use of An-22s, which are designed to carry heavy armored vehicles; thus, this indicated a build-up that was beyond expectations with limited exercise objectives (Sutyagin & Clarke, 2014).

Interestingly, within their corresponding front sectors, the units deployed in 2014 came from the same military districts as the units deployed in the same sectors in the 2022 invasion of Ukraine. According to RUSI, most Russian Ground Forces units poised to attack on the Chernihiv, Sumy and Kharkiv directions were from the Western Military District in 2014. These units included the 2nd

Guards Tamanskaya Motor Rifle Division, the 27th Guards Motor Rifle Brigade and the 4th Guards Kantemirovskaya Tank Division. Shortly afterwards, these three formations became part of the Western Military Districts main fighting force, the 1st Guards Tank Army (C. Harris & Kagan, 2018, pp. 28–30; Sutyagin & Clarke, 2014, pp. 9–10). On the Donbas direction and in the south (Crimea), units from the 20th Guards Motor Rifle Brigade, 205th Motor Rifle Brigade, the 18th Guards Motor Rifle Brigade[15], and the 33th and 34th Mountain Infantry Brigades participated, which were all part of the Southern Military District (C. Harris & Kagan, 2018, pp. 32–33; Komakhidze, 2014; Sutyagin & Clarke, 2014, pp. 10–11). At the onset of the invasion in 2022, the Western and Southern Military Districts had similar areas of responsibility. However, the invasion force in 2022 was supplemented with the Eastern Military District, attacking along the Dnipro towards Kyiv, and the Central Military District, responsible for an attack towards Kyiv from Chernihiv (Varner, 2022). Consequently, observing the similarities of the invasion forces of 2014 and 2022, there is a significant probability that the invasion of Ukraine was a Russian contingency from before 2014, and thus an invasion was seriously contemplated in 2014.

Allegedly captured Russian invasion plans[16] from 2015 show a similar plan for invading eastern parts of Ukraine. If they are authentic, the invasion and occupation of Ukraine east of the Dnipro was at least a contingency. However, the invasion plans were clearly at the draft stage and not signed. Thus, it is impossible to know if they were only used in a wargaming stage of a planning process or if they indicate more concrete preparations for an invasion. Additionally, the documents contain dates from 2015 and references to the 1st Guards Tank Army, which was probably activated in the fall of 2014, and thus cannot have been drafted in their current form before the invasion of Crimea (*Poyasnitel'naya Zapiska Gruppirovki Voysk «Sever»*, 2015, pp. 4–5, 21). This is an indication that, contrary to the above discussion, there were no concrete invasion plans for Ukraine when the military operations were launched in February 2014. Still, a plausible explanation to these references is that the draft, surfacing in the summer of 2015, was an updated version of earlier contingency plans.

[15] Later used to establish the 42nd Guards Motor Rifle Division (*V YuVO Formirovaniye 42-y*, 2016).
[16] This was a set of documents, describing a draft plan for invading Ukraine east of the Dnipro, that surfaced in the summer of 2015. It was published by Ukrainian parliamentary Anton Gerashchenko on June 16 (Aseyev, 2015). While the authenticity of the documents cannot be confirmed, P. Karber assess that it "appears to be an authentic set of documents" (Karber, 2015). This assessment seems reasonable because the documents contain realistic Russian military vocabulary, and a marked resemblance to the actual Russian invasion in 2022. Additionally, the origin (leak from a formal representative of the Ukrainian state), and an unnecessary number of details, but still an incomplete draft, makes it less likely that this was a Ukrainian falsification. The main body of these plans are included as an appendix to this thesis.

Back in Donbas in the spring of 2014, the conflict escalated further. After the initial failures in April 2014, the Ukrainian ATO started to become increasingly efficient throughout the summer. The “First Battle of the Donetsk Airport”, shortly after the Ukrainian elections May 25, was perhaps a turning point for Russia and the separatists. This battle became very costly for the separatist forces and was seen as a failure, demonstrating their insufficiencies, including instances of friendly fire. Subsequently, an increase of “volunteers” and heavy material support, such as tanks, artillery and air defense, were channeled to the separatists from Russia (Kofman et al., 2017, pp. 43–44). Although the separatists now could defend themselves against Ukrainian heavy mechanized forces and air support, they were still pushed back, yielding large amounts of territory, and retreating to easily defendable terrain such as built-up areas. On July 17, separatist forces launched an air defense missile at something they thought was a Ukrainian military aircraft; however, it was a civilian airliner. Flight MH17 from Malaysian Airlines was shot down and everyone on board, 298 persons, were killed (Crash Report MH17, 2015). The international backlash of the downing of MH17, combined with the acute situation of the separatists, convinced Putin that he needed to intervene to avoid a Ukrainian victory in the Donbas and the situation becoming uncontrollable (Sakwa, 2016, p. 169).

On the night of August 24, Russian regular forces crossed the border into Ukraine. According to Ukrainian authorities, eight BTGs crossed the border, numbering up to 4000 soldiers, 20 tanks, 90 IFVs and 30 artillery systems. The BTGs were drawn from both the Russian Ground Forces and the VDV (The White Book of the ATO, 2017, p. 31). Immediately afterwards, Ukrainian forces, operating in the Ilovaysk area, became surrounded and subsequently suffered heavy casualties. At the same time as Russian regular forces were crossing the border, lead elements of the ATO were trying to cut the connection between the Donbas separatists and Russian territory. Consequently, the protruding position of the Ukrainian forces and volunteer battalions at Ilovaysk caused them to be quickly overtaken and surrounded (F. Holcomb, 2017, p. 9). The defenders of Ilovaysk were given assurances that they could withdraw through a “humanitarian corridor”, but were still attacked during their retreat, causing close to 1000 casualties (Luhn, 2014). This incident constituted one of the most severe Ukrainian setbacks in that period and effectively stopped Ukrainian progress on the battlefield.

As Russian regular forces entered the fray, the conflict escalated to an even more dangerous level. Thus, both the Kremlin and Ukrainian authorities settled on a negotiated agreement to reduce the tension. The so-called “Minsk Accords” were signed on September 5 and involved a cease-fire, withdrawal of Russian troops, and provisions for increased autonomy for the separatist-controlled areas within Donbas (Sakwa, 2016, p. 179). However, the cease-fire was immediately broken. For

example, on September 29, a combination of Russian regular and separatist forces launched a substantial attack on Donetsk Airport. The ensuing fighting would last for many months and the persistent Ukrainian defense of the airport earned the defenders the nickname of “cyborgs at little Stalingrad”. Artillery and other forms of heavy firepower were used, but none of the parties were able to achieve decisive progress at the airport until Russian forces “explosively dropped the top floors of the new terminal onto the Ukrainian soldiers” on January 21, 2015 (Fox, 2019, pp. 5–9).

After the “Minsk Accords” agreement in early fall, Ukrainian forces largely refrained from further offensive operations and focused on fortifying along the existent frontlines. Additionally, new Ukrainian forces were raised, the volunteer battalions were better integrated into the Ukrainian Armed Forces, and the whole Ukrainian military system was significantly improved (The White Book of the ATO, 2017, pp. 33–34). The separatists, on the other hand, continued to try to improve their military situation and conducted aggressive operations, which can be exemplified by the above-mentioned attack on Donetsk Airport. While the Ukrainians had been able to conduct a form of maneuver warfare during the summer, and regular Russian forces had done the same in August and September, the fighting in Donbas became largely positional warfare in the fall of 2014 and early winter of 2015. Even sieges of built-up areas became a recurrent trait of this period (Fox, 2019, p. 12).

After a period with relatively static frontlines, January and February 2015 saw a significant increase in military activity on the separatist side. In particular, the separatist forces tried to seize the city of Debaltseve, which was an important Ukrainian railhead, and by forming a bulge in the frontline, this area was ripe for a Russian encirclement. Under pressure, the Ukrainian forces managed to withdraw most of their forces before they were encircled, but still endured casualties on their way out of Debaltseve (The White Book of the ATO, 2017, p. 36). However, although the separatists had thus captured an important piece of terrain, the operations had also been costly to them. Thus, both in the Kremlin and in Kyiv, the desire for a de-escalation and a stabilizing arrangement grew (F. Holcomb, 2017, p. 9). The belligerents signed the “Minsk II” agreement, which largely froze the frontlines in place and reduced the intensity of the conflict. Despite the cease-fire going into effect on February 15, separatist forces continued to attack the Debaltseve pocket and the fighting did not diminish until February 18 when Debaltseve fell (Czuperski et al., 2015, p. 5). However, while the “Minsk II” agreement did not stop the fighting in Eastern Ukraine, it reduced it to a steady grind. The withdrawal of heavy weapons, overseen by OSCE observers, reduced the potential of escalation; still, in 2017 alone, 441,336 violations of the cease-fire were observed (Käihkö, 2021, p. 45).

The Russian-backed insurgency in Donbas was conducted with a large variety of methods, but still had a largely "regular" form. As such, it was probably less reliant on hybrid and non-military means than might be perceived at first glance. A RAND analysis argues that:

> Although the conflict cannot be neatly separated, there was a brief but important period from May 26 (First Battle of Donetsk Airport) to August 24 (Russia's conventional invasion) in 2014, during which Russia employed a hybrid approach. (…) By late August 2014, these attempts visibly had failed, resulting in a conventional invasion by regular Russian units. Subsequently, Russia chose to turn the separatist forces into a conventional army mirrored on Russia's own force, which can be read as Moscow's verdict on the utility of hybrid approaches in Ukraine. Hybrid approaches did not disappear from the battlefield, just as information warfare did not cease to be employed, but they became relatively inconsequential to the large presence of conventional forces engaged in what became classical position and maneuver warfare. Ukraine is a case study not in pioneering new nonlinear approaches but in the failure of hybrid warfare to deliver the desired political ends for Russia (Kofman et al., 2017, pp. 69–70).

Consequently, the Russian intervention into Donbas is a relevant case for elucidating the Russian way of regular land warfare. In particular, the intervention by regular Russian forces in August 2014 and the operations in the fall of 2014 and the following winter are of notable interest. Finally, the separatist forces, largely led, trained and equipped by the Russian Armed Forces, would likely portray a version of how the Russian Armed Forces would conduct a similar operation.

The application of effects

Massive use of unguided tube and rocket artillery, combined with mortars and automatic grenade launchers, became the most important casualty inflictor during the war in Donbas. According to Ukrainian reporting, 85% of all casualties on both sides were from indirect fire (Karber, 2015, Chapter I). Consequently, the Russian preoccupation with indirect fires seemed to be very much present in Donbas in 2014 and onwards. Even from mid-July, heavy Russian artillery fire was directed from Russian territory across the Ukrainian border (Sutyagin, 2015). In other words, the Russian involvement in Donbas in the summer of 2014 was neither of a low signature nor easy to combine with a "plausible deniability" approach.

In fact, the Russian military aid to the separatists was aimed at building complete combined arms units, capable of taking on the Ukrainian Armed Forces, rather than an irregular guerilla force. For example, Russian tanks were soon distributed to the separatists, despite Russian claims that these

tanks were captured from the Ukrainian Armed Forces in Donbas. It seems that T-64 tanks, both from Russian stockyards and from captured tanks in Crimea, had already been delivered to separatist forces by June (Gri, 2015; A. E. Kramer & Gordon, 2015). An even stronger case for Russian supplements of tanks is the separatists' use of T-72 tanks. One Ukrainian author argues that:

> Considering the appearance of T-72 tanks in the combat zone, (…) could the pro-Russian separatists capture at least some tanks of this model from the Ukrainian military? The answer is simply no, they could not. The only place where Ukrainian T-72s were located in Donbass was the Central Base of the Tank Reserve in Artemovsk [Bakhmut]. The separatists never managed to capture it. Except from the base in Artemovsk, there were no other Ukrainian T-72 tanks in the Donbas. In Ukraine, T-72 tanks were and are in storage bases, in armored factories, and in some training units. Until December 6, there were no T-72s in the combat units of the Armed Forces of Ukraine (AFU) (Shirokorad, 2018, p. 171).

The Ukrainian forces even managed to capture a T-72B3 from the separatists in Ilovaysk. This tank was not Soviet, but a Russian upgrade, and it was also the primary MBT of the Russian Ground Forces at the time (Shirokorad, 2018, p. 171).

The separatist forces were also receiving artillery and air defense systems. For example, open-source analyses points to verifiable observations that "Grad" rocket launchers, "Gvozdika" self-propelled howitzers and towed artillery were received from the Russian Federation in June and July of 2014 (Hauter, 2022, pp. 217–224). Most notably, the downing of Malaysian flight MH17 has been thoroughly investigated and was reportedly conducted by separatist forces with a Buk air defense system provided by the Russian 53rd Anti-Aircraft Missile Brigade (Corder, 2023; *MH17 Verdict*, 2022). However, this is far from the only incident of separatist forces using sophisticated air defense systems. In the initial period of the insurgency, Ukrainian forces used air support with good effect. The Ukrainian advantage in air support was in fact one of the most important factors for the Ukrainian successes in early summer. However, in May, the separatists started to use Russian delivered air defense systems, and in May and June three Mi-24 attack helicopters, one Mi-8 transport helicopter, one Il-76 transport aircraft and an An-30 reconnaissance aircraft were downed by the separatists. In July, an additional An-26 transport aircraft and three Su-25 ground attack aircraft were brought down, effectively halting all Ukrainian air operations in Donbas (Fox, 2022, p. 8). In other words, the Russian support of the separatists of early summer of 2014 was aimed at making the separatist forces into a regular combined arms force, capable of symmetrical confrontation with Ukrainian forces. As such, they were not equipped to be an irregular force, exploiting asymmetrical approaches, or a mass of light infantry or militia. This indicates a Russian

emphasis on combined arms, utilizing modern weaponry, in order to survive in modern warfare. Light and irregular forces alone would not, in Russian eyes, be able to achieve their objectives in Donbas.

A source with first-hand observation of the separatist forces, albeit after the "Minsk II" agreement, reiterates this view of the separatist army as a regular combined arms force:

> Since I arrived [in Donbas] there haven't been any cases of large-scale CA [combined arms] warfare observed; however, when (…) separatist units were massed in their declared Training Areas they were assembled in a combined arms manner (*Respondent 21, Interview 1*, personal communication, 2021, p. 2).

Russian forces particularly started large-scale training of separatist forces after August 2014 and this increased the separatists' resemblance to Russian regular forces. Illustratively, the separatists established large regular formations in this period: the 1st and 2nd Army Corps of the Donetsk People's Republic (DNR) and the Luhansk People's Republic (LNR) respectively (bmpd [blogger], 2015; Nikonorov, 2015). Accordingly, the separatist forces became largely a prolongation of the Russian Armed Forces.

Both the Russian and separatist forces were characterized by their reliance on the battalion as the principal combined arms unit. According to one source, the separatist forces widely deployed battalion-sized combined arms units:

> When I see CA [units] assembled, it tends to be small (company plus or battalion minus) [units of] armour, IFVs and self-propelled guns grouped locally, (…) The command level [of these CA-units] are difficult to judge, to me it looks like Battalion level CA groups (*Respondent 21, Interview 1*, personal communication, 2021, p. 2).

While this source is open to the separatist use of combined arms units below the battalion level, McDermott states that: "the overall structure [of the separatist forces] came to mirror Russian battalion groups" (McDermott, 2015, p. 20). Official Ukrainian sources also observed this trend. According to them, when regular Russian ground forces intervened in Donbas in August 2014, they were organized as BTGs (Battalion Tactical Groups) (The White Book of the ATO, 2017, p. 31). Indeed, the Russian force, deployed along the Ukrainian border, consisted largely of BTGs (Sutyagin & Clarke, 2014, p. 9). The Russian force posture design did, in fact, necessitate the use of BTGs. Russian brigades and regiments consist of both contract servicemembers and conscripts, but the latter would be illegal to use outside of Russian soil. This creates a need to generate combat-ready forces without the use of the "conscript portion" of the unit. The Russian solution was to deploy the brigade as one

or two battalion-sized BTGs without the conscripts that would stay behind in the garrison. Thus, the BTGs needed to bring with them the necessary support to operate independently of the brigade or regiment (Sutyagin & Bronk, 2017, pp. 22–24). In other words, the BTG was not a common battalion task force, as it usually is in Western armies, but a brigade in function.

The use of BTGs had two important consequences. Firstly, the lack of an overarching brigade or regiment structure led to a decentralization of command down to the battalion level. Additionally, the low force density meant that the BTG largely operated independently from other formations, increasing decentralization. In other words, the BTG commander would have command responsibilities and resources at his disposal that are relevant at the brigade/regiment level (Karber, 2015, Chapter I). Secondly, as the BTG's maneuver element was only battalion sized, but was still expected to fill the role of the brigade, it would be vulnerable to casualties and aggressive maneuvering of the enemy. The BTG usually had all the elements to make them a complete and independent combined arms unit, such as artillery, air defense, EW and logistics, but lacked the robustness of a brigade or regiment. The small maneuver element, combined with a reduced command and control ability, would intrinsically make the BTG more sensitive to casualties and disorganization. According to one military analyst, the BTG might enjoy an overmatch in fires, air defense and EW over a US brigade combat team, but the inferiority in volume of maneuver forces would make the BTG susceptible to being "outmaneuvered" in a one-to-one engagement. The volume of maneuver forces in a traditional brigade/regiment structure would absorb the BTG's strikes, and, subsequently, maneuver towards the flank and rear of the BTG and "overload" its command and control capacity (Fiore, 2017). In Donbas, the weakness of few maneuver elements was largely compensated for by separatist and volunteer forces. These forces would hold the line while the Russian BTG administered effects on the opponent (Fiore, 2017). Consequently, the Ukrainian forces, using brigade formations, were not able to effectively exploit the BTG's main weakness in Donbas.

In addition to the traditional elements of Russian combined arms units, such as tanks, artillery and air defense, the fighting in Donbas also revealed an emphasis on other means. While not novel to Russian forces in any way, UAVs and electronic warfare systems were comprehensively used in Donbas. Not only did Russian and Russian-backed forces largely use these means, but they also experimented with and tested new equipment. As a source with first-hand knowledge of the fighting in Donbas explained:

> The apparent recent development in EW and UAVs in the Russian army have been echoed in the separatist forces, likely because they have been provided with such assets by Russia (*Respondent 21, Interview 1*, personal communication, 2021, p. 1).

Arguably, electronic warfare was extensively used in Donbas. In response to several unexplained engagements of Ukrainian forces far from the frontline, one source stated that:

> It was clear that in this case the firing data were received in advance. The question was: from where? The answer came pretty quickly. In early July, Ukrainian army intelligence, as well as attentive local residents of Donbas, very clearly registered rather specific military equipment in the arsenal of the militants [separatists], which they apparently later used, both for "electronic attacks" on OSCE UAVs, and for performing other tasks in the field of electronic intelligence and electronic warfare (…). This included reconnaissance of Ukrainian troop positions. [The reporting] was about specialized EW equipment, which were not only observed during movement or redeployment, but also in operation (Shirokorad, 2018, p. 197).

This source mentions several specific types of electronic warfare equipment that were seen in Donbas. These include the “Leer-2” light EW system, the “Rtut’-BM” proximity fuse jammers, and different types of the R-330 automatic EW system (Mandat, Borisoglebsk-2 and Diabazol) (Shirokorad, 2018, pp. 196–210). These assets would enable the separatists to conduct sophisticated electronic warfare tasks, such as jamming of GSM mobile phones and GPS satellite navigation systems, and triangulate radio stations (Kjellén, 2018, pp. 43–55). Perhaps a plausible explanation for the Russian emphasis on developing and introducing electronic warfare equipment could be its ability to strike deep. The captured invasion plans from 2015, mentioned earlier, describe a “massive electronic attack” on the first day of the operation. Additionally, this electronic attack is described as an integrated part of the shaping “concentrated fire strike” operation, employed before the main attack (*Poyasnitel’naya Zapiska Gruppirovki Voysk «Sever»*, 2015, pp. 19, 22). In other words, similar to, for example, cruise missiles and UAVs, electronic warfare capabilities are able to identify and engage targets far into the depth of the enemy’s defensive system. Interestingly, as the Soviets saw the new technologies of flight and motorization primarily as enabling deeper penetration in the inter-war period (deep operations theory), the Russians today see the “new” technologies of UAV and electronic warfare as enabling deeper penetration of fires.

Additionally, while not strictly part of the Western understanding of electronic warfare, cyberwarfare is seen as a subcategory of “electronic attack” in the Russian understanding (Kjellén, 2018, pp. 22–

23). In Donbas, the Russians used cyberwarfare to infiltrate the Ukrainian artillery fire direction software. While there is little reporting on cyberwarfare used on the battlefield in Donbas, this is a case in which cyberwarfare had significant consequences for the combatants. The Russian hacker group "Fancy Bear" managed to insert malicious software into the Ukrainian application used for directing mortar and artillery fire resulting in the coordinates of Ukrainian units passing into enemy hands. Russian artillery was then able to attack Ukrainian positions and push them out of the area of operations (Fox, 2022, p. 19; Shirokorad, 2018, pp. 206–207). Consequently, this indicates that Russian forces continue to put emphasis on capabilities that can exploit an opponent's reliance on the electro-magnetic domain and see these capabilities as an integral part of combined arms warfare.

As mentioned above, the other means particularly emphasized by Russian and Russian-backed forces was the extensive use of UAVs. Phillip A. Karber argued that:

> Ukraine is the first conflict in which UAVs have been present on both sides in significant numbers and they can have a dramatic impact (…). The first use of drones in this conflict was observed in May 2014, when the Russian "separatists" began using small fixed-wing tactical UAVs. At first of these were more of a novelty than a nuisance. However, from mid-July through the end of the Russian summer offensive in early September, Russia flooded the area with at least five types of drones, each operating at a different altitude with complementary strengths and some notable weaknesses. The Russians are employing no less than 14 different drone designs – 13 fixed wing and at least one quad-copter design – over the Donbas in varying ranges and with differing sensor suites, some launched from the "separatist" areas and some from Russia proper (Karber, 2015, Chapter I).

This elaborate use of UAVs was combined with indirect fires, creating a system that reduced the time between observation and engagement significantly. This system was described as: "the tight coupling of Russian reconnaissance with indirect-fire capabilities, creating a highly responsive sensor-to-shooter system" (Fox, 2017a). In many ways, this description matches the Soviet and Russian concept of "reconnaissance-fire complex" (the tactical version of the reconnaissance-strike complex), in which the effectors and sensors are put together in a real-time and quasi-automatic targeting network. However, despite this system being highly responsive in the context of time spent between observation and engagement, it still seemed very centralized. While accepting the ability to quickly mass substantial firepower, Karber points to three primary weaknesses of the Russian targeting system. Firstly, the planning phase before setting up sensors and effectors in a system seemed lengthy. Secondly, after the system was put in effect, the ability to adjust its composition seemed

low. Finally, and likely as a consequence of the two other weaknesses, dynamic targeting of mobile targets was difficult (Karber, 2015, Chapter I). Consequently, the system was responsive when set up, but where, when and how the system was to be established appeared to be a centralized decision.

This Russian system of UAVs, indirect fire capabilities and automated command and control was thus largely a stand-alone system. In other words, it was not extensively integrated with other systems on the battlefield (Grau & Bartles, 2016a, pp. 33–34). For example, this system of fire destruction of the enemy was not intimately integrated with the maneuver, which was supposed to exploit the result of the strike, or with joint assets such as air support (See for example Fox, 2017a). Consequently, the Russian targeting system, whether it was a full-blown reconnaissance-fire complex or not, was responsive and effective when it was set up; however, the process of establishing the system was centralized and the system itself did not seem to be carefully integrated with other parts of the Russian combined arms system. In other words, it was superimposed on the general combined arms system, creating the distinct "system-over-system" appearance.

However, the Russian reconnaissance-fire system had a powerful effect on Ukrainian forces. An example of the effectiveness of this targeting system is the Russian fire strike at Ukrainian mechanized forces at Zelenopillya on July 11, 2014. According to Karber:

> Ukraine deployed the elements of four brigades and a dozen light infantry battalions strung out between the separatists' positions in the Donbas and the Russian border in an attempt to close off the insurgent resupply lines. Starting in mid-July, Russia launched a series of intense fire strikes employing long-range artillery and multiple rocket launchers, successively engaging Ukrainian units over a six-week period in 53 of attacks on 40 different positions. One of the most dramatic was at Zelenopillya, where a combination of artillery and MLRS, with the latter employing top-attack munitions and thermobaric warheads, caught two Ukrainian mechanized battalions in the open (Karber, 2015, Chapter II).

This attack commenced shortly after UAVs had arrived overhead and were fired from positions on the territory of the Russian Federation, effectively avoiding Ukrainian counterbattery fire. The attack left "thirty Ukrainian soldiers dead, hundreds more wounded, and over two battalions' worth of combat vehicles destroyed" (Fox, 2017b). These types of attacks proved detrimental to Ukrainian combat ability and morale, and paved the way for the upcoming Russian counter-offensive in August (Karber, 2015, Chapter II; Woodford, 2017). Interestingly, this massive use of area-effect weapons, in a short duration and into the depth of the enemy defenses, fits the *udar* approach. Similarly, just before the Russian invasion with regular forces on August 24, a large fire strike, conducted by 200

Russian artillery pieces, attacked targets throughout Donbas. Immediately afterwards, the Russian maneuver forces, consisting of 8 BTGs, exploited the effect of the strike (*Analiz Vedennya Antiterorstichnoi Operatsii*, 2015, p. 2; The White Book of the ATO, 2017, p. 31). Thus, this behavior is also largely consistent with the concept of *udar*. In the battle of Debal'tseve, a similar approach was used, and that time up to 180 tube artillery pieces and 60 rocket artillery launchers participated in the fire strikes (Fox, 2017a; The White Book of the ATO, 2017, p. 36). Interestingly, the proportion of rocket artillery, compared to traditional tube artillery, has increased significantly in the Russian Ground Forces (Karber, 2015, Chapter I). As rocket artillery is able to employ more firepower, in a shorter duration, and usually at greater depth, it is a more suitable weapon to achieve *udar*.

Consequently, the extensive use of UAVs made the Russian and separatist forces able to observe targets in the depth of the enemy defenses. Instead of firing at potential targets without observation, which was traditionally necessary to engage targets in the depth, it was now possible to find and engage targets throughout the enemy's tactical defensive zone simultaneously and ubiquitously. This ability, combined with large volumes of fire from tube and rocket artillery, would allow the near-simultaneous fire destruction of multiple targets in the depth of the enemy's defenses, creating a shattering shock effect. In other words, these developments indicate a Russian way of regular land warfare that emphasizes *udar*.

The conceptual view of space

The combination of UAVs, artillery and electronic warfare increased the ability to observe and strike targets in the tactical depth, and also increased the ability to maneuver fire, instead of troops, into the depth of the enemy's defenses. Thus, the above-mentioned lack of maneuver forces in the Russian BTG-system became perhaps less of a disadvantage. The large proportion of artillery, relative to maneuver forces, gave the BTG an ability to place great firepower behind the enemy's frontline. Consequently, the more traditional penetration by a maneuver of mechanized troops was often substituted by a maneuver of artillery fire.

While long periods of the conflict in Donbas have been characterized by static frontlines, and thus not large-scale penetrations, there were some periods characterized by a fluid and open battlefield. In particular, the period after the intervention of regular Russian forces in mid-August 2014 and immediately before the "Minsk II" agreement the following winter witnessed several examples of offensive maneuvers by Russian regular forces. For example, both the battle of Ilovaysk and Debal'tseve displayed Russian use of fire strikes, with a following aggressive mechanized maneuver aimed at surrounding Ukrainian strongholds in urban areas (M. Cohen, 2016, p. 7; The White Book of

the ATO, 2017, p. 36). Importantly, it seems that there was a pattern in Russian operations to avoid urban fighting with their regular forces. Rather, Russian forces would advance in open terrain around towns and cities, creating cauldrons, and let forces from the DPR and LNR deal with the Ukrainian forces inside the built-up areas. In other words, the Russian forces would establish sieges of Ukrainian urban areas, using proxy forces supported by Russian fire support, to clear out the Ukrainian defenders. This approach was seen in the battles of Donetsk Airport (Fall 2014), Ilovaysk (August 2014) and Debal'tseve (Winter 2015) (Fiore, 2017; Fox, 2017a, 2022, pp. 9–15). Thus, while penetrations were often, but not always, slow and grinding, they were used to avoid even slower and more grinding urban combat. It should be noted that, at least in the case of Ilovaysk, the Russian advantage of attacking out of the territory of the Russian Federation, combined with cross-border artillery fire, made the job of enveloping and isolating the Ukrainian forces easier. After the "surprise" intervention of August 2014, Russian efforts to encircle Ukrainian strongholds became slower and more difficult.

The alleged invasion plans of Eastern Ukraine, surfacing in the summer of 2015, also point to a significant emphasis on penetration. In short, the documents describe the plans for a part of the invasion force, the "Northern Group of Forces", mostly based on units from the Western Military District and the VDV. This group of forces is then divided into two smaller groups (*Poyasnitel'naya Zapiska Gruppirovki Voysk «Sever»*, 2015, pp. 24–25). After initial strikes with ballistic missiles, artillery and electronic warfare means, the first subgroup was scheduled to move from assembly areas in Rostov Oblast and into attack positions in southern Donbas; they would then attack towards the cities of Dnipro and Poltava. The second group had their assembly area in Belgorod Oblast and was scheduled to attack across the border towards Kyiv and Kremenchug eight days later. After the subgroups had reached their intended objectives, large security zones would be established, effectively fragmenting and isolating Ukrainian forces east of the Dnipro so they could be subsequently destroyed in detail by artillery and air support. The most striking element of this plan is the long distances these forces were intended to advance within a relatively short time span. The southern subgroup was planned to advance 300-500 km and establish a security zone in just five days (*Poyasnitel'naya Zapiska Gruppirovki Voysk «Sever»*, 2015, pp. 19–21). According to the plan, this extreme rate of advance was to be achieved by:

> (…) bypassing built-up areas and without entering into combat with Ukrainian armed formations and extremist detachments (…). For reconnaissance, use UAVs. Destroy small enemy groups with immediate fire [on the march], larger groups will be isolated and destroyed with artillery fire without entering into direct combat. Flank security will, by

> artillery fire from temporary firing positions, defeat the enemy and prevent delays of the main force. Spetsnaz and the BTGs' forward detachments will capture and hold bridges across the Volcha and Samara rivers until the main force arrive (*Poyasnitel'naya Zapiska Gruppirovki Voysk «Sever»*, 2015, pp. 22–23).

Such high speed and long-range maneuvers, relying on quickly bringing overwhelming firepower to bear in order to brush away resistance, is surely dependent on a high degree of mechanization. The firepower and mobility, inherent in armored combat vehicles, allow an instantaneous transition from high-speed march to engaging the enemy. Moreover, the fighting in Donbas revealed several developments in the protection of mechanized vehicles. Explosive reactive armor (ERA), and to some extent active protection systems, increased the survivability of tanks (Karber, 2015, Chapter I). However, an increasingly lethal battlefield, resulting from the combination of elevated sensors, large volumes of artillery fire, including cluster munitions, and a ubiquitous dissemination of anti-tank weapons, significantly hampered the movement and offensive potential of mechanized equipment. In particular, IFVs, sporting less protective armor than tanks, became vulnerable (Karber, 2015, Chapter I). However, the Russian preference for mechanization seems to have been continued in Donbas. Even the separatist forces, often trained and equipped by the Russian Armed Forces, were largely mechanized. A source with first-hand experience of the Donbas after 2018 observed that:

> Tanks and artillery are regarded as battle winning assets and held back [in Training Areas] both for protection and to be responsive. (…) Historically the Russian intervention in Ukraine was mechanized, and in the present [after 2018] there are still large amounts of BMP/BTR and trucks in operation, suggesting that despite the fixed defensive lines that currently characterize the war in the Donbas, mechanization is still regarded as important (*Respondent 21, Interview 1*, personal communication, 2021, pp. 1, 5).

Additionally, the seeming avoidance of urban combat of Russian forces, or at least the use of separatist forces to fight in this environment, also indicates an emphasis on mechanization. Mechanized forces are better suited for combat in open terrain outside the built-up areas.

With the available sources, it is hard to discern to what extent the Russian and separatist forces were following procedural tactics. Moreover, there are few indications of procedurally created units in the Donbas. On the contrary, the most used entity, the Battalion Tactical Group, seems to be largely created on an *ad hoc* basis, without any standard organization and often constituted from many different units. For example, in February 2015, as one of many examples, a battalion-sized tactical group was formed with forces from the 8th and 18th Guards Motor Rifle brigades, 25th Spetsnaz

Regiment, and the 232nd Rocket Artillery Brigade, which is not strictly necessary – all capabilities necessary to create a BTG exist within a motor rifle brigade (Sutyagin, 2015, p. 7). According to this source, the primary reason for this practice was the shortage of available contract personnel in each of these brigades. However, while this practice could indicate that Russian tactics had become less "procedural", the opposite might also be true. A prerequisite for creating a combined arms unit on an *ad hoc* basis would be the inter-unit interaction being largely "procedural". Deep unit cohesion, involving comprehensive collective training and inter-unit relationships, which is imperative in many Western military cultures, cannot develop without a long-lasting unit composition. Consequently, the practice of creating *ad hoc* battalion tactical groups may be viable to the Russians only because the interaction within the unit is expected to be largely based on procedures and norms.

The low force densities of the Donbas conflict made distinct echelonment of the Russian and separatist forces less relevant. Still, two possible examples might be the use of consecutive trench lines in the positional stalemate after the "Minsk II" agreement, and the arrangement of the two separatist army corps as a first operational echelon in Donbas and the Russian 8th Combined Arms Army, located in Rostov Oblast, as a second (*The Current Situation JFO*, 2020, p. 2). However, both these examples might have happened naturally and not been the result of a deliberate approach. The arrangement of a defense in depth is of course not specific to the Russian way of warfare. However, the extensive use of field fortifications and minefields could be a distinctive Russian preference. One source who observed the frontlines in Donbas stated that:

> Currently the focus of fortification seems to maintain the cohesion of the long frontline, and exploiting terrain (urban areas, mine spoil heaps, treelines). Fortifications are "WW1-esque" with deeper fighting trenches linking strongpoints at the front, with shallower (waist height) support trenches leading to the rear. Mines are widely used to reinforce positions and compensate for low troop density/buy time to move up reserves (*Respondent 21, Interview 1*, personal communication, 2021, p. 5).

Consequently, while clear-cut examples of echelonment are few, Russian and separatist forces seemingly preferred well-fortified and largely static positions. The static character of the Russian and separatist forces, relying heavily on their fortifications, was also visual on the offense. The "Minsk II" agreement denied the use of heavy weaponry at the front, making typical Russian offensive use of heavy firepower more difficult. The same source described Russian efforts to take new ground as:

> We do see strongpoints of a sort when a new trenchline is pushed out into the grey zone roughly perpendicular to the main line. [This is] usually along a terrain feature such as a

> treeline, road or ridge, (…) [and] then being expanded into a T shape position, often with a bunker, in order to cement this territorial gain (*Respondent 21, Interview 1*, personal communication, 2021, p. 5).

Consequently, when mechanized warfare became less suitable (due to provisions in the "Minsk II" agreement), Russian and separatist forces relied heavily on static fortifications. The Russian reliance on heavy firepower might possibly also compel them to put greater emphasis on protecting themselves from the effects of the enemy's firepower.

The conceptual view of time

Overall, Russian and separatist behavior during the fighting in Donbas was largely adherent to the traditional Russian leadership culture. One source described Russian and separatist behavior as: "[Personnel] are used in a conscript army style, where orders are delivered by trained/empowered officers and followed rigidly by low level troops", and stated that the Russian way of warfare constitutes "Rapid employment of templated drills used to generate operational tempo/momentum rather than the more 'intellectual'/mission command approach aimed for by Western militaries" (*Respondent 21, Interview 1*, personal communication, 2021, p. 1). Even the tradition of using so-called "barrier troops", units that follow the regular forces to stop un-ordered retreats and deserters from leaving the battlefield, was reported in Donbas (Sutyagin, 2015, p. 9). However, the use of BTGs on the fragmented battlefield of Eastern Ukraine demanded increased de-centralization and independent action. Consequently, while regimental command was the first level at which Soviet officers were allowed some freedom of action and expected to conduct more independent planning, it seems that this has now moved down to the battalion level in the Russian Ground Forces (see Donnelly, 1988, p. 216). This shows the underlying tension between the authoritarian Russian military culture and their emphasis on swift and offensive maneuvers by mechanized forces. This is even more accentuated by the use of independent BTGs, compared to the earlier use of regiments within the structure of a division.

The Russian inclination for surprise, and thus secrecy and deception, also manifested itself in the Donbas conflict. For example, in August 2014, during the intervention of Russian regular formations, Russian authorities continued to deny any involvement in the fighting in Donbas. However, a fire strike by 200 artillery pieces, and then a subsequent maneuver consisting of eight mechanized BTGs are impossible to hide. Thus, a few days later the Russian invasion was known to the world (The White Book of the ATO, 2017, p. 31; "Ukraine Crisis," 2014; Walker et al., 2014). Notwithstanding, during the first few hours, or even days of the operation, Ukrainian military leaders, and thus

Ukrainian political leadership, failed to comprehend the scale and intent of the Russian actions. Ukrainian operational commanders simply did not believe the initial reports from the battlefield about the approaching Russian convoys of armored vehicles (M. Cohen, 2016, p. 6). Consequently, Russian secrecy and deception measures, including the denial of any Russian forces in Donbas, were aimed at, and succeeded in, postponing Ukrainian countermeasures. This led directly to the catastrophe of Ilovaysk, in which hundreds of Ukrainian soldiers were lost. In other words, the Ukrainians were surprised.

When questioned on the extent of Russian use of deception, a source with first-hand experience of the Russian and separatist behavior responded that it was used:

> Very widely. Due to the static nature of the conflict and wide use of UAVs, static separatist vehicles typically have overhead camouflage or are kept in the numerous large barns/warehouses near the frontline. Decoys are observed, and we have recently seen attempts to disguise BM21 MLRS as normal trucks. Deception via the media has also been used, with separatists claiming that they have invented new EW complexes in an effort to conceal their use of Russian EW kit (*Respondent 21, Interview 1*, personal communication, 2021, p. 7).

The Soviet view of surprise demanded a subsequent swift and aggressive exploitation of the initial period of war. This usually requires high strategic mobility and combat readiness – without it, the defender might be able to mount effective countermeasures before the attacker is ready to launch the operation. In Crimea in February 2014, the Russian forces seemed adept at quickly achieving force superiority and then launching an invasion. In Donbas, the Russians were also able to deploy an invasion force of significant size on Ukraine's eastern border; however, there was no full-scale invasion. While the difference between Donbas and Crimea might be the result of different approaches (a conventional invasion in Crimea and a proxy war in Donbas), it may also be caused by the lack of sufficient preparations. An invasion of Donbas, which would be larger and lack the "Trojan Horse" opportunity presented by the Russian naval presence in Sevastopol, would demand significantly more substantial preparations. The timeline for the events in Donbas indicates that the Russian forces were not ready for an intervention, whether hybrid or regular, at the time they started their operations in Crimea. For example, one of the first decisive actions by the separatists in Donbas was the assault on police stations and other security force buildings to seize firearms on April 6, 2014, more than a month after the operation in Crimea (Balaban et al., 2017, pp. 33–34; The White Book of the ATO, 2017, p. 20). These assaults, mainly by unarmed persons, would expectedly be unnecessary in the case of Russian support. In any way, the long period between the invasion of

Crimea and these incidents indicates that it was not a deliberate Russian operation from the onset (Sakwa, 2016, pp. 148–150). Additionally, if the ousting of Yanukovych, happening on February 22, was a trigger for the Russian operation, it is difficult to see how the Russians could mount an operation such as the invasion of Donbas at such short notice (Balaban et al., 2017, pp. 31–32). Consequently, there are on the one hand, indications of contingency planning – the invasion of Crimea would not be possible without it – and on the other, indications of at least some time between the start of the protests in Donbas until substantial Russian involvement. Thus, if there is a Russian emphasis on surprise and the initial period of war, there should have been a stronger effort to take advantage of the opportunities in early March 2014 if the operation was pre-planned. In other words, the development of events in Donbas points to a spontaneously originating rebellion that the Kremlin supported and exploited.

In any case, if a full-scale invasion was contemplated, Putin either "flinched" or the Russian forces were not ready early enough to exploit the initial period of the conflict. On the other hand, if a covert hybrid approach was a deliberate choice, the Russians discovered that this approach was insufficient in reaching their goals. Due to the lengthy nature of a hybrid approach, the Ukrainians were able to employ effective countermeasures. Both the transfer of regular Ukrainian units to the Donbas area as part of the ATO operation, and the spontaneous creation of several "volunteer battalions" increased the Ukrainian military potential in Donbas. Additionally, the Ukrainian air force, initially providing air support to Ukrainian forces with impunity, increased this potential (The White Book of the ATO, 2017, pp. 22–24). After the ATO became increasingly effective, the Russians were forced to ramp up their support of the separatists. Initially, the separatists were provided with heavy weaponry such as tanks, artillery and air defense systems. This support was not enough to stop the Ukrainian offensive, even when combined with Russian cross-border artillery fire and considering the weak and chaotic state of the Ukrainian military and political leadership. Consequently, in August 2014, Russian regular formations needed to intervene directly to avoid a collapse in the separatist forces. Despite their shortcomings, Ukrainian forces were able to mount effective resistance; for example, in the battles of Donetsk Airport and Debaltseve, prepared Ukrainian forces were apparently difficult and costly to defeat. Thus, while a full-scale Russian invasion could still succeed after April 2014, this would likely involve heavy casualties and a long campaign. After that window of opportunity had closed, the Ukrainians had deployed substantial forces to Eastern Ukraine and started mobilization of the country. Consequently, in the Donbas case, an important lesson for the Russians was surely that the initial period of a conflict, such as March and April of 2014, is the only period in which ambitious gains can be achieved with little effort. Crimea on the other hand, gave an example of a successful

exploitation of the initial period of war. A hybrid approach, involving covertly supporting a rebellion, was evidently manageable for Ukrainian authorities.

However, the Russians also realized that to be able to take advantage of the initial period of a conflict or seize an emerging opportunity, significant combat readiness and strategic mobility would be required. From 2014, substantial forces were deployed at the eastern border of Ukraine. However, having large forces deployed to the field, ready to conduct operations in Donbas or other areas of Eastern Ukraine, has been costly and at the limit of what the Russian Armed Forces can sustain (F. Holcomb, 2017, p. 9; Sutyagin & Bronk, 2017, pp. 32–39).

Summary

The conflict in Donbas from 2014 and onwards has had a considerable regular character. Very early in the conflict, Russian forces started to equip and organize the separatists into regular units, which would make them capable of symmetric confrontation with Ukrainian forces. The covert and irregular, and thus less robust, approach in the first few months of the conflict was quickly substituted by a conventional combined arms approach. Moreover, the primary combined arms unit, both in the Russian regular and separatist forces, was no longer the regiment or brigade, but the battalion. Naturally, this change caused some degree of decentralization of command in Russian forces. However, it also increased the proportion of combat support in relation to maneuver units compared to a traditional brigade/regiment structure. This low ratio of maneuver forces, combined with low force concentrations on the battlefields of Donbas, put heavy strain on Russian forces. However, territorial control, provided by separatist forces, mitigated some of these disadvantages.

Two categories of means seemed to be of particular interest to the Russian forces (see table 5). Firstly, electronic warfare was widely used, both by the regular Russian forces and the separatists. Electronic warfare provided the ability to observe and engage targets in the depth of the enemy's defensive system. Secondly, UAVs were introduced in large numbers and of many types. These were largely used for reconnaissance and target acquisition. The UAVs' ability to observe targets in the depth, and thus increase the artillery's ability to strike targets throughout the Ukrainian defenses, was a significant improvement. Earlier, when deep artillery concentrations had to be executed unobserved and thus often at potential targets, deep fires were less effective. Consequently, both electronic warfare and the combination of UAVs and artillery increased the ability to place effects beyond the frontline and into the tactical depth of the enemy's defensive system, which in turn assisted the application of *udar*. As such, in Russian eyes, these tools of warfare would increase the value of deep fire strikes (*udar*) and thus also support penetration.

Element of analysis	Characteristic	Observations
Application of effects	**Centralization**	More independence to lower (battalion) command levels (see also "Combined Arms).
	Combined Arms	-The battalion (in the form of a BTG) was the primary independent combined arms unit. Also the separatists were largely trained and organized to function as BTGs. -The fire destruction system (reconnaissance-fire complex) operated partially as an independent system, giving the overall Russian combined arms system a "system-over-system" appearance.
	Udar	Widespread use of UAVs and electronic warfare to observe and engage targets in the depth of the enemy's defensive system showed an emphasis on *udar*.
Conceptual view of space	**Penetration**	UAVs and electronic warfare assisted the maneuver of fires, instead of troops, to penetrate into the depth of the enemy defensive system (see also "*udar*").
	Mechanization and mobility	The Russian, but also the separatist, forces were largely mechanized. However, when mechanized warfare became less possible (due to provisions in the "Minsk II" agreement), Russian and separatist forces relied heavily on static fortifications.
	Template tactics	---
	Echelonment	There were few, if any, examples of deliberate use of extensive echelonment.
Conceptual view of time	**Order-based command**	The case showed an increasing gap between the need for decentralized leadership (see "centralization") and the authoritarian Russian military culture.
	Surprise	Russian strategic mobility, available combat-ready forces and extensive secrecy enabled surprise on several occasions.
	Initial period of war	Because the initial period of war (March and April 2014) was not exploited, Ukraine was able to introduce countermeasures; thus, later Russian operations became costly and yielded little.
	Aktivnost'	---
Novel characteristics		-The case showed extensive use of electronic warfare and UAVs -Russian forces tried to solve the problem of attrition in urban combat by bypassing built-up areas and using auxiliary forces within the urban terrain.

Table 5 Summary of the Russian intervention into Donbas from 2014.

3.4 The 2022 Russian Invasion of Ukraine

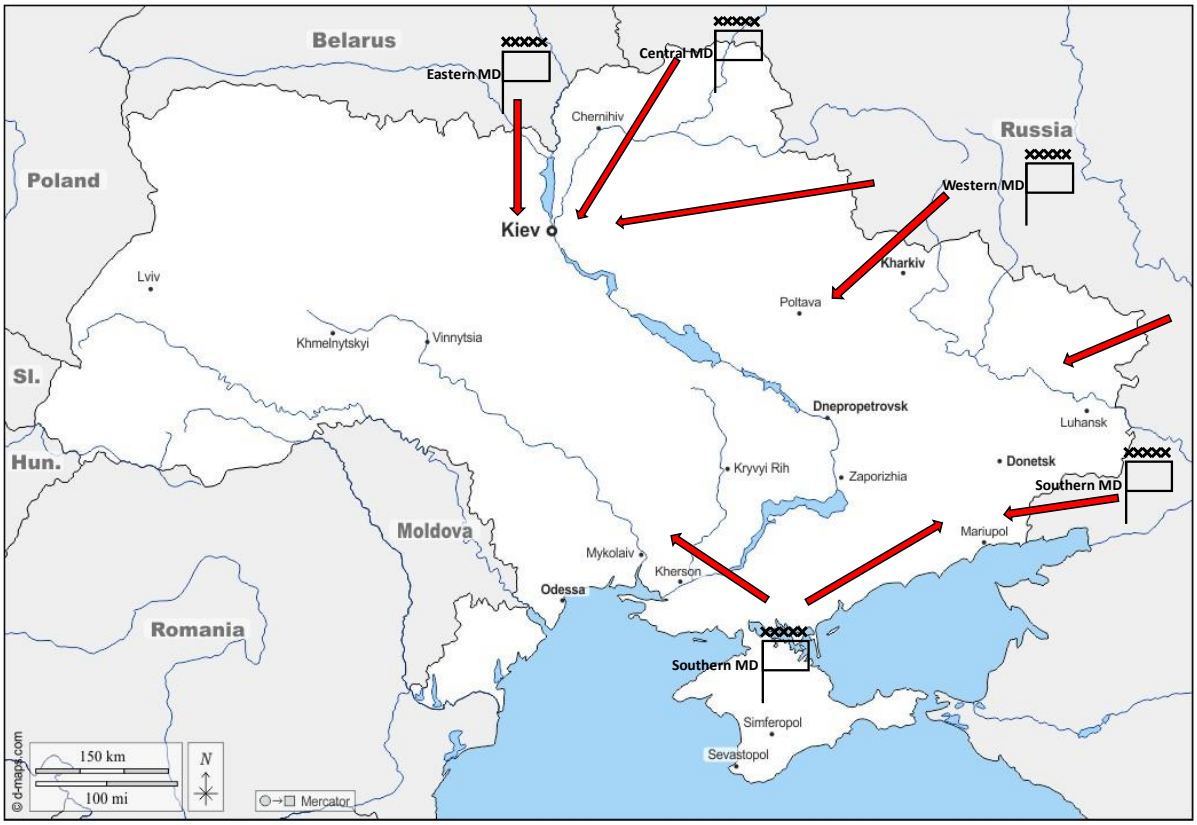

Figure 7 Map of Ukraine. Attack directions during the initial phase of the invasion are inserted. Original map from d-maps (https://d-maps.com).

Background

At the time of writing, the war between Ukraine and the Russian Federation is ongoing. Consequently, analyses of this war are characterized by the same challenges that are pertinent to all research on war and warfare. The data is uncertain, fragmented and reliant on the warring parties. Additionally, deception and secrecy, aimed at deceiving the opponent, also increases the uncertainty of the information. For example, both parties in this war have released inflated numbers of enemy casualties and destroyed equipment while keeping their own numbers secret or giving clear underestimates. Despite the existence of governmental and independent (OSINT) intelligence organizations who release their own assessments, it is notoriously difficult to give credible casualty numbers (Cooper et al., 2023). Another example is the way in which Ukrainian forces largely deceived their Russian opponents and the public into believing that the Kherson offensive was the only offensive during the fall of 2022. The Kherson offensive was launched August 29, but more than

a week later, on September 6, Ukrainian forces launched another offensive in Kharkiv oblast, apparently taking the Russian forces by surprise (Dylan et al., 2022). However, often, but not always, the ending of a war will increase the amount and validity of available information because actors have fewer incentives to keep the information from the public. Thus, as the war between Ukraine and the Russian Federation has not ended and the 2022 Russian full-scale invasion is still recent, the informational basis for the case study in this subchapter is expectedly uncertain. On the other hand, there are few other events that can reveal as much about the Russian way of regular land warfare than their behavior in a conventional war. Russian military theoretical literature, for example, is largely written by "agents" of the Russian way of warfare and thus may not deal with its fundamental characteristics because this is seen as self-explanatory. Further, field manuals often contain normative provisions of how the Russians envisage or want to conduct combat – they reveal, to a lesser degree, the strengths and weaknesses of the Russian Armed Forces. Consequently, while there are sound reasons for reservations about the validity of the informational basis of this case study, it is hard to imagine any better source for elucidating the Russian way of regular land warfare. The 2022 Russian full-scale invasion of Ukraine directly shows the Russian way of regular land warfare through large quantities of behavioral data. Finally, the case study includes the war period until the September 2022 partial mobilization.

As the 2022 Russian invasion of Ukraine is still recent to the writing of this thesis, well-sourced publications are few and contain uncertain information. The number of sources overall is high, but their validity is questionable. Added to this, it is not straightforward to distinguish credible sources from those that are not. This case study takes advantage of the suitable sources that indeed are available. The most important of those are analyses from the Institute for the Study of War (ISW), the Royal United Services Institute (RUSI), and Michael Kofman, published on the "War on the Rocks" blog. These are perceived as credible for two reasons: their military analytical capability is in-depth and informed, and, for the latter two, they have regularly travelled to Ukraine and collected information (see for example Kofman & Evans, 2022c; Watling & Reynolds, 2022a, p. 1). Thus, they have not solely relied on content that has been released to social or public media, which is often tightly controlled by the parties to the conflict. Additionally, in this thesis, the publications from these sources are mainly used for their "observations" of Russian behavior. As they partly rely on field research in Ukraine, they contain detailed information of a military nature that would otherwise have been inaccessible to this thesis. Other noteworthy sources are Russian and Ukrainian reports, and some Russian documents and field manuals that has been captured or ended up in the possession of Ukrainian forces. These will be presented as they appear in the text.

The armed conflict between Ukraine and the Russian Federation started in 2014 with the Russian invasion of Crimea. In Donbas, there has been fighting continuously since 2014, making the 2022 full-scale invasion a continuation of this war. However, while the war had been limited to Eastern Ukraine up until February 2022, the full-scale invasion threw Ukraine into an existential war of survival. Arguably, the prelude to the 2022 invasion of Ukraine had started already in March and April 2021. At that time. there was a massive build-up of forces along the Ukrainian border in addition to the forces already permanently deployed. The permanent forces included the 8th and 20th Combined Arms Armies, moved to the Ukrainian border in 2015-2016, and the 1st and 2nd Army Corps (from DNR and LNR respectively), which were under the control of the 8th Combined Arms Army (Bowen, 2022a, p. 2). This force, in addition to forces in Crimea, reportedly amounted to 87,000 Russian soldiers alone (Bielieskov, 2021, p. 3). The build-up of forces in March-April 2021 included the 41st and 58th Combined Arms Armies and the 7th, 76th, and 98th Airborne Divisions. In the summer of 2021, an estimated 12,000 soldiers were withdrawn, but both the majority of the forces and infrastructure were left in place (Bielieskov, 2021, p. 3). Following this in October 2021, the Russians began a second build-up at the Ukrainian border. An incremental build-up continued and was partly conducted in the context of the Zapad-21 strategic exercise in September 2021 and the Allied Resolve 2022 exercise with Belarus in February 2022 (Bowen, 2022a, pp. 1–2). At the launch of the invasion on February 24, 2022, an estimated total of 150,000 to 190,000 soldiers were deployed along the borders of Ukraine. Both Russian ground forces, VDV and naval infantry, deployed in approximately 120 BTGs, and paramilitary forces such as *Rosgvordiya* and DNR/LNR militia, are included in that number (Bowen, 2022b, pp. 1–2; Jones, 2022, p. 6). The 120 BTGs constituted a large part of the available Russian regular forces – probably more than 70 percent (Axe, 2022c).

The first seven months of the 2022 Russian invasion of Ukraine, the period included in this case study, can be broadly divided into three phases with different Russian goals in each of them. These phases will be presented in the paragraphs to follow. Firstly, the initial phase of the operation involved a Russian multipronged attack, aiming for objectives deep inside Ukrainian territory. While there is no way to verifiably know the Russian strategic goals, these can be indicated from Russian behavior in the different phases of the operation. According to information obtained by RUSI, the initial phase of the operation was planned to consist of high-speed penetrations to achieve two general purposes. Firstly, Russian forces tried to reach politically and economically important objectives and take control of them. These objectives included the capital and the Ukrainian nuclear power plants (Chernobyl, Zaporizhzhia, and the South Ukrainian NPP). Secondly, Russian forces aimed to fix the bulk of the Ukrainian Armed Forces in Donbas and subsequently destroy them (Zabrodskyi et al., 2022, pp. 8–9). This is echoed by statements by Colonel V. Shvalyuchinskyi of the

National Defense University of Ukraine. According to him, “the actions of the Russians in the east tried to fix the main defense forces and create conditions for successful operations in other directions” (Shvalyuchinskyi, 2023a slide 14), and that:

> Judging by the nature of the Russian actions, it can be assumed that the decisive actions during the implementation of the fifth operational task were the capture of our capital and possibly several other administrative regional centers. Our nuclear power plants were also not left without attention (Shvalyuchinskyi, 2023a slide 29, 29.1).

A final indication of the Russian initial aim of deep penetrations is the 2022 invasion’s similarities to the leaked invasion plans of 2015 (*Poyasnitel’naya Zapiska Gruppirovki Voysk «Sever»*, 2015). These similarities will be explained in the “Conceptual view of time” section of this subchapter.

The initial phase of the invasion started early morning February 24. Following a televised address by President Putin, Russian forces started a “special military operation” against Ukraine. The operation involved an initial salvo with more than 100 ballistic and cruise missiles, and a ground invasion by mechanized forces along several attack axes (Bowen, 2022b, pp. 3–4). Broadly, Russian forces attacked along four front sections: the northern towards Kyiv; the northeastern towards Kharkiv; the eastern in Donbas; and the southern from Crimea. These front sections were further divided into what appears to be eight attack directions: on the right bank of the Dnipro towards Kyiv; the left bank of the Dnipro towards Kyiv; towards Kyiv from the west; into Kharkiv and Sumy oblasts; into northern Luhansk; Donbas; towards Mariupol from Crimea; and towards Mykolaiv from Crimea (see map and table) (see also Zabrodskyi et al., 2022, p. 9). The attack on Kyiv, probably the Russian main effort, was primarily conducted along three axes. The main axis followed the right bank of the Dnipro towards Kyiv and included units from the 29th, 35th and 36th Combined Arms Armies, and several units from VDV. These units were under the command of the Eastern Military District (Kagan, Stepanenko, & Barros, 2022; Varner, 2022). A secondary axis on the Kyiv front, bypassing Chernihiv to gain control of the left bank of the Dnipro, included units from the 2nd and 41st Combined Arms Armies from the Central Military District (Kagan, Stepanenko, & Barros, 2022; Varner, 2022). Part of this effort was also supported by units from the Western Military District attacking through Sumy Oblast (Clark, Barros, & Stepanenko, 2022c). On the Kharkiv front, Russian forces from the 1st Guards Tank Army, and the 6th and 20th Combined Arms Army of the Western Military District attacked on a broad front, trying to bypass Kharkiv, but also attacking into Northern Luhansk with the support of LNR units (Clark, Barros, & Stepanenko, 2022c; Kagan, Stepanenko, & Barros, 2022; Varner, 2022). In Donetsk Oblast, and towards Mariupol in particular, the 8th Combined Arms Army of the Southern Military District, supported by DNR units, were responsible (Clark, Barros, & Stepanenko, 2022c). On the

southern front, units from the 8th, 49th and 58th Combined Arms Armies from the Southern Military District attacked east towards Mariupol, north towards Zaporizhzhia, and west towards Kherson and Mykolaiv (Kagan, Stepanenko, & Barros, 2022; Varner, 2022). Naval infantry and VDV units participated on several axes. After large territorial gains in the initial hours and days of the invasion, the Russian multipronged attack quickly met effective Ukrainian resistance and began to stall (Zabrodskyi et al., 2022, pp. 24–34). Three weeks after the launch of the invasion, the Russian attack culminated on all axes, and Russian forces subsequently withdrew from Northern Ukraine.

Front section (strategic)	Military District	Attack direction (operational)	Units (army, army corps)
Kyiv	Eastern MD	Kyiv on the right bank (west Dnipro)	29 CAA, 35 CAA, 36 CAA
	Central MD	Kyiv on the left bank (east Dnipro)	2 CAA, 41 CAA
	Western MD	Kyiv from the west (Sumy)	1 GTA
Kharkiv	Western MD	Kharkiv	1 GTA, 20 CAA, 6 CAA, 2 AC (LNR)
		Northern Luhansk	
Donbas	Southern MD	Donbas	8 CAA, 1 AC (DNR), 2 AC (LNR)
Southern	Southern MD	Mariupol from Crimea	58 CAA, 49 CAA, 8 CAA, 22 AC (Black Sea Fleet)
		Mykolaiv from Crimea	

Table 6 Front sections and attack directions in the initial phase of the Russian invasion of Ukraine. Not complete (compiled from Clark, Barros, & Stepanenko, 2022c; Jones, 2022; Kagan, Stepanenko, & Barros, 2022; Varner, 2022; Zabrodskyi et al., 2022).

On March 25, four weeks after the start of the invasion, Chief of the Main Operational Directorate of the Russian General Staff, Major General S. F. Rudskoy stated that the first phase of the Russian "special military operation" was successful, and that they would now focus on capturing Donbas ("Main Objectives Accomplished," 2022). Approximately one week later, Russian forces started to leave the northern parts of Ukraine (Clark, Barros, & Hird, 2022). The withdrawal was done in

relatively good order and within the timespan of five days (Clark, Barros, & Stepanenko, 2022a). As Russian forces were withdrawn from Northern Ukraine and reconstituted, they were made available for a new offensive in Donbas. The offensive in Donbas, starting in earnest on April 18, was most likely aimed at the Ukrainian Joint Forces Operation (JFO) forces in Donbas. The JFO was a substantial Ukrainian force originally tasked with defending along the contact line created by the "Minsk II" agreement. It contained many of the best Ukrainian combat formations (Bowen, 2022b, pp. 11–13). One assessment by RUSI was that the new objectives involved the encirclement and destruction of the JFO in Donbas, and the seizure of Luhansk and Donetsk oblasts (Zabrodskyi et al., 2022, pp. 34–35). This also seems to be the Ukrainian assessment. Shvaliuchinskyi argues that:

> At the beginning of spring, the adversary lost offensive potential, conducted defensive operations in the north and south, but the enemy also tried to conduct a double envelopment of friendly forces in the east. Despite the fact that the Russian troops were forced to retreat from Kyiv, Chernihiv and Sumy, the enemy's efforts to surround our forces in the east did not stop until the summer. (…) But at the beginning of autumn, the Russians probably realized that they would not be able to complete the encirclement, and they started trying to push our troops out of Donetsk region by conducting frontal attacks (Shvalyuchinskyi, 2023a slide 16-19).

Thus, it seems that the Russian objective in this phase of the war was to encircle the Ukrainian forces by attacking from Izyum in the north and Donetsk City in the south. Reportedly, smaller encirclements were attempted inside the larger encirclement effort, for example at Severodonetsk (Kagan, Hird, & Stepanenko, 2022). Additionally, as Russian forces had completely surrounded Mariupol, sizeable forces were tasked with defeating the Ukrainian defenders in the city. Substantial Ukrainian forces were stubbornly defending the city, also from within the structures of the "Azovstal" steel plant, and Russian forces were forced to enter into urban combat (Clark, Stepanenko, & Hird, 2022). The Mariupol defenders did not give up until ordered to do so by President Zelenskiy on May 17 ("Ukrainian Troops Surrender," 2022). Ultimately, the Russian forces were unable to encircle the JFO.

During the summer of 2022, the fighting between Russian and Ukrainian forces reached a stalemate and the invasion entered its third phase. As would become clear later, the Russian forces were exhausted, and the Ukrainian forces were preparing for upcoming offensive operations. The Russian forces tried to replace their heavy casualties by forced conscription in Luhansk and Donetsk Oblasts,

volunteer formations recruited all over Russia, the so-called BARS reserves,[17] and the signing of new contracts, included in private security companies such as “Wagner”. These efforts seemed inadequate to replace a badly bloodied invasion force (Kjellén, 2023, pp. 17–18, 77). Subsequently, in late August the Ukrainian Armed Forces started an offensive on the right bank of the Dnipro in the Kherson oblast. While the Ukrainians were able to advance, they did so slowly and experienced heavy casualties. However, on September 6, Ukrainian forces suddenly initiated a second offensive in the area around Kharkiv. This offensive saw a collapse and rout of Russian forces, and, in the course of a few days, Ukrainian forces liberated large areas of their territory (“Mapping Ukraine’s Counteroffensive,” 2022). On September 10, Ukrainian forces liberated Izyum and Kupiansk, and thus cut off an important Russian supply line along the Oskil river (Kofman & Evans, 2022f, time 17:00). The important railway hub of Lyman was captured in early October, removing much of the Russian offensive potential for encirclements in Luhansk Oblast (Kagan, Hird, Stepanenko, et al., 2022). At this point the Kremlin’s position had significantly worsened and drastic measures needed to be implemented to avoid further collapse in Ukraine.

On September 21, President Putin ordered a partial mobilization with the target of mobilizing 300,000 reservists. This strongly indicates that the Ukrainian Kharkiv offensive was seen as a major Russian catastrophe and demanded a mobilization to mitigate the grave personnel shortage in the Russian forces in Ukraine (Kagan, Stepanenko, Lawlor, et al., 2022). The need to fill the frontlines with a sufficient number of soldiers was specifically mentioned in Putin’s address about the partial mobilization (Putin, 2022). Illustratively, already within two weeks of the mobilization, the first of the mobilized soldiers were verifiably killed in Ukraine (Latypova, 2022). This marks the end of the period of interest to this case study.

With caveats due to the uncertainty of the data, the initial phase of the 2022 Russian invasion shows a stark resemblance to earlier Russian operations, included the 2015 invasion plans drafts. Looking at this invasion with Western eyes, it perhaps makes little sense. Russian forces apparently lacked joint integration, proper preparation and tactical proficiency; however, as this subchapter will show, seen in light of the Soviet way of warfare, Russian behavior is more sensible. Although they failed initially, the Russians were aiming at achieving surprise, effectively exploiting the resultant opportunities in the initial period of the war, and thus quickly reaching decisive objectives. Subsequently, an approach based on maneuver of firepower, aimed at creating a collapse locally in the Ukrainian defense, was applied; in other words, it was an approach based on *udar*.

[17] BARS was a Russian initiative in 2020 to build up a volunteer reserve force similar to territorial defense forces (Kjellén, 2023, p. 77).

The application of effects

Several sources point to a Russian lack of joint integration during the invasion of Ukraine (Jones, 2022, pp. 4–6; Kofman & Lee, 2022; Watling, 2022; see also "Naibolyeye Vazhnyye Vyvody," 2022). A RUSI analysis states that:

> Even though the Russians had both airborne command posts in the form of Il-20 Coot aircraft and AWACS orbits provided by A-50M, the coordination of air operations was subordinated to the military district command posts of the Ground Forces rather than the VKS [Russian Air Force]. Rather than running operations from a central combined air-operations centre, coordination of air tasking was managed by ground-based C2 and planned separately by air armies assigned to support each operational group of forces (Zabrodskyi et al., 2022, p. 45).

This is likely due to the traditional Russian command approach. The strict interpretation of unity of command within the concept of *edinonachalie*, largely ruling out support relationships, makes the Western approach of an overarching joint headquarters unworkable. As demonstrated in the Soviet way of warfare chapter, in Soviet military culture, other branches cannot be subordinate at the highest levels and still be expected to support and cooperate with lower levels of command in any substantial way. Thus, a Russian commander that needs air support to achieve his mission needs the aircraft and helicopters directly attached to his unit. In that way, the Russian command approach is perhaps more joint than the Western in that forces from different branches are directly subordinated to lower echelons such as a "group of forces", typically at the army or army group command levels. Consequently, Russian centralization does not result in a comprehensive "joint forces headquarters" at the operational level of warfare as is common in NATO operations but is aimed at giving the individual commander larger *control* of their forces to accomplish their assigned missions. This is illustrated by the apparent lack of comprehensive and overarching command of all Russian forces in the initial phase of the invasion, resulting in poor synchronization and mutual support between the different attack directions (Bowen, 2022b, pp. 7–8; Hodge, 2022). However, while Russian centralization did not result in a large joint force headquarters, it surely resulted in the prioritization of the operational level of warfare.

Several sources have pointed to the poor tactical performance of Russian forces (Bowen, 2022b, pp. 6–8; Dougherty et al., 2022, time 12:00; Jones, 2022, pp. 1–2; Watling, 2022). There are even views that the Russian forces were acting in a way that was not "consistent with a desire for self-preservation" (Watling, 2022). While there were apparently numerous examples of poor Russian tactical behavior, some of these instances would have been the result of the Russian centralization at

the operational level of warfare. As will be elaborated on below, the Russian operation presupposed strategic surprise in order to penetrate deep into Ukrainian territory to disrupt and fragment the Ukrainian Armed Forces' ability to resist. Thus, notwithstanding uncertainties about the specific operational objectives, there seemed to be a desire to quickly penetrate Ukrainian defenses. Consequently, this would lead to a set of dilemmas between rapid penetration and the needs at the tactical level of warfare. Firstly, in order to reach deep into Ukrainian territory before substantial Ukrainian forces could be prepared and put to the field, a high rate of advance was essential. Thus, Russian forces advanced in column formation for as long as possible and preferred to bypass resistance instead of isolating or defeating it. Additionally, Russian forces would rather attack from the march when necessary, than to conduct deliberate attacks utilizing thorough reconnaissance and preparations (Kofman & Evans, 2022b, time 05:00). This would obviously make the advancing Russian forces vulnerable to ambushes, long-range anti-tank weapons and obstacles. However, the operational need for a high rate of advance overrode substantial measures to win the tactical fight.

Secondly, Russian soldiers and low-level leaders did not seem to have been told about the invasion until, at most, a few days before (Zabrodskyi et al., 2022, pp. 24–29). This likely caused widespread morale problems and a general lack of preparation of Russian units. However, without this extreme level of secrecy, the campaign plans would likely have been revealed. The level of corruption in the Russian Armed Forces, and their reported lack of encrypted communications equipment would have meant a risk of the plans being leaked. In an army that put heavy emphasis on surprise, this cannot be allowed. Again, the operational level's requirement to retain the element of surprise had primacy over the need to prepare the force for the tactical fight. This does not mean that it was a sound decision, but it describes the Russian *rationale* for their approach.

Thirdly, a prevalent lack of normally essential tactical procedures, such as advance and flank security, preparatory fires and securing supply routes, may partly have been caused by the requirement for a high rate of advance. Force protection of Russian forces, perhaps most notably for the logistics units attempting to keep up with the combat forces over long distances and in hostile terrain, was forsaken in order to penetrate rapidly into Ukrainian territory (Skoglund et al., 2022). These high-speed maneuvers, used by Russian forces in the initial phase of the invasion, not only restrict the forces to mounted movement along main road axes, but also reduce the possibility of establishing other force protection measures such as flank security. The Russian force design relying on BTGs, which will be elaborated on below, exacerbated this lack of force protection – they lacked the sufficient maneuver forces, and infantry in particular, to cover their support units (Kofman & Lee, 2022). On the other hand, if the Russian forces had reached their operational objectives to a larger

extent, they could have turned the tables, and instead of having their own supply lines threatened, began to threaten those of the Ukrainians. Consequently, while Russian tactical performance seemed unexpectedly poor, the Russian approach to centralization can explain some of this underperformance. Both the different view of joint integration and the prioritization of the operational level of warfare point to the Soviet form of centralization.

The Russian force design in the initial phase of the invasion is of special interest: despite Russian forces invading the second largest country in Europe after Russia itself, they chose to use their BTG-based force generation system. The use of battalion-sized task forces (BTGs), which was one of the recurring traits of previous Russian conflicts, was also present in the 2022 invasion of Ukraine. The Russian ground forces were deployed as BTGs at the Ukrainian border before the invasion, and it seems that the primary combined arms unit used in the invasion was the BTG (Grau & Bartles, 2022). Operating far from other BTGs from the same parent formation, an individual BTG needed to execute functions similar to a brigade. Thus, the command and control element of the BTG likely needed to be reinforced beyond their fairly limited maneuver battalion headquarters. Consequently, resources such as staff officers, radios and vehicles from the brigade or regimental headquarters would have to be attached down to the BTG. This would prevent or reduce the ability to establish brigade and regimental commands above the BTG. In other words, the regimental, brigade and even divisional command levels could have been lacking in the initial phase of the invasion. At the very least, these headquarters were at a severely reduced capacity. Additionally, as one brigade or regiment typically deploys two or three BTGs each, the army and army corps command levels could be commanding two-digit amounts of combined arms maneuver elements or BTGs. This is also the impression of the Ukrainians. As Shvalyuchinskyi put it:

> The Russians created a huge number of so-called battalion tactical groups, which they tried to control from the operational level command posts.[18] Logistic support was organized in the same way – without the use of brigade and regimental links of command and control and support systems (Shvalyuchinskyi, 2023a slide 32.6).

A Russian situation map,[19] allegedly captured by Ukrainian forces, strengthens this proposition. It depicts a group of forces stretched out between Kherson and Mykolaiv in Southern Ukraine at the

[18] An operational level command post specifically points to the army headquarters in Russian military terminology. See Subchapter 4.2 for a more detailed discussion of Russian command echelons.
[19] This situation map, dated 10.03.2022, shows a Russian group of forces, including the 22nd Army Corps (Black Sea Fleet), the 49th Combined Arms Army, and the 7th Air Assault Division (VDV), attacking towards Mykolaiv in Southern Ukraine ("ZSU Zakhopyly Shtabni Mapi," 2022). The authenticity of the document cannot be fully verified; however, it contains authentic Russian symbology and methodology, depicts a plausible situation at the time, was widely seen as likely authentic by analysts, and it is hard to see how the Ukrainians could benefit from

beginning of March 2022. The map shows the headquarters of the Southern Military District, probably commanding this group of forces, in addition to army, army corps and divisional headquarters, and, finally, each of the BTG command posts. However, a particular point of interest is the headquarters that are missing. The only brigade or regimental headquarters present on the map are a small number of specialized brigades and regiments: the 127th Reconnaissance Brigade, the 126th Coastal Defense Brigade and a few rifle regiments apparently conducting security missions. The only regular combat brigade or regiment headquarters present on this map is the 11th Air Assault Brigade. Conversely, the regiments of the 7th Air Assault Division and the 20th Motor Rifle Division, in addition to the 34th and 205th Motor Rifle Brigade, have not visually deployed their headquarters. Thus, these headquarters are missing in between the army, army corps, or divisional levels of command and the BTG headquarters ("ZSU Zakhopyly Shtabni Mapi," 2022). Consequently, the army and divisional headquarters had a significantly expanded command span in comparison to what is normally expected of them. These headquarters likely commanded a two-digit number of subordinate maneuver elements, operating independently and over large areas.

The use of BTGs in the invasion also had a significant impact on the Russian use of combined arms warfare. Because the operational environment of Eastern Ukrainian is characterized by flat and open terrain and contains a comprehensive road network, it is fairly accessible to mechanized forces. Additionally, except for large rivers, this area presents few terrain obstacles. Importantly, the active frontlines in the initial phase of the war were approximately 1500 km in a straight line,[20] and with a Russian invasion force of around 120 BTGs, this would equal one BTG per 13 km of frontline. This density presupposes that all the BTGs were evenly distributed, there were no reserves and no mutual support between the BTGs. Because this is unlikely, it suggests that there were substantial distances between each BTG or clusters of BTGs, perhaps as much as tens of kilometers. Thus, in the context of combined arms warfare, each BTG would be expected to be operating largely independently. Consequently, each BTG acted likely as a "combined arms islands" in a vast hostile territory. The BTGs had been more successful in Donbas in 2014 and 2015, but at that time they were supported by light auxiliary infantry, occupying the terrain between the BTGs, and thus mitigating one of their main weaknesses (see Fiore, 2017). In the initial phase of the 2022 invasion, the BTGs had outrun any prospects of having light auxiliary infantry supporting them.

Overall, the Russian use of BTGs, likely with reduced or non-existent regimental or brigade command levels, drastically increased the Russian command and control span. Tank and combined arms armies

releasing this information, which reduces the possibility that this was part of a Ukrainian information operation. These maps are attached to this thesis.

[20] Measured by author with Google Earth Pro.

would, in the worst case, control a two-digit number of BTGs in addition to other combat support and logistical entities attached to the army. The dispersed deployment of these BTGs, often independently and rapidly penetrating deep into Ukrainian territory, would pose an immense command and control challenge. On top of that, the Russians experienced severe problems with communications, reportedly partly relying on cell phones and unencrypted radios (Cranny-Evans & Withington, 2023). Consequently, due to the extremely low force concentrations and a BTG based force structure, the Russian combined arms system did not have the distinctive layered appearance in the initial phase of the invasion. This was neither layered in the sense of several complementing systems on top of each other nor in the sense of fires systems with increasingly longer range. While Russian behavior in the initial phase of the invasion deviates from the traditional Soviet and Russian approach to combined arms warfare, it can still be observed earlier. All the previous case studies have similarities to the 2022 full-scale invasion. However, this rapid penetration approach has not been attempted on this *scale* since the 1979 Soviet invasion of Afghanistan, or perhaps even the 1968 Soviet invasion of Czechoslovakia, and never with the level of resistance the Ukrainian Armed Forces displayed. In other words, the traditional approach to combined arms warfare was temporarily exchanged for a "combined arms island" approach – a necessity in order to seize large areas with an insufficient force by rapidly penetrating the Ukrainian defense system.

Despite reports of unexpectedly low levels of use of electronic warfare in the opening phase of the invasion, these means have been central in this war (Watling & Reynolds, 2022a, pp. 2–3). Electronic warfare has been crucial for the Russians in countering the UAV-threat, degrading Ukrainian air defenses, locating targets such as enemy counterbattery radars and UAV controller stations in the depth of Ukrainian defenses, and other roles. At some point the density of electronic warfare assets became as much as one large system per 2 km frontline, with smaller systems even distributed down to platoon level (Bronk et al., 2022, p. 7; Zabrodskyi et al., 2022, p. 37). This high density of electronic warfare assets, and thus jamming of satellite navigation and UAV control links, reduced the precision and effectiveness of Ukrainian indirect fires (Zabrodskyi et al., 2022, pp. 57–60). However, a RUSI-report concludes that:

> Russian systems are largely designed around single missions. Even within an EW or air-defence system, each operator will control a different sensor or function. Operators are trained to examine the specific picture for which they are responsible. Neither in their systems' design, nor in their culture, is there an effective fusion process. In consequence, although the force often has the information to spot inconsistencies in its sensor picture, it is

> rarely able to compare its datasets to identify these inconsistencies within an operationally relevant timeframe (Zabrodskyi et al., 2022, p. 49).

From this viewpoint, if the electronic warfare or air defense "subsystems" are online in the same area, the overall combined arms system will include both electronic warfare and air defense even if it is not comprehensively integrated and synchronized. One of the problems with this approach, alluded to in the citation above, is the lack of deconfliction between the different parts of the system. The same report pointed to the lack of deconflicting of electronic jamming as an example of this. The ubiquitous Russian jamming, effectively reducing the UAV threat, also affected Russian communications and navigation systems (Zabrodskyi et al., 2022, p. 38). More specifically:

> [i]nterestingly, there is minimal interest among Russian crews in synchronising these effects [electronic warfare] with other activities or with deconflicting their effects. Instead, for the period when an EW team is deployed, it is weapons free with its system and tends to aggressively attack Ukrainian systems (Watling & Reynolds, 2023, p. 18).

As such, the highly effective Russian use of electronic warfare, and also their lack of deconfliction with friendly forces, point towards the uniquely Russian approach to combined arms warfare – instead of intimate synchronization with other elements of the system through detailed planning and integration, the Russian approach is more about changing the whole operational environment through large-scale use of electronic warfare.

In addition to electronic warfare, the Russian invasion was also accompanied by several cyber-attacks. In particular, Ukrainian political and military leadership and communications infrastructure were targeted, and attempts were made to control the Ukrainian information environment (An Overview of Russia's Cyberattack Activity in Ukraine, 2022, p. 12). Of all the Russian destructive cyber-attacks, approximately 72 % were targeted against governmental leadership organizations and critical infrastructure, and there was a preponderance of cases in the first week of the invasion (An Overview of Russia's Cyberattack Activity in Ukraine, 2022, p. 4). One of the most effective Russian destructive cyber-attacks was targeted against the Viasat satellite communication system. On the eve of the invasion, a large cyber-attack disabled satellite communications modems in Eastern Europe, creating large disruptions in communications in Ukraine (Bing & Satter, 2022). However, the introduction of large numbers of Starlink receivers into Ukraine mitigated some of the negative consequences of the cyber-attack against Viasat (Collier, 2022). This points to a Russian use of cyberwarfare to disrupt the Ukrainian ability to effectively defend against a Russian conventional invasion.

After the initial phase of fast-paced penetrating maneuvers, the re-orientation towards more limited goals in Donbas also changed the Russian mode of fighting. The use of indirect fires became, not surprisingly, very central to the Russian effort. At the height of the Russian offensive in Donbas in the spring of 2022, Russian forces were typically firing 20,000 artillery rounds per day, significantly more than the Ukrainians at 6,000 per day (Watling & Reynolds, 2022b, p. 6). According to RUSI:

> The assault tactics employed by Russian operations evolved over time. Initially there were repeated attempts to make progress using armoured thrusts. (…) Thereafter, the Russians resorted to the total saturation of defended areas to compel withdrawal. This created a dilemma for the UAF [Ukrainian Armed Forces] because if ground was ceded, the Russians would advance, but to prevent it being ceded it was necessary to maintain troops under massive bombardment, with inevitably high casualties (Zabrodskyi et al., 2022, p. 39).

Even in defensive operations a similar artillery-heavy approach was used:

> If the Russians learn that an assault is being prepared, the area is often saturated with fire to prevent its execution. Another common tactic is for the Russians to withdraw from a position that is being assaulted and then saturate it with fire once Ukrainian troops attempt to occupy it (Watling & Reynolds, 2023, p. 12).

This clearly shows the importance of indirect fires to Russian forces (see Fedorov, 2022). It also indicates an approach based on *udar*. A shattering fire strike into the depth is meant to achieve the primary effect on the enemy. The subsequent maneuver is largely just to exploit the effects of the preceding fire strike. Arguably, the Russian approach to combined arms is largely constituent of this fire strike, or "fire destruction of the enemy" as it is often called in Russian literature (*Osobennosti Vedeniya Shturmovogo Otryada*, 2022). Importantly, it also includes other means of firepower such as long-range fire from tanks, EW and armed UAVs. Thus, in a Russian context, the military art necessary to accomplish this shattering fire destruction of the enemy might be treated largely as combined arms warfare in itself.

During the initial phase of the invasion, the indirect fire elements of the BTGs were organized with a mix of organic mortars, a few field artillery batteries and usually one rocket artillery battery. When the bulk of the Russian forces were subsequently deployed to Donbas for the offensive there, the indirect fire assets were to a larger extent reorganized into brigade or regiment level artillery groups. Typically, an artillery group supporting a brigade consisted of 80-90 guns (Zabrodskyi et al., 2022, p. 39). In other words, when the operational design did not demand a decentralized distribution of indirect fire assets; they were immediately regrouped in a more centralized, and thus traditional

Soviet, fashion. This centralization also points to an approach based on *udar* as more firepower is concentrated at higher command levels, enabling the artillery groups to conduct a massive "fire destruction of the enemy". On the other hand, this reduced the Russian ability to provide responsive artillery support to maneuver elements, and the ground maneuver, increasingly conducted by assault detachments[21] in several waves, was a secondary and independent activity distinct from the "fire destruction of the enemy" (Fedorov, 2022; *Ukrainskiy polkovnik*, 2022; Zabrodskyi et al., 2022, p. 39). However, even with a vast superiority in fires, and despite the fact that the Ukrainian forces were ordered not to give up terrain and thus had to face the massive Russian fires, the Russians were not able to achieve a large-scale breakthrough, but only to advance a maximum of a few kilometers a day (Damantsev, 2022; Watling & Reynolds, 2022b, p. 12; Zabrodskyi et al., 2022, p. 36). Thus, Russian indirect fires are not comprehensively integrated in real-time with the ground maneuver but rather to create favorable conditions for a subsequent maneuver.

The Russians have experimented with different set-ups of reconnaissance and indirect fire assets, so-called reconnaissance fire complexes, in Donbas from 2014 onwards (Fox, 2017a). Consequently, these systems were also present after the full-scale invasion. Reportedly, these reconnaissance fire complexes were intermittently very responsive, with effects arriving 3-5 minutes after the target was observed, but significantly longer response times could also be the case. The fastest kill chain was associated with the use of UAVs; if electronic warfare or counterbattery radars were used, the corresponding engagement time would be up to 20-30 minutes (Litvinenko & Tsekhanovich, 2022; Watling & Reynolds, 2023, pp. 12–13). Two factors contributed to the somewhat lack of responsiveness in Russian fires. Firstly, the increased centralization of indirect fires after the initial phase of the war increased the use of massed fire strikes instead of responsive tactical fire support. Secondly, due to the large number of Russian casualties, and in particular the loss of servicemembers with training on fire control systems, there was a lack of personnel able to exploit the full capabilities of the Russian fire direction systems (Watling & Reynolds, 2022b, p. 5, 2023, p. 13). At the operational level of warfare, the Russians have mainly used ballistic and cruise missiles. Fixed-wing aircraft have largely been prevented from entering Ukrainian controlled airspace. While the missiles themselves have worked effectively, the Russian targeting system has not been without flaws. Often strikes were conducted too late and the target had relocated, or battle damage assessment was not conducted sufficiently. The number of modern missiles in the Russian inventory is also limited (Bronk et al., 2022, pp. 25–35). However, despite some Russian challenges in deploying a fully modern and

[21] The use of so-called "*shturmovyye otryady*", meaning something similar to "assault detachments" was a recurring feature of Russian offensives after the initial phase of the invasion. It will be elaborated on in the next section.

networked fire support system as they envisioned it, their massive use of artillery subjected the Ukrainian defenders to tremendous firepower. In spite of this, the Russian forces were unable to achieve a breakthrough and establish a decisive mechanized maneuver.

The conceptual view of space

The 2022 Russian invasion of Ukraine supports the hypothesis of a Russian preoccupation with penetration of the opponent's defensive system. The initial phase of the invasion, involving BTGs attacking in road march columns, bypassing resistance and along multiple axes of advance, was primarily aimed at penetrating deep into Ukrainian territory before prepared defenses could be established. In this context, it is beneficial to reiterate that the Russian view of maneuver is to move firepower to where it can have the best effect, which is usually into the depth of the opponent's defenses (Batyushkin, 2021, p. 7). As such, the Russian BTGs were probably racing for communication nodes and other high-value objectives in order to fragment and isolate Ukrainian forces. In Russian military-theory, the high-speed maneuver of BTGs provided in many ways the same function as a ballistic missile – a means of penetration to place effects into the depth of the Ukrainian defensive system and thus shatter its cohesion. In other words, the largely hazardous mode of advance was possibly not so much about an underestimation of the Ukrainian military potential, but a means to place effects into the depth before that potential could be realized.

Another point, showing the emphasis on penetration, was the Russian avoidance of urban fighting. There is a strong indication that Russian forces would, after an attempt to seize the city by quickly entering the city center, refrain from fighting in large urban areas, but rather bypass and isolate them. For example, while some urban areas were seized with minimal fighting, such as Kherson and Melitopol, others were bypassed (Clark, Barros, & Stepanenko, 2022b; Kagan, Stepanenko, & Barros, 2022). Kherson seems to have been bypassed by the first echelon of Russian forces, and then captured by follow-on forces, emphasizing the Russian priority given to penetration (Clark, Barros, & Stepanenko, 2022b). Additionally, Mykolaiv, a city west of Kherson and containing important bridges for a potentially further attack towards the port city of Odessa, was only assaulted by skirmishing forces – no prepared assault with substantial forces was attempted ("V Nikolayev Zakhodili Rossiyskiye Tanki," 2022). On the contrary, Russian forces seemed to seek to bypass the city (Kagan, Stepanenko, & Barros, 2022). The captured Russian situation maps dated March 10, mentioned above, show only a reconnaissance screening line east of Mykolaiv and several BTGs trying to bypass the city in the north ("ZSU Zakhopyly Shtabni Mapi," 2022). Rather than focusing on assaulting the city, smaller Russian forces continued to advance north and northeast, reaching smaller towns, such as Voznesensk and Kryvyi Rih (Clark, Barros, & Stepanenko, 2022c; Trofimov, 2022). According to

Shvalyuchinskyi “Russian military experts were confident that the capture of [a] city must be carried out on the move” (Shvalyuchinskyi, 2023b slide 5). The only city the Russian forces assaulted in the initial phase of the invasion was Mariupol, and then only after it was securely surrounded and isolated (“Mariupol: Key Moments in the Siege of the City,” 2022). Clearly, Russian forces were deliberately avoiding urban fighting. Most likely, the overall objectives of isolating and fragmenting the Ukrainian Armed Forces, and thus penetration, had primacy over seizing cities. Consequently, Russian behavior in the initial phase of the invasion showed a clear prioritization of penetration over other considerations.

Similarly to the initial phase, the subsequent offensive in Donbas also showed a traditional Soviet emphasis on penetration. On this occasion, Russian forces were required to penetrate the denser and more well-fortified Ukrainian defenses in Donbas. It was the “fire destruction of the enemy”, as discussed above, that was the main effort in the Russian tactical conceptualization, and not any decisive combined arms maneuver, as would be common in Western maneuver warfare tradition. In the Russian case, the maneuver would be the shell, rocket or missile’s journey over the Ukrainian defenses and into the depth. Much of the Russian indirect fire seemed to be unobserved and aimed at saturating defensive positions before assaults (Fedorov, 2022; Zabrodskyi et al., 2022, pp. 37–39). However, the use of electronic warfare means and UAVs made it possible to observe the depth of the Ukrainian defenses without presence on the ground. Consequently, these elements had been and were important to the Russian refinement of their fire support system. Instances where this fire support system “has been successfully established in Ukraine – which has occurred periodically – (…) has been through the adoption and integration of UAV and EW ISTAR to identify targets and coordinate fires” (Watling & Reynolds, 2022b, p. 6).

A distinct trait of the Russian invasion was the reliance on high combat readiness and strategic mobility. Despite the actual level of Russian combat readiness being questionable, there was an emphasis on rapidly moving, often battered, units from one sector to another along the frontline. Large forces were moved to the border of Ukraine during the build-up to the invasion and then launched with what is described as minimal planning at the tactical command levels, clearly anticipating high levels of combat readiness in their forces (“Naibolyeye Vazhnyye Vyvody,” 2022; Zabrodskyi et al., 2022, pp. 26–27). In this sense, combat readiness would mean the ability to enter combat without specific preparations.

After the initial phase, large forces were moved from Northern Ukraine to Donbas after the attack on Kyiv had failed. These forces had received heavy casualties earlier and were put into combat without much preparation (Kagan, Hird, & Stepanenko, 2022). Similarly, when a Ukrainian counteroffensive

was anticipated in late summer 2022, the Russians largely thought they would be able to defend effectively by operational level deployments of forces. As the Ukrainian counteroffensive was anticipated in the Kherson oblast, large Russian forces were redeployed to this area ("Ukrainian Defense Official Says," 2022). It is important to note that the Russian forces were far from numerically superior in the period included in this case study (see the next section for details). In fact, the total Ukrainian land forces were significantly larger than the Russian forces in Ukraine. However, the Russians often achieved local superiority by shifting forces around (Kofman & Evans, 2022d, time 03:00). This was both due to the Ukrainian requirement to cover the whole border towards the Russian Federation and Belarus, in addition to the frontline in Ukraine, and also due to Russian operational redeployments. As such, Russian forces were, for a long time, able to put Ukrainian forces under pressure without overall numerical superiority, largely by the ability to conduct operational level redeployments.

While there was no clear Russian numerical superiority, if at all, Russian forces would rely on the firepower and protection of their largely mechanized forces and artillery. The combination of a highly mechanized and firepower-centric force and the utilization of rapid operational redeployments caused the Ukrainians to repeatedly be locally "outgunned" (Watling & Reynolds, 2022b, pp. 3–9). However, this approach had its clear disadvantages as a high operational tempo caused logistics to become strained, increased the attrition of mechanized vehicles, and diminished force readiness. By September, this extreme level of activity over several months had caused the Russian force to become overstretched and exhausted. This became painfully clear when several fresh Ukrainian brigades attacked the Russian frontline around Kharkiv. The Russian forces holding the frontline, reportedly units from *Rosgvardia* and DNR/LNR, quickly caved under the pressure and withdrew (Kofman & Evans, 2022f, time 06:00). This withdrawal became disorderly, resembling a rout, and elements from more powerful units, primarily the 11th Army Corps (Baltic Fleet) and 1st Guards Tank Army, were caught up in the panic (Axe, 2022a, 2022b). Thus, the Russian exaggerated operational tempo suggests an emphasis on *aktivnost'*, which is to relentlessly and aggressively trying to control the developments by holding the initiative. However, while Russian forces were able to retain the initiative for a long time, the balance of forces mercilessly put an end to that.

The Soviet practice of procedurally creating units with special purposes out of the existing organic structure was also present during the 2022 invasion of Ukraine. Firstly, the establishment of BTGs as battalion-sized complete combined arms units, equal in function to a brigade, showed a Russian approach to balancing the need for available combat-ready units and the required volume of forces for large-scale conventional warfare. However, when the initial phase of the invasion failed, and

Russian forces started to consolidate the remaining forces into more traditional structures, another type of procedurally created unit started to appear. *Shturmavye otryady*, or "assault detachments", were created to enable Russian forces to assault urban terrain and fortifications, which were prevalent in Donbas. A very interesting field manual, describing best practice in defeating prepared Ukrainian defenses with these assault detachments surfaced in late 2022.[22] First of all, the field manual begins with an underlined warning to the reader. It states that: "Templatic patterns of activity are not acceptable and even harmful" (*Osobennosti Vedeniya Shturmovogo Otryada*, 2022, p. 3). This may be understood as undermining the view of Russian tactics as "template tactics". However, when a field manual based on recent combat experience, hastily published in the midst of a war, needs to put forward such a warning on one of the first sentences, a more plausible interpretation is that excessive use of template tactics is a general problem in the Russian forces.

Another interesting point about this field manual is that, by the same token as the BTG, it prescribes the establishment of a type of unit with a specific purpose, the assault detachment, from existing types of units. According to the manual, "an assault detachment is created from a reinforced motor rifle (airborne, air assault) battalion" (*Osobennosti Vedeniya Shturmovogo Otryada*, 2022, p. 5). A large part of the manual is devoted to describing how the structure of a standard motor rifle battalion can be altered into a completely new organizational structure. An alternative approach, more pertinent to the Western military culture, would be to create units capable of urban combat by training the existing organization to operate in this new environment. More specifically, this approach would be much more aimed at building experience, "best practice" and new skills without drastically changing the organization and thus degrading unit cohesion and personnel relationships within the unit. For example, a US field manual states this clearly: "Basic infantry organization does not change when the battlefield is moved into an urban area" (*Military Operations on Urbanized Terrain (MOUT)*, 2018, p. A-1). This preoccupation with devising the optimal force structure or system, but largely neglecting the requirements at the level of the individual soldier and leader, shows the Russian systemic and "scientific" approach to warfare.

This manual also reiterates central characteristics in Soviet and Russian combined arms warfare. For example, indirect fire support is attached down to very low command levels. It allows for field artillery pieces being attached to assault companies, mortars attached to assault platoons, and

[22] The field manual was received by the author of this thesis from a contact in the Ukrainian military. It has long been circulating in social media channels and RUSI have referenced it as credible source in their analyses (Watling & Reynolds, 2023, p. 6). Finally, the content of this field manual is echoed in a Ukrainian field manual labelled "Combat with assault units: Tactics of the Ukrainian Armed Forces on countering PMC 'Wagner'" (*Bor'ba so Shturmovymi Podrazdeleniyami*, 2022). These three points increase the credibility of the Russian field manual. It is included as an appendix to this thesis.

automatic grenade launchers, which have a significant capacity for indirect area fire, attached throughout the organization (*Osobennosti Vedeniya Shturmovogo Otryada*, 2022, pp. 7–8). Consequently, it is not seen as sufficient for companies and platoons to call for indirect fire support from higher command levels – the company and platoon commanders need to have these resources attached. Again, this points to the Russian concept of *edinonachaliye*, in that a commander needs his necessary resources attached. Similarly, the brigade and regimental artillery groups were usually kept intact, adding to this notion (Watling & Reynolds, 2022b, pp. 4–5).

Another combined arms characteristic, displayed in the field manual, is the central position of the "fire destruction of the enemy". This involves assembling all weapons into a "system of fire" and always applying all available fire support before launching an assault. It even underscores the use of "*guaranteed* fire destruction of the enemy" before the assault commences (*Osobennosti Vedeniya Shturmovogo Otryada*, 2022, pp. 11, 14, 17). A Ukrainian field manual,[23] describing how to counter assault detachments (primarily from the PMC "Wagner"), reiterates the importance of the fire destruction of the enemy as a stand-alone combined arms warfare activity. It is, in fact, describing an approach in which a maneuver of small groups of assault infantry reveals enemy positions and a subsequent massive fire strike before a new wave assaults again, which emphasizes the sequential character of fire and maneuver of Russian combined arms warfare (*Bor'ba so Shturmovymi Podrazdeleniyami*, 2022, pp. 4–5).

As in the previous case studies, there were few examples of distinct echelonment during the 2022 invasion of Ukraine, indicating that this Soviet emphasis is less prevalent in modern Russian operations. As will be clarified in the next section, the area of operations, compared to the available forces, would make it difficult to establish Soviet-type echelons beyond the spontaneous phasing of forces entering combat and the need to keep some forces in reserve. The second phase of the invasion, which was characterized by a grinding Russian approach instead of a mechanized breakthrough, did not lend itself to elaborate offensive echelonment. However, these conclusions are uncertain and based on a lack of its presence in the literature.

The conceptual view of time

Both the Russian force build-up towards the invasion and the intentions of this force were largely revealed by Western intelligence (S. Harris et al., 2022). Additionally, the Ukrainians, who had been

[23] This is a field manual translated into Russian and published by a Telegram account called "The institute of the SMO – the people's translation" (Институт СВО – Народный перевод). While it could contain classified Ukrainian information, it is already made public and also referenced in Western literature (see Bartles, 2023). The original field manual was probably created very late 2022, based on experiences from the summer of 2022 up until then (*Bor'ba so Shturmovymi Podrazdeleniyami*, 2022, pp. 4–5).

in an armed conflict with the Russian Federation since 2014, had in many ways been preparing for events such as a Russian invasion (Merchant, 2022). However, within the conceptualization of surprise used in this thesis, the Ukrainians were surprised. On an imagined timeline of how prepared the parties to the conflict were for war, the Russian side was, in many respects, better prepared. Considerable Russian forces were put to the field, poised for launching an invasion, and arranged into an operational design. This design had obvious weaknesses and was poorly executed, leading to a failure in reaching its end state; however, Ukrainian defenses were not significantly prepared outside the Donbas area. A participant in the battle for Kyiv stated that one of the main weaknesses of the Ukrainian resistance to the Russian invasion was the "extremely low level of preparedness for reducing enemy mobility (engineering obstacles etc.)" (Shvalyuchinskyi, 2022, time 59:40). Additionally, according to this source, there were no unitary and integrated air defense system in the Kyiv area in the initial phase of the war. The unpreparedness of Ukrainian forces caused their air defense units to operate largely independently (Shvalyuchinskyi, 2022, time 1:04:30). Thirdly, Ukrainian political leadership did not formally introduce full mobilization until the day after the invasion, on February 25 (Ljunggren, 2022). Consequently, Russian forces, utilizing a very high, perhaps reckless, rate of advance, were able to seize large swathes of Ukrainian territory in the initial phase of the invasion. Practically all of Zaporizhzhia and Kherson oblasts were seized, along with large areas in Mykolaiv, Donetsk, Luhansk, Kharkiv, Sumy, Chernihiv and Kyiv oblasts (Clark, Barros, & Hird, 2022).

While the Russian achievement of surprise was, in many ways, successful, it was eight years too late to avoid Ukrainian armed resistance as in Crimea in 2014. However, it clearly showed the Russian emphasis on surprise. The Russian military performance in the initial phase of the invasion has been called poor or abysmal by many analysts (Bowen, 2022b, pp. 6–8; Watling, 2022); however, some analysts have also pointed out that the Russian operational design was not far from achieving success (Kofman & Stein, 2022). For example, on the second day of the invasion, a group of riot police that was likely meant to follow the regular forces to establish population control in newly occupied territory was ambushed and destroyed on the outskirts of Kyiv (McMillan, 2022). This has been used as an example of the lack of synchronization and preparedness for battle in the Russian forces (Jones, 2022, p. 5). However, it is also an example of successful Russian surprise. The fact that a police force could drive along public roads for more than 100 km in hostile terrain, reaching the suburbs of the enemy's capital, without entering into combat, shows that the Ukrainian Armed Forces were not properly prepared for the Russian invasion.

The Russian emphasis on surprise is illustrated, for example, by the Russian reluctance to reveal their plans to their own servicemembers before the invasion (Gerasimenko & Khinkulova, 2022). There are even reports of Russian soldiers believing they were on an exercise or that they would not face resistance in Ukraine (Harding, 2022). While there are obvious disadvantages of depriving your own soldiers of crucial information before a major campaign, this practice was not completely groundless. For example, some VDV forces were given their task for the invasion three days before it was launched conversely to Russian regular forces who were told only one day beforehand. However, the early notice caused these VDV forces to talk about their task to seize Hostomel Airport openly, which, largely due to intercepted communications, made the Ukrainians able to prepare artillery fires and coordinate counterattacks before the VDV air assault operation (Watling & Reynolds, 2022a, p. 3). The Russian emphasis on secrecy, even towards their own soldiers, was likely aimed at protecting the invasion plans and achieving surprise.

Another example underscoring the Russian emphasis on surprise was their lack of preparation of the information environment prior to the invasion. The Kremlin made their justification for the operation over the course of a few days before to the invasion (Watling & Reynolds, 2022a, p. 7). In fact, the main strategic messaging was connected to Donbas, which probably was a deception to draw the attention of the Ukrainians towards this area. Several suspected false-flag videos surfaced in the days before the invasion, portraying Ukrainian provocations in Donbas (Harding et al., 2022). If the information operation was supposed to create a pretext for the whole Russian operation, the messaging should have been different. On the other hand, if the purpose was to deceive, this strategic messaging would make more sense. Thus, the preparation of the information environment was aimed at achieving surprise in the conventional operation rather than creating a credible pretext. This points to the crucial role of surprise.

The Russian operational design for the invasion of Ukraine was based on a perceived preeminence of strategic surprise. Likely, the achievement of, at least in part, strategic surprise and the subsequent relentless exploitation of the initial period of war, were supposed to reach decisive outcomes before the Ukrainians were able to mount effective countermeasures and the West could come to their aid. In the initial days of the invasion, Russian cruise and ballistic missiles, *spetsnaz*, air assault forces and columns of mechanized forces penetrated deep into Ukrainian territory. For example, on the Kyiv front, VDV-forces were air landed by helicopter at Hostomel Airport, on the outskirts of Kyiv, in the initial hours of the invasion (Collins et al., 2023). At the same time, Russian *spetsnaz* forces, dressed in civilian clothes or Ukrainian uniforms, operated in Kyiv city center (Clark, Barros, & Stepanenko, 2022b). Within the first week, Russian mechanized columns reached areas such as the suburbs of

Kyiv, Voznesensk (140 km northwest of Kherson), and Enerhodar ("Security Council Debates Ukraine NPP," 2022; Trofimov, 2022). The attacking Russian forces were using many axes of attack and a high rate of advance, and thus taking significant risks in order to reach great depths. If successful, the Russian forces would be able to fragment the Ukrainian defenders into manageable pieces. In other words, the Russian penetrations would destroy the cohesion of the Ukrainian defensive system and, subsequently, allow the piecemeal destruction of isolated Ukrainian units. Interestingly, the Western perception of maneuver as the movement of combat forces in relation to enemy combat forces fails to grasp the meaning of the Russian maneuver in the initial period of the invasion. The maneuver of mechanized BTGs, executing a strike by forces (*udar voysk*), and, for example, the movement of cruise missiles, had the same purpose: to place effects (from the warheads of cruise missiles or weapons of the BTGs) into the depth of the Ukrainian defensive system.

The previously mentioned 2015 invasion plans (allegedly leaked draft plans for an invasion of Ukraine east of the Dnipro) arguably show an operational design similar to that used in the initial phase of the 2022 invasion. Large groups of forces, aided by means such as long-range fires, *spetsnaz*, air assault troops and electronic warfare, were to rapidly penetrate across Eastern Ukraine and isolate Ukrainian forces by seizing key infrastructure (*Poyasnitel'naya Zapiska Gruppirovki Voysk «Sever»*, 2015, p. 21). However, although the design was similar, the operational objectives of the 2022 invasion were slightly different and more maximalist. The 2015 plans aimed at seizing the left bank of the Dnipro by controlling crossings at Kyiv, Cherkassy, Kremenchug, and Dnipro (*Poyasnitel'naya Zapiska Gruppirovki Voysk «Sever»*, 2015, pp. 25–27). While the 2015 plans did not necessarily describe all the groups of forces participating, there is a clear indication of an operation restricted to the left bank of the Dnipro. The expressed end-state of the operation was the "establishment of security zones and taking control of Ukrainian territory on the east bank [of the Dnipro]" (*Poyasnitel'naya Zapiska Gruppirovki Voysk «Sever»*, 2015, p. 21).

In 2022, the Russian attack axes west of Kyiv and west of the Dnipro in the south indicate that they were also aiming at isolating the large Ukrainian cities along the Dnipro. Captured invasion plans for the 2022 invasion, made available to RUSI, echo the 2015 plans in many respects. The RUSI report states that:

> Ground forces were assigned sectors and tasks down to the level of the battalion tactical group. For mechanised forces, the intent was often to rapidly occupy and thereafter isolate and screen key objectives. (…) The assumption was that by D+10, Russian units would transition to stabilisation operations. The synchronisation matrix of the 1st Guards Tank Army (Western Military District), for example, captured near Kyiv in March 2022, stated that

> by D+10 the force would 'proceed to the blocking and destruction of individual scattered units of the Armed Forces and the remnants of nationalist resistance units' (Zabrodskyi et al., 2022, p. 10).

The 2015 invasion plans describe parts of its course of action as:

> by the end of D6 establish security zone No. 1 (…) [west of Kharkiv], block KHARKIV with the forces of 15th [Independent Motor Rifle Brigade] (BTG-2) in cooperation with 6th [Motor Rifle Regiment] "Cossack" 12 to [cut] the main railway junctions and road routes. From D9, the second echelon will enter into battle (…). The main strike is directed towards (…) KYIV; another strike towards (…) KREMENCHUG. (…) by the end of D10, capture the line of ROMNY, LUBNY, HOROSHYNE, block KREMENCHUG from the north and prevent buildup of enemy forces. Subsequently, (…) establish security zone No. 2 (…) [east of Kyiv, Cherkassy and Kremenchug] (*Poyasnitel'naya Zapiska Gruppirovki Voysk «Sever»*, 2015, pp. 19–21).

Consequently, the operational design followed by the Russian forces in the 2022 invasion was likely a refined version of plans from at least as far back as 2015. However, attack axes towards western Kyiv, Kryvyi Rih and Voznesensk indicate that, contrary to the 2015 plans, the Russian end state did involve territory on the right bank of the Dnipro.

Looking at the Russian invasion force, one central question comes to the fore. Why was it so clearly undersized? For example, the US coalition that liberated Kuwait in 2003, attacking on a 500 km broad front and into a depth of 200 km,[24] contained just shy of one million soldiers (*Countries Compared by Military*, n.d.). In 2003, another US coalition attacked along the large rivers of Iraq from Kuwait to Baghdad, an area approximately 200 km broad and 500 km deep (the distance between the Kuwaiti border and Baghdad).[25] This force consisted of almost 300,000 soldiers ("Why Did the US and Allies Invade Iraq," 2023). The Russian invasion force attacking Ukraine on February 24, 2022 consisted of 150,000-190,000 soldiers and attacked along a 1500 km wide frontline. The ultimate objectives of this force were probably at depths from 100 km (Kyiv) to almost 300 km (Moldova).[26] The oblasts of Luhansk, Donetsk, Zaporizhzhia and Kherson alone have a total area of approximately 100,000 sq km, similar to the combat zone of the US coalitions in 1991 and 2003.[27] Additionally, it is unlikely that the Ukrainian military potential came as a surprise to the Russians. The Ukrainian Army was the second largest in Europe and, while admittedly reliant on old Soviet equipment, contained potent

[24] Measured by the author with Google Earth Pro.
[25] Measured by the author with Google Earth Pro.
[26] Measured by the author with Google Earth Pro.
[27] Measured by the author with Google Earth Pro.

capabilities such as several mechanized brigades, ballistic missiles, a comprehensive integrated air defense system, and a large army aviation force (Litvinenko, 2022; Zabrodskyi et al., 2022, pp. 16–24). Russian forces had also experienced both Ukrainian combat abilities and resoluteness before in Donbas, perhaps most notably in the battles for Donetsk Airport and Debaltseve. These battles involved large mechanized forces and substantial use of conventional firepower (Fox, 2017a, 2019; see also McDermott, 2022a). Finally, and most importantly, the Ukrainian Armed Forces had been preparing for a potential Russian invasion since 2014, both psychologically and through military reforms and Western aid (Mevlutoglu, 2022). Likely, the Russian invasion force of 150,000 to 190,000 soldiers including *Rosgvardia*, DNR/LNR and regular Russian units, in approximately 120 BTGs, was matched by a substantial Ukrainian force (Bowen, 2022b, pp. 1–2; Jones, 2022, p. 6). According to one open-source analysis, the Ukrainian ground forces included 15 mechanized and motorized infantry brigades, 2 tank brigades, 7 artillery brigades, 5 airborne, air assault or airmobile brigades, and 2 naval infantry brigades at the start of the war. This source estimated that there were at least 109 Ukrainian maneuver battalions available when the invasion started, and that several new brigades were activated and coming online within few weeks (Lawrence, 2023). Additionally, many territorial defense forces and national guard formations were activated or created immediately after the initialization of hostilities and increased the number of available light infantry units significantly (Bielieskov, 2023). In other words, the Russian invasion force was probably numerical inferior to the Ukrainian forces from the onset of the invasion until at least the end of the period in question for this case study. Importantly, it is unlikely that the unfavorable balance of forces was lost on the Kremlin.

In spite of this, it is widely accepted that the Kremlin underestimated the Ukrainian combat potential and will to resist and launched the invasion on false assumptions (Bowen, 2022b, p. 9; Watling, 2022). However, according to the discussion above, arguably a more likely explanation is that the risk of failure was accepted, and the belief in surprise as the chief force multiplier was seen as a possible substitute for the lack of sufficient forces. Conversely, if Russian forces had chosen a more traditional and methodological approach to the invasion, they would probably not have been in possession of the large territories they seized. In that counter-factual case, Ukrainian forces would have had more time to mobilize and retain more depth in their defenses. The balance of forces would simply not be sufficiently in favor of the Russians to succeed with a traditional approach. Consequently, if the Kremlin did not underestimate the Ukrainian military potential, the initial period of the invasion is better viewed as a “gamble”, than as an intelligence failure and wishful thinking in the Kremlin. Thus, if the perception of a Russian intelligence failure is largely based on the Russian choice of approach, involving fast-paced penetrations by mechanized columns, it fails to see the Russian reasoning for choosing this approach (see for example Miller & Belton, 2022). As this thesis will show (see Chapter

4), the Russians were in fact using their standard approach to invasions and would likely have used a similar approach if they had been able to deploy a bigger invasion force.

Arguably, the timeline of the initial weeks of the invasion also collaborates the "gamble" hypothesis. Four weeks after the start of the invasion, Rudskoy, the Chief of the Main Operational Directorate of the Russian General Staff, declared that the special operation in Ukraine was going according to plan and that Russian forces would start to concentrate on liberating the whole of Donbas. The interesting part here is not that "everything was going according to plan", which it was apparently not, but that Russian forces had given up on their objectives in Northern Ukraine, including the capture of Kyiv (Savitskiy, 2022). On April 1, only one week later, all Russian forces started to withdraw from Northern Ukraine in a staged operation lasting only five days (Clark, Barros, & Hird, 2022; Clark, Barros, & Stepanenko, 2022a). This implies that in the timespan before Rudskoy's statement on March 25, the Russian rapid penetration campaign had been initiated and then failed; Russian forces had realized that it was failing; this realization had been accepted at the highest political level; and a new plan had been devised, approved and perhaps partly implemented. The timeline of four weeks does not indicate that a failure came as an absolute surprise to the Kremlin; in other words, they were at least partly prepared for failure. Additionally, the withdrawal of several field armies, such as the 35th, 36th and 41st Combined Arms Armies and the 1st Guards Tank Army, over the course of five days and only one week after Rudskoy's statement, strongly suggests that Russian forces were partly ready for a failure and prepared for contingency operations.

Intrinsically, the Russian operational design in the initial period of the invasion demanded an uncompromising exploitation of the strategic initiative. Without it, the Russian invasion force would not be able to fragment and isolate Ukrainian forces, but would, conversely, end up fragmented and vulnerable themselves. Bypassing Ukrainian forces would in any way be a risk; however, reaching deep inside Ukraine could reap great benefits, possibly justifying the Russian risk-taking. This points to the characteristic of *aktivnost'* – the seizing and retention of the strategic initiative through relentless and aggressive operations. Russian forces used a multitude of entry points and methods into the area of operations even though the numeric superiority of Russian forces were slight at best. For example, Russian ground forces attacked along what seems to be at least eight attack directions.[28] Secondly, several air assaults were conducted, most notably against Hostomel Airport, but also in smaller locations elsewhere (Zabrodskyi et al., 2022, p. 26). Thirdly, Russian naval infantry had boarded assault ships of the Black Sea Fleet and were ready to conduct amphibious landings in front of the advancing ground forces. However, later, the naval infantry disembarked and were used

[28] See "Background" section.

as elite ground forces. Most likely, the use of amphibious landings had been deemed too risky (Zabrodskyi et al., 2022, p. 30). Additionally, Russian commanders continued to attack with small, often insufficient and exhausted units, without any apparent tactical justification (Clark, Barros, & Stepanenko, 2022c). However, there seems to be an idea in the Russian forces that putting continuous pressure on the enemy will have substantial benefits, including disrupting any offensive potential and retaining the initiative (Kofman & Evans, 2022e, time 04:00). According to a Ukrainian field manual, describing the Russian use of assault detachments, "the enemy is trying to exert constant pressure on the chosen [attack] directions, thus the attacks have the character of constant reconnaissance by force of small groups of light infantry" (*Bor'ba so Shturmovymi Podrazdeleniyami*, 2022, p. 4). The field manual continues to describe the assault detachment approach to be highly effective in never giving the Ukrainian defenders respite and exploiting their mistakes and weaknesses (*Bor'ba so Shturmovymi Podrazdeleniyami*, 2022, p. 11). Consequently, in addition to the emphasis on *aktivnost'*, this indicates that the Russian way of regular land warfare emphasizes a holistic and systemic view of how to defeat an enemy force. It is the sum of all the different actions that, as a whole, is supposed to induce a systemic collapse on the enemy – not a single decisive action or maneuver.

As the Russian invasion moved into its second phase, focusing on the envelopment of Ukrainian forces in Donbas, the operational tempo of the Russian forces remained very high. While there had been continuously intensive fighting following the withdrawal of Russian forces from Northern Ukraine on April 6, the new offensive started in earnest on April 19 (Kagan, Hird, & Stepanenko, 2022). However, according to the ISW, the new offensive was premature:

> The Russians have not had enough time to reconstitute forces withdrawn from the Battle of Kyiv and ready them properly for a new offensive in the east. The Russians appear to be still building logistics and command-and-control capabilities even as they start the next round of major fighting [on April 19]. The tempo of Russian operations continues to suggest that President Vladimir Putin is demanding a hasty offensive to achieve his stated objectives, possibly by "Victory Day" on May 9. The haste and partial preparation of the Russian attack will likely undermine its effectiveness and may compromise its success (Kagan, Hird, & Stepanenko, 2022).

However, three other explanations could be stronger motivations for the Russian exaggerated operational tempo: the Russian cultural inclination for *aktivnost'*, the holistic view of how to break the Ukrainian resistance, and the objective urgency of reaching significant objectives as early as possible. The idea was likely that the sum of pressure put on the Ukrainian forces, achieved through

an aggressive approach embodied by *aktivnost'*, would break the Ukrainians ability to resist, for example, by depleting their stockpiles of artillery ammunition (Kofman & Evans, 2022a, time 09:00). Additionally, as Ukraine had started mobilization in full and was receiving military aid from the West, the correlation of forces would inevitably develop unfavorably for the Russian Federation. Thus, the time window in which Russian forces could retain the strategic initiative was rapidly closing. Even a Russian general mobilization would not alter this as it would not create immediate results on the battlefield – it would be too lengthy. The prize for the Russians would be to achieve a link-up between the forces attacking south from Lyman and north from Donetsk City in a large envelopment, possibly destroying several Ukrainian brigades of the JFO, or in the worst case for the Russians, if Ukrainian forces withdrew successfully, gaining control over most of Donbas.

If it is the aggregate strain on the enemy system that is important to Russian actions, notwithstanding some local failures, any individual commander would not be able to comprehend completely his contribution to this aggregated effect. Thus, the Russian order-based command style becomes more suitable – as a mission-based command style is largely reliant on mutual situational awareness; this becomes less relevant when the assumption is that no-one can grasp the totality of the situation, perhaps with the exception of the commanders at the operational level of war. For example, reportedly, Russian forces were bypassing resistance, endangering already long and vulnerable supply routes, and had such a high rate of advance that it excluded proper reconnaissance and tactical deployment. According to Shvalyuchinskyi:

> Sometimes, the Ukrainian Defense Forces officers and soldiers could not understand the meaning of the Russian military formations, which despite strong resistance and heavy losses, tried to move forward. One Russian officer said that he had the task of reaching the government sector [in Kyiv], taking it under control and preparing for the parade on Khreshchatyk. So, he led his unit to Khreshchatyk, no matter what (Shvalyuchinskyi, 2023b slide 5).

On the other hand, if Russian tactical commanders had made decisions best suited to their *local* tactical situation and not stayed focused on their given tasks, the operational design would more likely fail. It was dependent on enough of the mechanized columns reaching their objectives deep inside Ukrainian territory. If they had stopped half-way to defeat local resistance, Ukrainian forces would have retained their lines of communications, freedom of maneuver for their ground forces and more of the static infrastructure for much longer. Consequently, the cohesion of their defensive system would persist, and the limited Russian invasion force would never be able to defeat the Ukrainian Armed Forces as a functional unitary force. However, as a "gamble", the Russian

operational design also included a substantial risk of failing and, fortunately for the Ukrainian defenders, this risk materialized, and the Ukrainian Armed Forces retained their internal cohesion.

Another feature of the 2022 Russian invasion of Ukraine also corroborates the Russian version of an order-based command style. Namely, a significant number of high-ranking officers have been killed. For example, Major General A. A. Sukhovetsky was reportedly killed on February 28, 2022, at Hostomel (Mukhina & Krutov, 2022). Major General V. P. Frolov and Major General A. P. Simonov were reportedly killed in April 2022 (Hookway, 2022; "Tenth General Killed," 2022). Major General R. V. Kutuzov was reportedly killed in Eastern Ukraine the summer 2022 ("Russian General Killed," 2022). Several other generals were also reported killed in the war. As the Russian offensive stalled, high-ranking Russian officers had to move forward, which put them at significantly higher risk (Jones, 2022, p. 7). This was compounded by the lack of effective long-range communications, but it is also telling for the Russian leadership concept of *edinonachaliye*. As Russian officers are personally responsible for the performance of their subordinate units, they are expected to move forward and, through their presence on the battlefield, make sure their subordinates achieve their assigned tasks (Kofman & Evans, 2022a, time 01:30). There are even reports that Gerasimov, the Chief of the Russian General Staff, moved forward to Izyum at the end of April and was allegedly wounded by shrapnel. General Gerasimov was not in command of the "special military operation" at the time, but he nevertheless decided to oversee or become directly involved in a local offensive in Donbas (Averre, 2022). As the Russian offensive in Donbas did not achieve the advance rate that was expected, the highest-ranking officer in the Russian Armed Forces felt the responsibility to go there and try to remedy this by his presence on the battlefield.

Summary

The period of interest to this case study, from the onset of the 2022 Russian invasion of Ukraine until the Russian partially mobilization in September 2022, is broadly divided into three phases: the initial campaign of strategic surprise, the second phase of attempting to envelop Ukrainian forces in Donbas through traditional offensive operations, and the Ukrainian counteroffensives of late summer 2022. The two first phases showed clear similarities to the Soviet way of regular land warfare of the 1980s, albeit in somewhat different ways. The first phase of the invasion was based on the achievement of strategic surprise and then the exploitation of the effects of surprise in the initial period of war. Russian forces and means of firepower tried to penetrate deep into Ukrainian territory, isolate and fragment the Ukrainian forces, to then defeat them piecemeal. This operational design involved great risks, which the Kremlin arguably had accepted, and required the Russian forces to seize and retain the strategic initiative. It became clear within two to three weeks that this

approach had failed, and the Kremlin then abolished the objectives of the initial phase. The second phase of the Russian invasion, utilizing a more traditional approach, saw a massive use of firepower to force a breakthrough and create an envelopment in Donbas. This phase also failed, and a battered and exhausted Russian force displayed its weaknesses in late summer as the Ukrainian forces went on the offensive.

Consequently, the 2022 Russian invasion of Ukraine showed several characteristics recognizable from the Soviet way of regular land warfare of the 1980s. Firstly, the Russians relied heavily on combat readiness, strategic mobility, secrecy and deception in order to achieve strategic surprise (see table 7). While it is questionable to what extent the Russian forces are capable of a high combat readiness and keeping their campaign plans secret, they largely succeeded in surprising the Ukrainian defenders. Subsequently, the Russian operational design emphasized deep penetration and a ruthless exploitation of the initial period of war. The goal was probably to place effects into the depth of the Ukrainian defensive system and destroy their ability to act coherently. Thus, they pursued an approach of *aktivnost'* and *udar*. The second phase showed a similar emphasis on active and relentless operations to retain the initiative, and on employing crushing firepower into the tactical depth of the Ukrainian defenses. After initially failing to achieve mechanized breakthroughs and decisive maneuvers, this incremental approach of a "fire destruction of the enemy", and then a subsequent maneuver of "assault detachments", was meant to achieve a steady advance. Finally, a numerical inferior Russian force, exhausted and battered, was not able to continue the exaggerated operational tempo and collapsed along the Kharkiv front. When the Ukrainian offensive finally slowed down, the important Kupiansk – Lyman axis had been lost and the Kremlin had to introduce partial mobilization to stabilize the frontlines.

Element of analysis	**Characteristic**	**Observations**
Application of effects	**Centralization**	-Instead of an overarching "joint forces headquarters", with inter-branch *cooperation* on lower command levels, the Russian approach to command dictated that all resources needed by a commander to accomplish his mission are *attached* to this commander. -The needs at the operational level of warfare were ruthlessly prioritized, making the Russians accept risk and reduced performance at the tactical level of warfare.
	Combined Arms	-In the initial phase, the BTGs, independently attacking over long distances, became "combined arms islands" in a vast hostile territory. This exaggerated the Russian problems with effective command and control and substantially reduced the effect of a "system-over-system" approach to combined arms warfare. -An extensive distribution of electronic warfare assets indicates that this has become an integral and important part of Russian combined arms warfare.

	Udar	-Both the initial phase of rapid penetrating maneuvers and the subsequent offensive in Donbas were characterized by the focus on placing effects into the depth of the enemy defenses in order to degrade their cohesion, and thus allow a penetrating maneuver.
Conceptual view of space	**Penetration**	-Russian forces accepted significant risks and vulnerability in order to penetrate the Ukrainian defenses.
	Mechanization and mobility	-The Russian invasion force was largely mechanized. In fact, one of its main weaknesses was its lack of dismounted infantry. -With a numerical inferior force, the Russian forces relied heavily on their ability to move forces between sectors to retain the initiative.
	Template tactics	-Russian forces *procedurally re-arranged the force structure* in at least two ways: 1. As BTGs in the initial phase of the war, and 2. as "assault detachments" after the initial phase.
	Echelonment	-No significant use of echelonment observed beyond the natural phased introduction of forces.
Conceptual view of time	**Order-based command**	-Russian forces largely pursued their given tasks rather than dealing with their immediate tactical situation in order to achieve success at the operational level of warfare. -Russian high-ranking officers moved forward to the frontline when Russian forces underperformed.
	Surprise	Surprise was heavily prioritized with an emphasis on deception and secrecy in the lead-up to the war, which included the use of large-scale exercises to cover the deployments. In Russian eyes, the achievement of strategic surprise could enable a defeat to an opponent without having significant force superiority.
	Initial period of war	The initial period of the invasion was characterized by a high rate of advance, aggressive and deep penetrating maneuvers, and acceptance of high risks in order to reach decisive objectives.
	Aktivnost'	Several attack axes and methods of penetration were combined with an exaggerated and offensive operational tempo.
Novel characteristics		-Extensive use of cruise and ballistic missiles at the strategic and operational level of warfare. -BTGs were apparently commanded directly from the army headquarters.

Table 7 Summary of the 2022 Russian invasion of Ukraine.

Chapter 4: A Russian Way of Regular Land Warfare

4.1 Introduction

Being a complex and elusive concept, it is difficult to unlock and describe the totality of a way of warfare. By using the findings from the case studies in the previous chapter, this chapter will include Russian military theoretical sources into the analysis and thus be able to present a comprehensive description of the Russian way of regular land warfare. More specifically, using the Soviet way of regular land warfare of the 1980s as a starting point, the discussion will synthesize the results from the cases of Russian military behavior with information from Russian military theoretical books, articles, and field manuals. This includes identifying similarities and differences between the Soviet and Russian approaches, but also putting forward a description of the Russian way of regular land warfare with its internal logic. In many ways, this chapter acts as the conclusion of this thesis, providing a holistic description of the Russian way of regular land warfare. The final chapter is largely a condensed summary of this chapter and not a conclusion in its right.

This chapter consists of three parts: firstly, this introduction gives the outline of the chapter. Secondly, the results from the case studies are discussed within the elements of analysis and are focused on a set of central findings, expressed in the eight sections. Throughout the discussion, observations of Russian behavior are substantiated and triangulated by military theoretical literature and Russian handbooks and field manuals. Finally, the central findings of this thesis strongly point to a distinct pattern in the Russian regular land warfare, summarized in the subchapter “A Soviet and Russian blueprint for invasions”. While the discussion is loosely divided into the established elements of analysis, the interconnected nature of the different characteristics makes the content of each section expand into the characteristics within the other elements of analysis. Moreover, when repeating conclusions from earlier chapters, they will not be fully referenced or explained again here.

The case studies showed that the fundamental problem of early Soviet military theory is still relevant. This fundamental problem is the dual challenge of breaching a modern defense in depth and then establishing a decisive maneuver. In other words, the old problem of penetrating the trenches of World War I, and then maneuvering into the depth of the opponent’s defensive system, has relevance even today. However, both modern defenses and the solution to their penetration have evolved. New weapons and methods have altered the challenge of penetration and maneuver, driven by technological developments such as mechanization, ATGMs and, in recent years, large-scale use of UAVs. Similarly, the solutions to the problem have evolved as well. The analysis of the

Soviet way of regular land warfare in the 1980s showed that there were broadly four conceptual solutions to the fundamental problem. Firstly, and perhaps most important to the Soviets, nuclear weapons were able to both create a breach in the opponent's defensive system and put decisive effects into the depth. This facilitated for penetration by rapidly advancing mechanized forces. The second solution was to initiate the attack before the opponent was sufficiently prepared for war. In order to launch the attack before the defenders had fully established their defensive system, surprise and the exploitation of the initial period of war were of the utmost importance. Thirdly, the use of "non-contact warfare", avoiding a symmetrical confrontation with the opponent's regular forces altogether primarily by long-range precision-strike weaponry, was contemplated but not implemented in the Soviet Armed Forces. Finally, frontal assault by conventional combined arms warfare forces was still relevant to the Soviets. However, this was seen as the least desirable of the solutions due to the massive resources necessary for such an approach (Erickson et al., 1986, p. 83).

Of the four solutions mentioned above, Russian conflict behavior has shown a clear emphasis on the "non-contact warfare" and the "initial period of war" solutions to the fundamental problem of penetration since 2007. Strategic surprise, with a subsequent exploitation of the initial period of war, was present in the 2008 Russo-Georgian War, the 2014 Invasion of Crimea, and the 2022 Invasion of Ukraine. The Russian use of "non-contact means", such as long-range precision strike weapons, electronic warfare and cyberwarfare has evolved more gradually. From the limited use of ballistic missiles to strike strategic targets in the 2008 Russo-Georgian War, the Russian precision-strike capability evolved to the use of massive volleys of cruise and ballistic missiles in Syria and Ukraine. Consequently, some of the characteristics of the Soviet way of regular land warfare have emerged as more relevant than others. For example, surprise, penetration, *aktivnost'* and the initial period of war are four characteristics that, according to the case studies, are both central in themselves but are also tightly interconnected. The use of surprise to achieve penetration, and then the aggressive and relentless exploitation (*aktivnost'*) of the initial period of war seems to be a typical Russian approach. This approach is supported by a set of measures that includes high combat readiness and strategic mobility; high rates of advance; multiple directions and methods of inserting the force; high operational tempo achieved through rapid decision-making, rigid and hierarchical command style and template tactics; and a high degree of mechanization. However, such a high-paced offensive approach involves great risks if the opponent is able to prepare and implement effective countermeasures. Consequently, this high-risk approach is then mitigated by another set of measures such as secrecy and deception.

4.2 The Application of Effects

The prioritization of the operational level of warfare

This section will show that Russian military behavior indicates that the requirements at the operational level of warfare are prioritized at the expense of the tactical level. In addition to its origins in Soviet military history, this prioritization of the operational level has been exaggerated by new developments in Russian military theory. As the discussion below will elucidate, the Russian command framework, emphasizing the role of higher operational commands, and a realization that the levels of warfare are more compressed today have increased the importance of the operational level of warfare. In the Russian view, the compression of the levels of warfare causes tactical assets and activities to be potentially relevant at higher levels, and the need to combine all military resources at lower command levels have blurred the distinction between the strategic and operational levels of warfare.

The case studies show a clear tendency towards centralization at the operational level of warfare at the expense of the requirements at the tactical level. Operational level objectives, such as deep penetrations, were largely prioritized over tactical requirements such as deploying from road march columns to battle formations, using reconnaissance in front and on the flanks of the main force, and securing supply lines. In the 2008 Russo-Georgian War, Russian forces prioritized the operational objectives of forcing the Roki Tunnel before Georgian forces could block the access across the Caucasian Mountain Range and induce a collapse in the Georgian Army by aggressive and offensive maneuvers. On the other hand, in order to achieve a very high rate of advance and rapid accomplishment of operational objectives, the Russian forces advanced mounted and in road march columns, avoiding deploying for combat, bypassing resistance and forfeiting tactical precautions such as reconnaissance and preparatory fires. In the 2014 Invasion of Crimea, the forces in the initial wave were light, scattered, rapidly advancing and inferior to the Ukrainian forces on the peninsula, making them vulnerable if the Ukrainian defenders had resisted. However, the operational-level objectives of taking control of important infrastructure and isolating and pacifying Ukrainian forces had primacy. Finally, in the initial phase of the 2022 Invasion of Ukraine, Russian forces again attacked in road march columns, with minimal reconnaissance and tactical preparations, and with a very high rate of advance to reach objectives deep inside Ukrainian territory. This time the defenders had both the will and ability to put up a heavy resistance and, contrary to the previous cases, the Russian forces failed in reaching their objectives.

The origins of this emphasis on the operational level of warfare stretch back to the development of operational art in the inter-war period and are central in Russian military theory. It was the

fundamental problem of penetrating a modern defense in depth and establishing decisive maneuver, illustrated by the trench lines of World War I, that was the starting point for this development. Thus, in the inter-war period, a Soviet generation of military theorists devised the deep operations theory, based on previous experience and the emerging technologies of motorization, mechanization, and flight. The fundamental argument was that the substantial complexity of modern warfare, creating a need to arrange all battles into a coherent whole, led to the necessity of an operational level of warfare between the strategic and tactical levels. Additionally, the lack of decisiveness during World War I prompted Soviet military-theorists to look for new methods to achieve decisive outcomes. In deep operations theory, a large-scale penetration of the opponent's defensive lines and a subsequent decisive maneuver into the depth was the prescribed solution. As the 1936 Field Regulation for deep battle puts it:

> The fighting of the Red Army will be carried out towards the destruction [of the enemy]. Achieving a decisive victory and completely crushing the enemy will be the main goal in any war imposed on the Soviet Union. (…) Modern technical means of combat make it possible to achieve a simultaneous defeat of the enemy's combat system throughout its entire depth. The possibilities for a rapid redeployment, suddenly bypassing [enemy forces] and seizing the rear of the enemy, reaching his axes of retreat, have increased. In an attack, the enemy must be surrounded and completely destroyed (*Vremennyy Polevoy Ustav [PU-36]*, 1936, pp. 9, 16).

Consequently, as such an operation likely demanded a large part of the available resources to succeed, the emphasis needed to be at the operational level of warfare. Soviet operational art was also influenced by experience during the Soviet Civil War, which involved smaller force densities and thus more open battlefields. The retention of large reserves, which were subsequently used in large-scale offensives and counteroffensives, was crucial to the Soviets. Equally, during World War II, large-scale offensives, involving penetrations and mechanized maneuvers into the depth of the German defenses sustained the emphasis on the operational level of warfare. Consequently, centralization at the operational level of warfare has deep roots in Soviet military history.

Also in modern Russian military theory, the directing role at the operational level of warfare is emphasized. Colonel S. G. Chekinov and Lieutenant General S. A. Bogdanov, two renowned Russian theorists, explain the operational level of warfare as a computer program. They refute the concept of operational art as something distinctive and argue that, as the art of devising operations is present on all levels, operational art is inseparable from military art. However, using a computer metaphor, they argue that:

> The function of command and control elements at the operational level is to plan, organize, and, more precisely, program the operation. [Looking at a computer] The essence of programming lies in the development of an algorithm for solving a problem, and then describing it in machine (computer) language, translating it into a sequence of machine instructions, which, by its execution, leads to the solution of the problem' (Chekinov & Bogdanov, 2015b, p. 30).

The function of the tactical level, on the other hand, is that of execution. They elaborate:

> The purpose of tactics is to achieve already given objectives by executing tasks. Tactical tasks, as a rule, are reasonably local, well formalized and, one might say, tangible (Chekinov & Bogdanov, 2015b, p. 30).

What is most interesting here is that even Chekinov and Bogdanov, renowned for their writings on "New Generation Warfare", emphasize the systemic nature of warfare, in which the operational level of warfare creates an "algorithm" or a "program" that directs the units at the tactical level. This can be recognized in Russian terminology. Operations (*operatsiya*), which by definition is at the operational level of warfare, is a form of military activity (*voyennyye deystviya*) which is "according to a single concept and plan", while combat (*boy*), which is the primary form of *tactical* military activity, is a combination of firepower, maneuver and strikes (*udar*) to solve tactical tasks (Rukshin et al., 2009, pp. 152–153). In the definition of combat (*boy*), there is no mention of a concept or plan; on the contrary, it is emphasized that combat (*boy*) is an activity that is substantially restricted in space and time (Rukshin et al., 2009, p. 153). Consequently, this points to a tactical level of warfare which has a purpose of executing the concepts and plans that are developed at the operational level. In other words, the operational level of warfare is clearly prioritized, and the role of the tactical level is largely reduced to that of execution.

An encyclopedic definition of tactics reiterates the instrumental role of tactics – that tactics should execute plans devised at the operational level. According to this entry: "[T]actics are the basis for achieving operational and strategic success. It is through tactics that the implementation and achievement of operational and strategic plans is carried out" (Tyutyunnikov, 2018a, p. 164). While the subordination of the tactical level of warfare to the operational level is arguably not noteworthy, there seems to be a Russian perception of tactics as an instrument or tool to manifest operational level plans and objectives. The definition continues:

> One can only partially agree with such a monolithic assessment of the role of tactics (…). Tactics will also play a defining role (…). But tactical actions in such conditions will not be the main, but supporting ones, and then most likely only at the initial period of war.

> Subsequently, during a long and intense confrontation between the parties, multiple defensive and offensive operations [which are by definition at the operational level of war] will undoubtedly unfold, in which tactics will take their rightful place as a precondition and foundation for achieving operational and strategic successes (Tyutyunnikov, 2018a, p. 164).

It is important to note that the use of the word "operations" in the quote above is not arbitrary. In Russian military vocabulary, an operation belongs, by definition, to the operational and strategic levels of warfare ("Operatsiya," n.d.). Consequently, according to the discussion above, there seems to exist a view on tactics that differs from simply "operations on a small scale". Tactics seem to fill an instrumental role of execution, primarily to implement plans and objectives at the operational and strategic levels of war.

The crucial role of the operational level of warfare can also be seen in the Russian command system. Russian forces and operations are arranged in a hierarchical system based on size and consisting of five echelons:[29] the strategic, operational-strategic, operational, operational-tactical, and tactical (Rukshin et al., 2009, p. 152). The highest level (strategic) is embodied by the General Staff, who plan and lead military operations at a national level. In 2014, the National Defense Management Center (*Natsial'noy Tsentr Upravleniya Obarony* (*NTsUO*)) was established as the General Staff's command post and situation center, responsible for coordinating and leading military activity in wartime and peacetime (Tyutyunnikov, 2018a, pp. 325–326). However, the most interesting and discussed command level of the Russian Armed Forces after the Cold War is perhaps the operational-strategic level, fulfilled by the military district and its headquarters, the Joint Strategic Command (*Ob'yedinennoye Strategicheskoye Komandovaniye:* (*OSK*)) (Sokolov, 2019). The OSK usually commands the forces on a "strategic direction" (the Russian geographical designation for strategic significance) and are responsible for conducting operations to achieve strategic goals. In the Soviet Armed Forces, the wartime "*Front*" fulfilled this role. Fleets, such as the Northern Fleet, are sometimes also formations on this level (Shul'deshov et al., 2019, pp. 17–19; Sokolov, 2019). On the operational echelon, the combined arms army and the tank army are the primary units. Additionally, air and air defense armies in the Russian Air Force, and flotillas in the Navy are other examples of units on this echelon. These units may be geographically designated an "operational direction", the operational equivalent of the "strategic direction". The army corps is the primary unit of the operational-tactical echelon. This formation is not much used in the Russian Armed Forces; however, the land component of the fleets is usually an army corps such as the 14th Army Corps of the

[29] Not to be confused with echelonment of forces (consecutive lines).

Northern Fleet. Finally, the tactical echelon consists of divisions, brigades and independent regiments ("Operatsiya," n.d.; Tyutyunnikov, 2018a, pp. 260–262).

This arrangement of Russian command echelons is interesting in relation to the 2022 Invasion of Ukraine. With this organizational framework, it is challenging to understand the full scope of the arrangement of the Russian invasion force. On the other hand, the 2008 Invasion of Georgia seems fairly straight-forward: the operational-strategic level was realized by the OSK of the North Caucasus Military District, and the operational level mainly by the 58th Combined Arms Army ("Voyna v Yuzhnoy Osetii," 2008). During the 2014 Invasion of Crimea, the OSK seemed to be from the Southern Military District (Whisler, 2020, p. 250). In Donbas, due to its location in the area of responsibility of the Western Military District, the OSK from this military district may also have been involved in addition to the OSK from the Southern Military District. Units at the operational level included the 58th, 20th and 8th Combined Arms Armies (Whisler, 2020, pp. 250–251). However, in the 2022 invasion of Ukraine, the apparent presence of multiple OSKs makes it more difficult to grasp the overall structure of the Russian command echelons. While the joint coordination and cooperation between the different attack directions during the initial phase of the invasion was reportedly poor, there was obviously a command level above the OSKs, having at least some rudimentary coordinative function (Jones, 2022, pp. 4–6; Kofman & Lee, 2022; Watling, 2022). The presence of a general strike campaign and the fairly well-coordinated launch of the invasion points to this. Most likely, the overall planning and rudimentary coordination were conducted by the General Staff; however, the command arrangement below the General Staff is less clear.

In the Soviet system there would have been another command level that would have largely mitigated the Russian problems of overall coordination in the initial phase of the 2022 invasion of Ukraine. The "theater of military activity" (*Teatr Voyennykh Deystviy* (*TVD*)) was a command level covering a geographically delineated zone that contained military activity on a strategic scale. Within the TVD there could be one or more strategic directions, i.e. one or more *fronts*, and the TVDs themselves, which were commands at the strategic echelon, acted as an interlocking entity between the strategic level of the Soviet High Command and the operational-strategic *fronts* ("Teatr Voyennykh Deystviy (TVD)," n.d.; Tyutyunnikov, 2018a, p. 260). TVDs were very large, typically encompassing a continent with its adjacent coastal and maritime areas and were usually meant to be established in wartime although there were periods with standing TVDs in Soviet history. It seems that TVDs went out of use in conjunction with Russian military reforms in the 2000s (Kofman et al., 2021, pp. 40–46). While Russian publications often make references to TVDs or operations in the TVD, they seldom treat them as a command level with a physical headquarters (see for example Tyutyunnikov, 2018a, p. 259; Voskresenskiy, 2020). Formally, there is also not a command level

between the General Staff and the OSKs (*Lektsiya No 1*, 2013, p. 31; Shul'deshov et al., 2019, pp. 17–19). However, because there were four OSKs deployed in the 2022 invasion of Ukraine, there were likely four strategic directions: Kyiv, Kharkiv, Donbas and Southern Ukraine (see Subchapter 3.4). Consequently, while each of the strategic directions would likely be commanded by an OSK, there would be no overarching theater command between the OSKs and the General Staff. In fact, in 2017, General Colonel S. V. Surovikin and Colonel Yu. V. Kuleshov pointed to the lack of an overarching and coordinating entity in a potential TVD and argued that:

> [A]n analysis of the development of forms and methods of warfare shows that successful operations are only possible through coordinated actions, using the strength of all interdepartmental structures (…). The forces and assets assigned by the General Staff (…), including armed forces of [other] federal authorities, must be integrated into a joint, [even] interdepartmental - group of forces in the TVD (Surovikin & Kuleshov, 2017, p. 8).

and that:

> Increasing the efficiency and stability of command and control of [an interdepartmental group of forces] is becoming a decisive factor in modern warfare. The command and control systems of the created groups must be integrated into a single command and control structure, which will ensure the receipt and processing of situational data in real time in a single information space (Surovikin & Kuleshov, 2017, p. 8).

Tellingly, Surovikin was later appointed as the first supreme commander of the "special military operation" in Ukraine in October 2022, seven months after the invasion started ("Surovikin Appointed Commander," 2022). In other words, his call for a TVD-wide integrated command in 2017 was not heard until well into the operation in Ukraine.

In addition to the lack of a strategic headquarters above the OSK, there seems also to be a realization in Russian military theoretical literature that the levels of warfare are increasingly compressed in modern military operations. For example, when analyzing modern warfare, Captain First Rank (naval) V. G. Voskresenskiy stated that:

> In modern military conflicts, the following basic patterns of armed struggle appear [one of them]: the success of warfare is dependent on the unification of efforts of all branches and arms of the armed forces (AF), [and] the coherence of goals, objectives, means and methods of activity at the levels of strategy, operational art and tactics (Voskresenskiy, 2020, p. 72).

Similarly, General Major V. K. Kopytko argues that the areas of responsibility of the strategic and the operational level of warfare intersect. He writes:

> [T]he military district previously formed a front and was intended to conduct military operations on a strategic direction, and the army (army corps) in an operational direction. The plan was to use several fronts in a TVD operation. Currently, the order of battle of military districts does not allow the formation of several fronts on the basis of military districts. Therefore, it is very problematic to classify military operations carried out by groups of forces created on the basis of military districts as strategic operations in a TVD. Apparently, such operations will have strategic goals and spatial scope, but the composition of the groups of forces created to conduct them, and the forces and means involved, as well as the tasks they solve, will not exceed the operational-strategic scale [the OSK] (Kopytko, 2016, p. 19).

On the other hand, he argues that the range of modern firepower, the increased ability to connect the whole force into a common information network, and the possibility to destroy key components of the enemy military system instead of his complete force, have made means and forces at the tactical level of warfare relevant in higher echelons (Kopytko, 2016, pp. 20–21). For example, tactical ballistic missiles could have the range and precision to strike operational or strategic targets. Consequently, he puts the command and control center of gravity at the OSK – the hub that has to assume more of the strategic responsibilities and at the same time utilize more of the tactical assets – as the primary joint entity in the Russian chain of command.

Consequently, the Russian prioritization of the operational level of warfare is both the result of a lasting view of the tactical level as one of the execution of plans and concepts from higher levels of warfare and a result of the particular Russian command arrangement. A lack of a TVD-level strategic headquarters, the compression of the levels of warfare and thus the increased expectations of the OSKs as the main joint command hub may explain some of the lack of overall joint integration and limited coordination between the OSKs reported in the initial phase of the 2022 Invasion of Ukraine. Additionally, as discussed in the case study chapter (3.4), the cultural concept of *edinonachaliye* reduces the inclination to share resources horizontally between the different OSKs and thus the ability to establish overall joint integration. As will be discussed in the next section, the BTG based force structure caused an additional strain on the operational level commands (the army and army corps headquarters). Consequently, the workload of the OSKs and army headquarters in a largely untested arrangement of several strategic directions in the same TVD and the battalion (BTG) as the principal tactical unit seems to have been somewhat overwhelming and thus explains some of the lack of performance in the initial phase of the 2022 full-scale invasion. However, it is important to note that much of the poor tactical performance, as for example observed in the 2008 Russo-Georgian War and the 2022 Invasion of Ukraine, was also *per design*. The tactical commanders were

expected to execute given orders and advance rapidly to reach operational objectives largely without considering the local tactical situation. Combining the Russian prioritization of the operational level of warfare with the characteristics of surprise, penetration, the exploitation of the initial period of war and *aktivnost'* outlines a distinct Russian blueprint for invasions, which will be elaborated on in subchapter 4.5.

A new combined arms warfare system – or a new version of the old?

The four case studies showed a clear development in several areas of the Russian combined arms warfare system. A much-discussed issue in Western literature is the increasing role of the battalion as the primary tactical combined arms unit, manifesting itself as the Battalion Tactical Group (*batal'onnaya takticheskaya gruppa* (BTG)) in Russian terminology. However, there have also been other significant developments since 2007. The increased use of electronic warfare assets and UAVs are of great importance. While these are not new contributions to the Russian Armed Forces, they were implemented on an incrementally increased scale during the period. Finally, the effort to put strike and reconnaissance assets together in an automatic command and control structure, being able to engage targets in near real-time, has been increasingly more extensive and sophisticated. Arguably, there has been a clear move towards a leaner tactical force, trading mass and endurance for artillery and other enablers, and relying increasingly more on fires instead of maneuver forces.

In the period since 2007, the Soviet emphasis on combined arms warfare has continued, if not strengthened, in the Russian Armed Forces. However, the basic combined arms unit has somewhat changed. In the Soviet Army the basic combined arms unit was the regiment; this was the lowest level unit in which the commander was expected to plan independently and in which the components of the combined arms system were put together (Donnelly, 1988, p. 216). After comprehensive Russian reforms, initiated in the late 2000s, the battalion emerged as the basic combined arms unit in certain circumstances. The BTG has been a recurring topic in Western literature since 2007 (see for example Barrie & Hackett, 2020, pp. 69–70; Grau & Bartles, 2016b, p. 37, 2022; Sutyagin & Bronk, 2017, p. 22). However, Russian authorities have also used the concept regularly. For example, the combat readiness of the Russian Ground Forces, VDV and naval infantry is often measured by the number of BTGs they can muster at short notice. In 2016, the chief of the Russian General Staff, Gerasimov, stated that there were 66 BTGs established within the Russian Armed Forces and that these would soon double in number (Kukhmar', 2016). However, while the Russian Armed Forces have used BTGs extensively in conflicts since 2007, it does not seem that the BTG is formally implemented. In Russian field manuals as late as 2013 there is no mention of the BTG (see for example *Boevoy Ustav [Field Manual, Brigade]*, 2011; *Boevoy Ustav [Field Manual, Division,*

Brigade, Regiment], 2013; *Boevoy Ustav [Field Manual, Battalion, Company]*, 2013). On the other hand, other types of procedurally created units, established on the basis of existing force structure, are often mentioned. For example, one field manual describes the different roles a motor rifle or tank battalion can fill:

> A motorized rifle (tank) battalion can attack in the first echelon of a formation (regiment), form a combined arms reserve, operate as a vanguard, or forward, raid, special and enveloping detachment, and a motorized rifle battalion can also operate as an assault detachment (*Boevoy Ustav [Field Manual, Battalion, Company]*, 2013, p. 228).

This strongly indicates that the BTG is not a formal part of Russian tactics and is created out of necessity or unique practical experience. In other words, the use of BTGs is not how the Russians would preferably fight in regular warfare.

However, except for the possible exception of the invasion of Crimea, all the case studies have shown concrete use of the BTG as the primary combined arms unit. The commander of the 58th Combined Arms Army during the 2008 Russo-Georgian War, General Lieutenant A. N. Khrulëv, argued that maintaining battalion-sized high combat readiness forces in the structure, in the shape of BTGs, was crucial in reacting so quickly to a fast-developing security situation. Additionally, he stated that the use of BTGs was due to experience from the Chechen War (Shurygin, 2012). However, the origin of the BTG stretches at least back to the 1980s. The Soviet Army experimented with smaller-sized combined arms units than the regiment, which was normally the lowest echelon that could carry out independent combined arms warfare (Grau & Bartles, 2022). While the case study of the invasion of Crimea did not find any tangible indications of the use of BTGs, it does not mean that the forces were not organized into BTGs. However, in the analysis of the Donbas case there were clear indications of the use of BTGs. Several sources reported the presence of these battalion-sized groups (see for example McDermott, 2015, p. 20; Sutyagin & Clarke, 2014, p. 9; The White Book of the ATO, 2017, p. 31). As discussed in the case study chapter, the use of BTGs as the primary combined arms unit encompassed the Russian forces at the Russo-Ukrainian border, the Russian forces operating on Ukrainian territory, and the Russian-trained separatist forces in Donbas. Finally, the initial phase of the invasion of Ukraine in 2022 was largely conducted by BTGs. According to several analysts, the Russian force deployed at the Ukrainian border consisted of more than 100 BTGs that were subsequently used in the invasion (Bowen, 2022b, pp. 1–2; Jones, 2022, p. 6).

The BTG is primarily seen as a rapid reaction force that can be used in military operations below the threshold of a major war in defense of the Russian Federation. Colonel A. V. Khomutov explains:

> [T]he Minister of Defense of the Russian Federation and the Chief of the General Staff of the Russian Armed Forces have repeatedly stated that military [conscripts] will not be sent to perform tasks in a state of emergency or to participate in hostilities. Considering that currently almost all OFTZ SV [combined arms tactical formations in the Ground Forces] are mixed [contract soldiers and conscripts], most of them cannot be used in an armed conflict in full force. (…) This circumstance causes a need to create temporary military formations in the Russian Armed Forces, fully staffed by contract military personnel (…). Currently, these are battalion tactical groups formed in the Ground Forces, VDV and in the naval infantry units of the coastal forces of the VMF (Khomutov, 2020, p. 57).

Consequently, this indicates that the BTGs were formed as an answer to specific structural challenges and not as an entity with a specific role or function such as forward detachments (*peredovye otryady*) or assault detachments (*shturmavye otryady*). A description of the BTGs established in the Southern Military District from 2022 corroborates that:

> [T]he combat training of motorized rifle and tank units of the Southern Military District is aimed at improving their marching training, practicing tactical air assault operations, raiding and outflanking detachments to capture and hold designated lines (regions, important objects), break through the enemy's prepared defense in certain directions, surround him and develop the success [of the penetration]. These tasks are carried out by specially formed battalion tactical groups (BTG) (Nasybulin, 2022, p. 71).

In other words, the BTG can fulfill a range of functions and roles on the battlefield; thus, it seems that the BTG term is reserved for describing a battalion-sized combined arms unit that is capable of some independent actions.

Despite the fact that the Russian reliance on the BTG came out of necessity, and not as a deliberate decision to change the permanent force structure into a BTG-system, it can still reveal something about Russian military theoretical preferences and thus their way of warfare. Firstly, the acceptance of creating complete combined arms units on the basis of a maneuver battalion, instead of holding a certain portion of the brigades at a higher readiness level, shows a perception of fires in particular, but also other enablers in general, including electronic warfare assets and air defense, as relatively more important than maneuver forces. This was very visible during the 2022 invasion of Ukraine. One of the largest weaknesses of the Russian forces was their lack of available dismounted infantry (Kofman & Lee, 2022). As Soviet and Russian maneuver forces are traditionally low on dismounted

infantry, this deficiency would have been even more acute.[30] As discussed in the case study chapters, while the BTG structure was used both in the intervention into Donbas from 2014 and in the initial phase of the full-scale invasion in 2022, the use of BTGs seems to have been more successful in Donbas when warfare was still limited. The use of auxiliary infantry in the shape of separatist forces, filling the gaps and flanks in between the BTGs, seems to have mitigated the lack of maneuver forces to some extent. However, in the 2022 invasion, the area of operations and the available forces made it likely impossible to establish a continuous force presence. Consequently, the BTGs resembled "combined arms islands" on a vast battlefield.

The wide variety of assets within the BTG, combined with its independent actions, put a high demand on the battalion command. Additionally, in the initial phase of the 2022 invasion, there are strong indications that there were no command levels between the BTG and the army, i.e. the brigade and regimental command levels. In other words, it was fully conceivable that the operational level command, for example a combined arms army, commanded BTGs directly, which would put additionally strain on the tactical command and control system. The Russian use of BTGs after 2007 is not a novel development – ideas and experimentation of battalion-sized combined arms units were present long before that; however, it was the result of a requirement to increase combat readiness and the Russian view of modern warfare as very reliant on combined arms, and in particular the supporting arms such as artillery and electronic warfare.

While they are far from new means, electronic warfare assets, long-range precision-strike weaponry and UAVs have been increasingly introduced into the Russian Armed Forces since 2007. Already by the 1980s, Soviet military-theorists saw these new tools as important, and that their importance would increase in the future. Unmanned flight had long been an area of research in the Soviet forces by the 1980s. However, according to Ogarkov among others, it was in the late Cold War period that UAVs were seen as one of the technologies that could revolutionize warfare (McDermott, 2022b). Further, according to Reznichenko, one of the authors of *Taktika*, electronic warfare had become a crucial component in warfare by 1991:

> [T]he significance of radio-electronic suppression of enemy radio-emission objectives has sharply increased. Under conditions of extensive use of radio-electronics and guided weapons, radio-electronic suppression is becoming one of the principal components of battle

[30] A fully staffed Russian motor-rifle platoon typically has 21 dismounts compared to a US Army mechanized platoon with 27 dismounts or a US Marines platoon of 45 dismounts (*Military Organization United States*, n.d.; *Uchebnoe Posobie: Organizatsiya*, 2013).

> and operations, called upon to disrupt enemy troop and weapons control (Reznichenko, 1991/1995, p. 333).

Finally, precision-strike weapons, perhaps the most important of the new technologies to the Russians, were seen to have the potential to completely alter the character of warfare. Largely, these weapons could change the mode of warfare from a traditional approach with regular forces in contact, to "non-contact warfare", which implies very little direct contact between the belligerents' regular land forces. The combination of range and precision of these weapons was perceived as very powerful – they could be compared to nuclear weapons in strategic effect (Zakharov, 1991/1995, pp. 352–354). However, it is when these three elements are put together that we see a clear development of the Russian way of regular land warfare. This will be elaborated on further below and is intimately connected to the "fire destruction of the enemy", as explained in the next section.

The Russian use of UAVs after 2007 has been distinctly incremental. In Georgia in 2008, the lack of UAVs in any significant number is particularly mentioned in several sources (A. Cohen & Hamilton, 2011, p. 34; Pallin & Westerlund, 2009, pp. 411–412). As few as 2-3 UAVs were reportedly lost (Tsyganok, 2011, p. 247). On the other hand, the intervention into Donbas from 2014 involved significant implementation and experimentation with UAVs. For example, Karber, having conducted extensive field research in Donbas in 2014 and 2015, reported that already by the summer of 2014 large quantities of UAVs of several types were introduced into the Donbas area of operations (Karber, 2015, Chapter I). Finally, during the 2022 full-scale invasion of Ukraine a wide range of types of UAVs were used at all levels of warfare and in all branches of the armed forces (Edmonds & Bendett, 2023, pp. 3–16). This shows a clear development, from almost no UAVs in 2008, through experimentation and implementation in Donbas from 2014, to an integrated element of the Russian combined arms system in the 2022 invasion. An article in *Voyennaya Mysl'* from 2020, describing the historical implementation of UAVs in the Eastern Military District, supports this incremental introduction of UAVs in the Russian Armed Forces. It states that:

> A new stage in the development of unmanned aircraft in the Eastern Military District began in 2013 with the creation of UAV squadrons as part of aviation units and UAV companies as part of motorized rifle formations [brigades and divisions]. Forpost medium-range UAV complexes were the first to enter service in the military district. Then, in 2014, they began the supply of complexes with short-range UAVs "Orlan-10" and "Granat-4" and close operation UAVs "Granat-1, 2, 3", "Eleron-3", "Tachyon", [and] "Zastava" (Skvortsov, 2020, p. 77).

Later, in 2019, the military district began the introduction of commercial drones: "[S]ince 2019, formations of the Eastern Military District have been equipped with Mavis-Pro helicopter-type UAVs, capable of conducting aerial reconnaissance at ranges of up to 4000 m" (Skvortsov, 2020, p. 78). Finally, this article stated that, in coherence with the overall plan for the Russian Armed Forces towards 2025, the military district would work towards introducing "UAV companies into the structure of all motorized rifle and tank units without exception", and also introduce armed UAVs (Skvortsov, 2020, p. 79). Overall, there was a more than ten-fold increase in the number of UAVs between 2011 and 2016 in the Russian Armed Forces. As with the developments and experience gained in Donbas, the Syrian Civil War also provided the Russians with valuable experience. In 2017, more than a thousand sorties were flown each month with UAVs (Novichkov et al., 2018, p. 253). Consequently, this shows the Russian emphasis on UAVs as an important asset in modern warfare and the incremental introduction from 2007.

The period since 2007 has also shown an increased attention to the use of electronic warfare in the Russian Armed Forces. This development is to a large extent comparable to the development of the use of UAVs. However, electronic warfare has been crucial to the Soviet and Russian Armed Forces since long before 2007. An article in *Voyennaya Mysl'* explains:

> It should be noted that by the mid-70s, electronic warfare and its forces and means in relation to army operations had emerged as a type of operational support for combat activity, which was confirmed by relevant governing documents. Further improvements in the eighties in the area of command and communication subsystems by the most likely opponent, equipping troops with data transmission subsystems of the [JTIDS] type and EPLRS, led to the need to develop a fundamentally new material base and ways of application of the use of electronic warfare equipment (Korolev et al., 2016, p. 16).

Even in the 1930s, there was an awareness of electronic warfare. Electronic reconnaissance (intercepting and triangulating the opponent's radio communication) was mentioned as one type of reconnaissance in the PU-36 field manual (*Vremennyy Polevoy Ustav [PU-36]*, 1936, p. 29). In spite of this, according to Russian military behavior, the ability to conduct electronic warfare seems to have significantly reduced in the mid-2000s. Available reporting from the 2008 Georgian War does not point towards extensive use of electronic warfare (A. Cohen & Hamilton, 2011, p. 34; Pallin & Westerlund, 2009, p. 408). In Donbas, on the other hand, modern Russian electronic warfare equipment was introduced to the separatist forces, most likely provided by their Russian patrons (*Respondent 21, Interview 1*, personal communication, 2021, p. 1; Shirokorad, 2018, p. 197). Thus, as with UAVs, there seems to have been a focus on implementation and experimentation in Donbas

since 2014. Finally, during the 2022 full-scale invasion, electronic warfare assets were extensively used. They were used for a range of purposes, such as the suppression of enemy air defense, but perhaps most significant is the wide distribution of assets (Bronk et al., 2022, p. 7). One source, relying on information from the Ukrainian forces, reported that at some point there were as many as one large electronic warfare system per 2 km frontline (Zabrodskyi et al., 2022, p. 37). Consequently, Russian military behavior since 2007 points to a substantial emphasis on the use of electronic warfare and an incremental implementation of capabilities.

In the Russian military system, the electronic warfare forces are classified as a "specialist arm" (*spetsialnye voyska*) (Shul'deshov et al., 2019, p. 30). In Russian terminology, specialist arms are forces that support the branches and combat arms (*vidy i rody voysk*). Engineer and signal forces are other examples of specialist arms (Shul'deshov et al., 2019, pp. 20–21). However, as an indication of its central role in Russian land warfare, upgrading electronic warfare forces from a "specialist arm" to a "combat arm" (*rod voysk*) in the land forces was a consideration. As combat arms, as opposed to specialist arms, should be able to achieve tasks (have an effect on the enemy) independently with their own weapons and tactics, the electronic warfare forces needed their own mission set ("Rod Voysk [Combat Arm]," n.d.). According to one such Russian discussion:

> From the designation of the electronic warfare forces as a combat arm in the ground forces, it follows that their target should be to disorganize the enemy's information support [command, control, communication] and his weapon guidance. The decomposition of this target function made it possible to formulate a list of functional tasks, which must be assigned to and performed by electronic warfare forces in army operations as a combat arm of the military. These functional tasks include: disorganization of the enemy's information support during direct control of combat in operations; disorganization of the enemy's information support when he uses guided weapons; disorganization of information support for the enemy's electronic warfare forces (counter-electronic warfare) (Korolev et al., 2016, pp. 14–15).

Consequently, it does not seem that the electronic warfare forces have achieved their designation as a combat arm, but there is still little doubt that Russian military theoreticians see great potential in the use of electronic warfare. The emphasis on "disorganization of the enemy information system", mentioned several times in the quotation above, is perhaps key to understanding how the Russians see the potential of electronic warfare and its future applicability. According to another input into this discussion:

> Modern combat is characterized by the increasing use of guided and radio-electronic weapons, advanced radio-electronic and information technologies, and the creation of a unified information space, aimed at achieving information superiority over the opposing side (Kaminskiy, 2017, p. 32).

NATO forces, perceived as a potential opponent by the Russians, are largely reliant on information and communication systems during warfare, for example within the realm of network-centric warfare. To win in a war with such a sophisticated opponent, attacking the information and communications systems would be beneficial. Thus:

> The prevailing role in influencing these systems and means to *disorganize* the command and control of enemy forces and weapons guidance is assigned to (…) electronic warfare. Moreover, their contribution to solving this problem is already so significant that in the near future, at the tactical level, it can, in our opinion, become decisive. As a result, it is necessary to search for effective methods of combat use of diverse electronic warfare forces and means, ensuring the successful *disorganizing* of the enemy command and control and weapons guidance [emphasis added] (Kaminskiy, 2017, p. 32).

Importantly, other means than traditional electronic warfare assets are included within the Russian conceptualization of electronic warfare and the goal of disorganizing the enemy information and communications system. For example, directed energy weapons, e.g. electromagnetic pulse weaponry, and cyberwarfare have been increasingly attributed to electronic warfare in Russian terminology (Kjellén, 2018, p. 84). This is consistent with the case studies. In the Russian intervention into Donbas, cyber-capabilities were used to infiltrate the Ukrainian fire direction system (Shirokorad, 2018, pp. 206–207). This caused coordinates of Ukrainian units to fall into Russian hands. Similarly, in the 2022 invasion, one of the most significant cyber-attacks against Ukraine was the attack on the Viasat satellite communication, severely disrupting Ukrainian long-range communications (Bing & Satter, 2022). Additionally, the aim of disorganizing the enemy's command and control has implications for the Russian view on decision-making as well. This will be elaborated on in the later section "*Aktivnost'*, rapid decision-making and the initial period of war".

Naturally, as Russian military theorists see electronic warfare as part of the overall combined arms system, they will try to combine electronic warfare, as an addition with increased importance, with other elements of the combined arms system. For example, electronic warfare is tightly coupled with the development of UAVs in Russian military theory. The Russians realized early on how UAVs could increase the effectiveness of jamming. According to the above-mentioned *Voyennaya Mysl'* article

about the historic importance of electronic warfare, one of the primary realizations as the technology became substantially developed in the 1980s was that:

> the fundamentally new electronic warfare equipment led to the need to develop the use of the following electronic warfare means on unmanned aerial vehicles: jammers and [kinetic attack]. This made it possible to (…) disrupt the functioning of command, control and communication subsystems by the "destruction of information systems with radiation-homing weapons" (…) as well as the implementation of "area jamming" (Korolev et al., 2016, p. 16).

Another instance of the intersection in the use of UAVs and electronic warfare is that the primary antidote to the UAV threat is electronic warfare through jamming. Russian military behavior shows extensive use of electronic warfare to block the control of UAVs both in Donbas from 2014 and after the full-scale invasion (Shirokorad, 2018, p. 128; Zabrodskyi et al., 2022, p. 59). Another *Voyennaya Mysl'* article, based on experience from the full-scale invasion of Ukraine, states that:

> The main methods of countering UAVs (…) today are: the destruction of them by missile and cannon air defense systems and electronic suppression of their systems and control channels by electronic warfare means (REP). Repelling a massive UAV attack with air defense systems is economically irrational due to the use of expensive missiles against a large number of relatively cheap UAVs (Mokhammad et al., 2022, p. 47).

New uses of UAVs have also been increasingly implemented and integrated into the combined arms system. For example, a Ukrainian field manual from 2023, describing how to combat Russian assault detachments (Wagner), explained that "a key element of Russian activities are drones, from which the entire cycle of command and control takes place" (*Bor'ba so Shturmovymi Podrazdeleniyami*, 2022, p. 7). Thus, commanders were largely using UAVs for observation and relaying communications. Another use of UAVs, prominent in the war in Ukraine, was the combination of UAVs for observation and so-called loitering munition ("kamikaze" UAVs). A Russian field manual, describing defensive operations against Ukrainian armored attacks, stated that one of the recommendations for stopping Ukrainian tank attacks was to deploy a combination of Lantset loitering munition and Zala UAV for observation on the main approaches of attack (Molchanov et al., 2023, p. 49).

Consequently, the use of electronic warfare and UAVs is not only seen as increasingly important to the Russians, but also as a crucial part of the Russian combined arms system and should thus be combined with the other, more traditional, force elements such as artillery and infantry. In the 2022

invasion of Ukraine, these elements of Russian combined arms were also introduced in large quantities. For example, the Russian field manual for "assault detachments", urgently issued to the Russian forces during the summer of 2022, prescribed the use of electronic warfare assets at the battalion level and UAVs at the battalion, and even down to the company level (*Osobennosti Vedeniya Shturmovogo Otryada*, 2022, pp. 5–6).

While one of the primary applications of electronic warfare in Russian military-theoretical writings is the electronic strike (*radioelektronnyy udar*), there is also an alternative, the electronic-fire strike (*radioelektronno-ognevoy udar*), which combines electronic and conventional firepower, (Kholuyenko et al., 2017). One definition describes electronic-fire strike as:

> Electronic-fire strike - a set of coordinated and specially organized electronic and fire strikes, interconnected in terms of goals, tasks, location and time, carried out by forces and means of various combat arms and specialist arms in accordance with a single idea and plan to carry out the tasks of disorganizing the enemy's command and control system and weapons guidance at specified directions in a timely manner with a specified efficiency (Kholuyenko et al., 2017, p. 26).

As such, this is another combination of the "new" technologies, implemented after 2007. In this case, it is the combination of electronic warfare and precision-strike weaponry, and also traditional firepower, that is put together in a system to achieve greater effects. Similarly, the Russian concept of reconnaissance-strike and reconnaissance-fire complexes also illustrates this.[31] These complexes are defined as:

> A reconnaissance-strike (reconnaissance-fire) complex (RUK (ROK)) is the organizational, technical and functional formation of missile (artillery) units, combining reconnaissance, weapon guidance, command and control, and fire destruction means into a single circuit capable of, with high accuracy and in an automated mode, detection, target designation, weapon guidance and the reliable destruction of enemy targets in the shortest possible time (Tyutyunnikov, 2018b, p. 36).

At the core, these complexes are the integration of reconnaissance, command and control, and fires assets, preferably precision-strike weaponry, into some sort of automated circuit or command loop.

[31] The reconnaissance-strike complex (RUK) operates at operational depths and usually involves the use of ballistic missiles with conventional warheads. The reconnaissance-fire complex (ROK) operates at tactical depths and utilizes tactical artillery. A third concept, the reconnaissance-fire *system*, is a hierarchical integration of several ROKs (RUK) of a large formation into an interconnected system of reconnaissance and fires assets (Grau & Bartles, 2018; Tyutyunnikov, 2018b, p. 36).

Further, this source also presents reconnaissance-electronic-fire (strike) complexes, which involve electronic warfare acting as both reconnaissance asset and effector (Tyutyunnikov, 2018b, p. 37). An article in *Voennaya Mysl'* from 2020 describes a field experiment that implemented UAVs at all three elements of the reconnaissance-strike complex (reconnaissance, command and control, and fire destruction) (Anan'ev et al., 2020). Thus, the combination of the three "new" elements of the Russian combined arms warfare system (precision-strike weaponry, electronic warfare and UAVs), for example within the conceptualization of reconnaissance-fire complexes, appears to be a very strong focus in the development of Russian land warfare. An illustrating example of this focus is the Russian field manual describing the use of "assault detachments" that was released in 2022 based on experience from the war in Ukraine. It describes a battalion-sized force based on a motor-rifle battalion, i.e. the assault detachment, that is reinforced with additional artillery, UAVs and electronic warfare assets, and put together in a fire destruction system (*Osobennosti Vedeniya Shturmovogo Otryada*, 2022). The provisions from this field manual are recognizable in a RUSI-report describing Russian use of these assault detachments based on Ukrainian observations. The report describes a Russian reconnaissance-fire system, heavily dependent on UAVs for observation and communication, and consisting of interconnected reconnaissance-fire complexes at several levels. Overall, this system provided the Russians with effective and responsive fires (Watling & Reynolds, 2023, pp. 13–14).

Overall, the integration of the "new" technologies of precision-strike weaponry, electronic warfare, and UAVs into distinct systems has been a recurring trait of Russian land warfare developments since 2007. However, all elements mentioned in the discussion above have their origin well before 2007 and they are largely integrated into an existing combined arms system. Thus, the Russian combined arms system of today is an evolved and truncated version of the old Soviet system. Further, the large-scale introduction of "new" technologies, combined with the decrease of the size of combined arms units (the BTG), have created a Russian combined arms system that is very deficient in maneuver forces, but has a relative prevalence of support forces such as artillery, electronic warfare assets and air defense. This indicates a Russian emphasis on fires, rather than maneuver, which is largely conceptualized by the term "fire destruction of the enemy" in Russian military theory. This will be explained in the next section.

The central role of the "fire destruction of the enemy"

The Russian way of regular land warfare is neither artillery-centric nor tank-centric: it is fundamentally fires-centric. At the center of this fires-centric approach is the Russian concept "fire destruction of the enemy". This concept permeates Russian field manuals and military theoretical

literature. However, the definition of the term “fire destruction of the enemy” (*ognevoye porazheniye protivnika* (OPP)) is quite straightforward:

> [A] coordinated impact of forces and means of fire destruction on enemy targets and grouping as a whole in the interests of achieving the goals of the operation [operational] (combat [tactical]) or solving important operational-tactical tasks (Litvinenko & Yastrebov, 2019, p. 8).

There are two types of OPP: The “general OPP” at the operational level of warfare and the “direct OPP” at the tactical, which focuses on the enemy forces in contact with one’s own forces (first echelon). The OPP can include a wide range of forces and means, including the weapons of maneuver forces such as tank fire and automatic grenade launchers, mines and electronic warfare assets (Litvinenko, 2020, pp. 32–33). One of the most important tasks for a Russian tactical commander is to establish a “system of fire destruction” in order to conduct the OPP. This system includes all available weapons, including fire from combat vehicles and mines, and centralizes command of those assets. The system of fire should also be interconnected with the superior commander’s system (Batyushkin, 2021, pp. 21–22). Further, field manuals give OPP a prominent position, being one of the most fundamental concepts in the text, and this is true throughout the command levels. For example, at the tactical level, OPP is thoroughly presented in field manuals at division level (*Boevoy Ustav [Field Manual, Division, Brigade, Regiment]*, 2013, para. 9), brigade level (*Boevoy Ustav [Field Manual, Brigade]*, 2011, para. 9), and battalion/company level (*Boevoy Ustav [Field Manual, Battalion, Company]*, 2013, p. 18).

Russian military behavior, revealed by the case studies, showed a substantial emphasis on the use of fires to solve tasks. Admittedly, fires are a constituent element of any land force; however, Russian behavior shows a markedly reliance on fires, which are often used massively. In the 2008 Russo-Georgian War, Russian use of ballistic missiles and air support against operational targets, combined with massive use of artillery at the tactical level of warfare, allowed the rapid advance of Russian mechanized columns into Georgian territory and ultimately the rout of the Georgian Army. Similarly, it was the use of artillery, often fired cross-border, that was the primary casualty inflictor in Donbas. According to one estimate, more than 80% of the casualties were caused by indirect fire (Karber, 2015, Chapter I). The Russian Armed Forces conducted several effective fire strikes in Donbas in 2014/2015: for example at Zelenopillya right before the intervention by regular Russian forces in August 2014, and during the battle for Debal’tseve (Sutyagin & Bronk, 2017, p. 58; The White Book of the ATO, 2017, pp. 31, 36). Finally, in the 2022 invasion of Ukraine, the Russians used large amounts of artillery fire: for example, as massive fire strikes to facilitate for the advance of assault

detachments (*Osobennosti Vedeniya Shturmovogo Otryada*, 2022; Watling & Reynolds, 2022b, pp. 3–9). Additionally, Russian behavior beyond the case studies also shows a marked reliance on heavy fires, and in particular artillery. For example, the use of massive quantities of traditional artillery and air support, saturating large areas with non-precise firepower, was the main ingredient in the Russian approach in the Chechen Wars. Artillery was the "basis of Russian combat in both Grozny and Chechnya as a whole in 1999 and 2000," and used extensively within villages and other built-up areas (Oliker, 2001, pp. 57–58).

Consequently, the use of heavy fires, and in particular artillery, to defeat the opponent is central to the Russian way of regular land warfare. The OPP conceptualizes this preference. Additionally, according to several Russian military theorists, the centrality of fires has even increased. General Lieutenant V. A. Vinogradov argues:

> Massive equipping of troops with new types and systems of conventional (non-nuclear) weapons leads to an increase in the role of *fire destruction*. (…) In the recent past, fire facilitated strikes and the activities of troops to carry out tasks: in the offensive - to shatter the opponent, in defense - to repel his strikes. As fire weapons develop, inflicting massive destruction on the enemy with fire strikes as a method achieves *independent significance*. (…) [I]n the near future, with the massive use of new weapons, the main thing will be the simultaneous defeat of the opponent in the *entire depth of his formation* [emphasis added] (Vinogradov, 2013, p. 28).

Notably, the OPP is seen as a possible independent means to defeat the opponent. In other words, the use of firepower and maneuver in concert, which is seen as crucial in Western combined arms warfare, can be substituted by solely using fires, and maneuver is then subsequently used to exploit the result of this strike. In Russian terminology, the "strike with forces" (*udar voyskami*), a subcategory of *udar*, is to a large extent coherent with the Western concept of "assault"; that is, to utilize maneuver forces, and combine firepower and maneuver, in order to defeat an enemy force (Batyushkin, 2021, p. 7). However, the Russians see the use of fires, thus implicitly not the "strike with forces", as the main tool for conducting strikes (*udar*) and defeating the opponent (Bayramukov et al., 2022, p. 83). Consequently, the Russian way of regular land warfare largely shows a preference for defeating an enemy unit by destroying him with fires. Vinogradov's argument above also emphasizes the possibility of striking simultaneously in the entire depth of the enemy formation, which strongly points to the characteristic of *udar*, and positions OPP as a practical embodiment of the way of thought constituting *udar*.

Vinogradov's argument from 2013 is largely corroborated by later Russian military theoretical thought. For example, an article from 2023, based on experience from the war in Ukraine, stated that one of the most distinct trends in defensive operations is:

> [R]emote confrontation begins to prevail over contact warfare, the proportion of long-range destruction increases significantly, which necessitates the need to pay more attention to the development and implementation of reconnaissance-strike and reconnaissance-fire methods of conducting operations (Romanchuk & Shigin, 2023).

Importantly, the concepts of OPP and reconnaissance-strike (fire) complexes are intimately interconnected. The "general" type of OPP is subdivided into three categories based on the form of implementation: massive fire strike, concentrated fire strike, and systematic fire activity (Litvinenko, 2020, p. 33). The latter category is the destruction of designated targets, using reconnaissance and fires assets that are assigned to the OPP (Tyutyunnikov, 2018a, p. 296). According to a Russian analysis of OPP, this systematic version of the OPP is becoming increasingly more important:

> An analysis of the recent experience in [local wars and armed conflicts] shows another trend - a decrease in the share of massive fire strikes in the structure of the general OPP, while the role of systematic fire activities increases. And this happens, as already noted, against the background of an increase in the share of general OPP in the structure of fire destruction as a whole (Tikhanychev, 2016, p. 16).

Another analysis has a similar perception of the increased importance of the OPP in modern conditions; however, it also suggests that this form of OPP is very demanding to perform:

> Analysis of the experience of local wars and armed conflicts (…) of the second half of the 20th - early 21st centuries showed the increased role of fire destruction of the enemy (OPP). (…) [S]ystematic fire activities (SOV), [are] one of the most complex forms of OPP in terms of organization: both in the requirements for validating [targets] and, at the same time, flexibility in planning, and in terms of decision-making speed. It is difficult to achieve these conditions, but otherwise it is impossible to increase the efficiency of conducting SOV (Sayapin et al., 2017, p. 32).

Consequently, viewing the Russian combined arms system overall, there is a clear emphasis on fires at the expense of maneuver forces. The use of fires, also in isolation, is conceptualized through the "fire destruction of the enemy" (OPP). In addition to the increased importance of the OPP overall, Russian military theorists put increased emphasis on the systematic version of the OPP, for example

within the conceptualization of the reconnaissance-strike (fire) complexes. As such, this drifts somewhat away from the *udar* characteristic because the simultaneousness is less emphasized.

Thus, combining the conclusions from this subchapter, there seems to be an increased emphasis on the integration of fires into the Russian combined arms warfare system. According to Russian military theorists, emerging technologies, such as UAVs, high-capacity communications, information processing, and precision-strike weaponry, have made it possible to integrate and automate more of this system. This applies to time as engagements can be done in near real-time; to space through the integration of forces and means in large areas; and to the levels of warfare as the levels are increasingly compressed and, for example, tactical and strategic weapons can be integrated into the same system. However, while the introduction of the BTG-system could be interpreted as a decentralization effort, the larger integration of forces and means in the Russian combined arms warfare system serve centralization by giving operational commanders more direct control of subordinate forces and means.

4.3 The Conceptual View of Space

Penetration and decisiveness – lasting fundamentals

As mentioned in previous chapters, the Soviet and Russian way of regular land warfare is, on a fundamental basis, preoccupied with a two-part problem. Firstly, access to the depth of the opponent's defensive system is a prerequisite for decisiveness and thus penetration is necessary. Secondly, after some kind of penetration is achieved, decisive goals have to be achieved through a maneuver. Here, maneuver is seen in the Russian perception of the word: the movement of a missile could also constitute a maneuver. However, in Russian military theoretical literature this two-part problem is not explicitly presented. Instead, it is a recurring theme and a generalization of long-standing military theoretical discussions in the Soviet Union and the Russian Federation. There have been several solutions to this two-part problem of achieving a penetration and then establishing a decisive maneuver. Generally, the solutions can be divided into four categories: the deep operations theory, use of nuclear weapons, the exploitation of the initial period of war, and "non-contact warfare".

The origin of the fundamental problem of Russian military theory was the defense in depth on the Western Front in World War I and the stalemate it produced, impeding all maneuver. As shown in Chapter 2, the impactful generation of Soviet military theoreticians in the inter-war period, including Tukhachevskiy, Triandafillov and Isserson, devised a new theoretical framework for penetrating a modern defense in depth and establishing a decisive maneuver. This theoretical framework, "the

theory of deep operations", prescribed the use of large combined arms formations to create a breach in the defensive line, and, subsequently, mechanized formations would attack through this breach and into the depth of the enemy, engaging reserves, logistics and enveloping large enemy formations. Thus, as the new defensive paradigm presented deep and continuous frontlines, a frontal assault was necessary to achieve penetration. Naturally, Soviet, and later Russian, military theorists would look for other approaches to achieve penetration and decisiveness.

The second solution to the fundamental problem of penetration and decisiveness came with the development of nuclear weapons. With their enormous firepower, these weapons could both create the breach through the enemy defensive line, and also, through the use of ballistic missiles, penetrate any enemy defenses and deliver massive firepower to a multitude of strategic targets at any depth and in a short time. In 1985, Major General P. G. Skachko stated that:

> Under new conditions, strategic nuclear forces are capable of hitting objects with higher precision at practically any depth, which radically changes the nature of armed conflict. The simultaneous action of these means against military and military-economic objectives deployed in the deep rear of the warring sides will, from the very commencement, turn their territory into an arena of dynamic and destructive actions (Skachko, 1985/1995, p. 254).

However, towards the end of the Cold War, the realization that a nuclear war would be devastating for everyone involved caused the Soviets to look for new ways to penetrate and achieve decisive effects. While the old conventional methods from deep operations theory were re-emphasized, another solution, avoiding the prepared defense in depth altogether, also came forward. The exploitation of the initial period of war increased in importance in Soviet military theoretical literature. For example, a set of lectures given at the Voroshilov General Staff Academy in the early 1970s, emphasized this option:

> the imperialists have lost their superiority in nuclear weapons, particularly in strategic nuclear weapons. Thus, in the event a war begins with nuclear weapons, the imperialists will suffer a devastating [counter]blow. Therefore, some of the imperialist countries will try to achieve the aim of a war against Socialist nations with conventional weapons or limited use of nuclear weapons. (…) A major role will be played by the initial operation of the [Soviet] Armed Forces, during which the strategic initiative must be seized. The principal contents of these operations will include inflicting losses on the deploying enemy groupings and his reserves by both massive aviation and artillery strikes, and the conduct of uninterrupted attack on the important directions to the entire depth of the TSMA [TVD]. In some conditions

> the enemy invasion must be repelled before the initiation of the offensive (Turbiville, 1989, pp. 72–73).

As will be clear below, the period since 2007 has seen a similar, or perhaps even increased, emphasis on the importance of the initial period of war in modern warfare.

As the confrontation with the West deepened into the 21st century, the Russian preoccupation with asymmetric and indirect methods increased. While it is difficult to distinguish between the two concepts in Russian writings, "asymmetric activities" (*asimmetrichnyye deystviya*) can be broadly understood as ways to enable a weaker entity to achieve a partial or complete victory over a stronger entity (Tyutyunnikov, 2018a, pp. 29–30). "Indirect activities" (*nepryamyye deystviya*), on the other hand, are the use of means other than those of direct confrontation between traditional regular forces (Kartapolov, 2015, p. 28). Both concepts include non-military means; in fact, non-military means are seen as increasingly potent in modern conditions. However, from a Russian perception, it is the US, NATO and the West that are the primary users of these methods. One of the Russian threat descriptions states that:

> Currently, the meaning of the hybrid warfare of the United States and its allies against Russia is the elimination of Russian statehood, the fragmentation of the country and the transfer of its individual parts under external control. (…) The goal of a hybrid war is the use of controlled chaos technologies to destroy the administrative-political, financial-economic and cultural-ideological spheres of control of people's social activities with the victor's subsequent establishment of complete control over the territory and population. The threatening reality of hybrid aggression against our country requires urgent countermeasures (Bartosh, 2018, p. 17).

The countermeasures to the West's perceived use of covert military and non-military means to take control of a target country, conceptualized, for example, by "hybrid warfare", are also viewed as largely consisting of "new" ways and means of struggle. However, the Russian countermeasures, prescribed by Russian military theorists, have a very *regular military* appearance. For example, Chekinov and Bogdanov's article on "New Generation Warfare" from 2013, often cited in Western military theoretical literature, reveals two important points. Firstly, the article describes "New Generation Warfare" not as an alternative to war, but as a type of warfare with significantly expanded content, which includes asymmetric, indirect and non-military measures. Consequently, the new way of warfare is not meant to be something below the threshold of war, but war which exploits non-traditional and non-military means particularly in the initial period of the war and even

before the outbreak of hostilities (Chekinov & Bogdanov, 2013a). Secondly, the Chekinov and Bogdanov article, similarly to many other Russian articles about major technological and military theoretical trends, tries to describe *future* war. This does not necessarily translate to the Russian way of regular land warfare in the period after 2007. For example, Chekinov and Bogdanov discuss technologies such as controlling weather and geological phenomena (earthquakes) and non-lethal genetically engineered biological weapons in their article (Chekinov & Bogdanov, 2013a). These technologies are far from matured, or even conceptualized, and are closer to "science fiction" than emerging technologies. This Russian perception of the West's use of hybrid warfare and the Russian countermeasures to it, including the Russian use of strategic forecasting, will be further elaborated on in subchapter 4.5. The point to make here is that the Russian conceptualizations primarily revolve around war as a phenomenon, and the ways of exploiting new technologies and social trends, primarily to achieve asymmetrical and indirect responses to Western threats. As the Russian way of regular land warfare is a contemporary conceptualization and not concerned with future developments, the empirical study of Russian conflict behavior, i.e. the case studies, is central. When looking at contemporary Russian behavior, it seems that the initial period of war is of immense importance to the Russians.

All the case studies except for the Donbas case show a clear emphasis on exploiting the initial period of war. By achieving strategic surprise and maintaining a very high rate of advance, Russian columns of mechanized forces were able to reach strategically significant objectives deep into enemy territory. In the 2008 Russo-Georgian War, Russian forces were able to force the Roki Tunnel, reach Tskhinvali before Georgian forces could entrench and, subsequently, intercept potential Western military aid from Turkey or through Black Sea ports, and, ultimately, threaten Tbilisi (See Lavrov, 2010). While the Russian invasion of Crimea was practically "bloodless" and many Western analysts have perceived it as covert, the case study chapter has shown that the invasion was conducted with largely overt military force, albeit light and elite. From the onset of the invasion, Russian elite forces, such as naval infantry, VDV and *spetsnaz*, swiftly penetrated and seized important objectives on the peninsula, using several diverse entries into the area of operations (see Kofman et al., 2017). Finally, during the 2022 full-scale invasion of Ukraine, Russian BTGs raced for objectives deep into Ukrainian territory. Similarly to their approach in Georgia and Crimea, Russian mechanized forces attacked in road march columns along main roads, without extensive use of reconnaissance or flank and rear security. Additionally, they avoided urban combat and took considerable risks in leaving many of their supply routes open to attacks and thus clearly prioritized penetration (see Zabrodskyi et al., 2022, pp. 7–12). While the Russian forces succeeded in Georgia and Crimea, they largely failed in reaching their objectives in the 2022 full-scale invasion. Obviously, a high-risk approach, based on

surprise and rapid penetration of the enemy defensive system, will in some circumstances fail. In many respects, the exploitation of the initial period of war is an asymmetrical approach that has the potential of gaining significant benefits. One definition of the initial period of war describes it as a:

> [P]eriod of war, during which the warring states conduct military activities with groups of forces that are deployed before the start of the war to reach the immediate strategic objectives or to create favorable conditions for (…) the conduct of subsequent military operations ("Nachal'nyy Period Voyny [Initial Period of War]," n.d.).

Additionally, a lecture from the course material from 2013 states that "the initial period of war is the most important and intensive", pointing to its crucial place in Russian military theory (*Lektsiya No 2 [Manuscript]*, 2013, p. 24). Also, Chekinov and Bogdanov see the initial period of war as the most important and even decisive in modern warfare. They argue that:

> [T]he features of the initial period of future wars are that it represents the primary and decisive period. Its content will be an electronic warfare operation, (…) an aerospace operation and massive launches of cruise missiles of various launch categories. They will be supplemented and strengthened by reconnaissance-strike and reconnaissance-fire complexes, remotely controlled and manned vehicles throughout almost the entire depth of the country under attack, which will exclude the possibility of the defending side taking measures to repel aggression (Chekinov & Bogdanov, 2015a, pp. 46–47).

In other words, Russian military theorists see the initial period of war as an opportunity to seize the initiative, penetrate the defenses and offset the opponent's strengths, and thus create a decisive asymmetry. Russian conflict behavior corroborates the emphasis on the initial period of war; this includes conflict behavior beyond the case studies and will be addressed in Subchapter 4.5. Chekinov and Bogdanov's mention of several emerging technologies in the citation above is not accidental. Russian military theorists have long argued that emerging information technologies, increasing precision and information processing, have the power of revolutionizing warfare.

One of the most central questions in Russian military theory at the end of the Cold War and into the 1990s was how to utilize the maturing technologies of long-range precision strike weapons. In the 1980s, there was an emerging Soviet preoccupation with precision-guided weapons. Ogarkov, then Chief of the General Staff, was a leading figure in a Soviet group of officers that argued for a doctrine utilizing these weapons. According to Ogarkov, the destructiveness of nuclear warfare had made nuclear weapons inappropriate as a tool of policy beyond the theoretical and rhetorical logic of mutual assured destruction. In addition to traditional conventional warfare, massive use of precision-

guided weapons could act as a more viable substitute to the nuclear deterrent (Fitzgerald, 1987, pp. 1–6). These weapons could potentially create a new type of warfare, in which the massive use of long-range precision-strike weapons could be employed without the use of regular forces in direct combat with the enemy. In the 1990s and early 2000s, Slipchenko argued for similar ideas. He described this kind of warfare as "non-contact warfare" which constituted a new generation of warfare:

> [In essence], in order to completely defeat the enemy, in wars of the new, sixth generation it is enough to deprive him of his economy. This problem can be solved without direct contact with the enemy [non-contact warfare], mainly only with the help of long-range, massive intercontinental strikes with high-precision weapons of various launch categories (Slipchenko, 2002, Introduction).

This preoccupation with precision-guided weapons has been incessantly present in Russian military theoretical discourse. A central article by Chekinov and Bogdanov describes their view of the opening period of a potential future war. They argue that:

> Most probably, the attack will begin with an aerospace operation several days long. On day one, the attacker will attempt to direct his air strikes and high-precision missiles launched from the ground, sea, air, and space in a network-centric environment to destroy or heavily damage the opponent's key military and industrial capabilities, destroy enemy government and military control centers, his political and military leaders, and communications centers, knock out power and water supplies, and ultimately force the target country to sue for peace. The aggressor will take every possible measure to prevent retaliation by the defender and avail himself of the early hours of aggression to disorganize the defender's air force and air defense system (Chekinov & Bogdanov, 2013b, p. 20).

However, while Soviet and Russian military theorists argued for the dominance of long-range precision-strike weapons, the technological and economic realities of the Soviet Union and the Russian Federation did not allow for the mass introduction of them. In the 2008 Russo-Georgian War, one source estimates that only two *Iskandr-M* and 23 of the older *Tochka-U* ballistic missiles were used (*Respondent 61, Interview 5*, personal communication, 2022). As the Russian Air Force did not conduct any extensive air campaign, the use of long-range precision-strike weaponry was very limited in 2008. However, afterwards, Russian behavior showed an increasingly use of precision-strike weaponry. For example, modern cruise-missiles with conventional warheads, such as *Kalibr*, have been increasingly introduced into the Russian Armed Forces. Particularly after the reforms of

the late 2000s, the Russian inventory of land-attack cruise missiles has been significantly bolstered. In October 2015, the Russian Armed Forces were able to launch a massive strike, consisting of 26 *Kalibr* sea-launched cruise-missiles from ships in the Caspian Sea, at targets in Syria. This kind of mass use of precision-guided weapons was a prevalent characteristic of the Russian operations in the Syrian Civil War (Novichkov et al., 2018, pp. 164–165). In the 2022 full-scale invasion of Ukraine, Russian forces allegedly launched 2,000 cruise missiles at targets all over Ukraine between February 24 and the end of May. Additionally, several hundred ballistic missiles were also used (Bronk et al., 2022, p. 25). This development is significant for a military that in 2010 lacked land-attack cruise-missiles with conventional warheads (McDermott & Bukkvoll, 2017, p. 7). Thus, the scale of the numbers of weapons, their range and sophistication, and the Russian reliance on them have shown a substantial new development.

Consequently, the fundamental two-part problem of Russian and Soviet military theory – how to penetrate a modern defense in depth and achieve a decisive maneuver – is still seen as relevant today. However, of the four "historical solutions", two have been predominant: the exploitation of the initial period of war and so-called "non-contact warfare" have been heavily mentioned in Russian military theoretical literature and have been visible in Russian conflict behavior since 2007. Importantly, as the Russians see the West as conventionally superior these approaches are also a way to achieve an asymmetrical advantage over the West. However, in order to implement these approaches, the Russians have to prioritize requirements at the operational and strategic levels of warfare, and thus the tactical level has to serve the higher levels in a very direct and absolute way. The Russian view of tactics as largely "automatic", explained in the next section, is one of the consequences of this prioritization.

An automated tactical system

The Soviet "scientific view of warfare", explained in Subchapter 2.2, is a persistent feature of the Russian way of regular land warfare. Consequently, as combat is viewed as guided by general laws, more automation in combat is possible, and tactics can, to a larger extent, be reduced to general templates. As will be demonstrated below, Russian military theory shows a distinctly systemic view of warfare and is concerned with devising the system best suited to the laws of combat. However, due to the difficulties of revealing a very general way of thinking from observing behavior, because of its elusive and intangible nature, it has been difficult to convincingly show the presence of this "scientific view of warfare" in Russian conflict behavior. Russian military theoretical literature, on the other hand, clearly shows a continued scientific view of combat.

As mentioned, it has been difficult to identify clear evidence of the presence of this scientific view of warfare in the case studies. This is most likely because the generic nature of this trait does not present distinct behavior. However, the simplistic and predictable tactics used in Georgia, and also reported in the 2022 full-scale invasion of Ukraine, imply that the Russian approach saw little need for adaptation and small-unit planning – a predetermined tactical approach was sufficient – and the operational level requirement for very rapid decision-making took precedence. Another indication of the Russian scientific view of warfare was the creation of systems of fires, exemplified by the "reconnaissance-strike complexes" and "system of fire destruction" discussed above. These examples show systemic thinking that relies heavily on automation. For example, the reconnaissance-fire complexes are described as being very responsive and effective when established, but the process of establishing them is centralized and inflexible (Karber, 2015, Chapter I; Watling & Reynolds, 2023, pp. 11–14). Finally, the Russian emphasis on optimizing unit organization, such as temporarily transforming the structure of a motor rifle battalion into an assault detachment when faced with fortified defenses, points to the systemic nature of the Russian way of regular land warfare. This will be elaborated on at the end of this section.

In *Voyennaya Mysl'*, many articles describe the combat system at different levels of warfare, and which requirements the described system will have (for example Chekinov & Bogdanov, 2015b; Khomutov, 2020; Kovalev et al., 2016; Pluzhnikov & Usachëv, 2022). One of these articles attempts to describe the combined arms combat system:

> Modern combat with combined arms formations is complex since it requires the coordinated use of various forces and means to achieve its goals. Therefore, there is a need to define [a set of] integrated requirements that systematize the dynamics of their application. The requirements, in our opinion, should be related to the formation. A formation refers to a system (…) created to perform a specific task (…). When creating weapons, military and special equipment (VVST), it is necessary to rely on the accepted system of requirements which has three levels: operational-strategic, operational-tactical and tactical-technical. Each of them is an aggregate arrangement of quantitative and qualitative characteristics that determine the appropriate level of development of troops and weapon systems at a given time (Kovalev et al., 2016, p. 34).

Thus, it is the *system* that defines the requirements for specific weapons, vehicles and other pieces of equipment. For example, in this Russian systemic approach, the development of a main battle tank is not driven by the technological possibilities or to create the "best" balance between protection,

firepower and mobility, but rather what the system requires of this type of equipment (the tank). This clearly shows the Russian systemic view of warfare.

Additionally, the Russian scientific view of warfare is also visible in their reliance on the mathematical modelling of combat. Again, many articles in *Voyennaya Mysl'* raise this subject (for example Burenok et al., 2015; Dorozhkin et al., 2016; S. S. Ivanov et al., 2020). One of these makes the point that Russian security policy cannot be designed without the modelling of potential armed struggle. It argues:

> The justification for the direction of military policy and how to implement it is inextricably linked to the study of the processes of armed struggle. These processes have never been as complex as they are now and will become increasingly complex in the future. Under these conditions, it is not possible to justify the construction and development of the military organization of the Russian Federation without organizing and conducting systematic studies of the scale and nature of military dangers, threats and possible military conflicts. World experience in organizing such studies indicates the growing role of mathematical and other types of modeling of processes of interstate confrontation (Burenok et al., 2015, p. 34).

Another article also points to the importance of mathematical modelling, although at the tactical and operational level of warfare. This article states that analyses of historical data are not sufficient to create the optimal combat system of today, and that:

> In modern conditions (…), on the one hand, the multitude of technical, organizational, command and other decisions [that have to be made] sharply increases, and on the other hand, the price of an incorrect, erroneous decision increases significantly. Therefore, the essence of the problem is to choose the most optimal and effective option even before [the issue is a reality], since after its appearance it may be too late. The most reasonable way to solve this problem is to use mathematical modelling of combat and operations, both in the interests of preparations and conduct [of operations], research in the field of tactics, and for military training at all command levels (S. S. Ivanov et al., 2020, p. 75).

Another telling feature of the Russian emphasis on scientific approaches to warfare is their view on command and control. Automated command and control are recurring themes in Russian military-theory. This is also true in *Voyennaya Mysl'* after 2007 (for example Glushchenko et al., 2020; Morozov et al., 2018; Vygovskiy & Davydov, 2017). One of these articles describes the possibilities of automated command and control:

> Solving a whole range of management tasks (decision-making, planning, communicating tasks to subordinates, etc.) requires automation of all information processes. Therefore, the main link in automated command and control of the preparation and execution of military operations is a decision support system (SPPR). (…) An SPPR, with its appropriate information support, makes it possible to adapt the automation of command and control to the objectives and tasks of force activity. Along with the tasks of optimizing the force activity, it is necessary to carry out multi-level complex modeling of the process of [combat] (including command and control and support) (…). *Based on the models, it is possible to automatically generate planning and directive documents* [Emphasis added] (Vygovskiy & Davydov, 2017, p. 39).

Consequently, the Russians see the optimal exploitation of modern information technology not as a support to human decision-makers, but as taking control of the whole decision-making process. The faith in automatic systems has even yielded ideas of automating a solution to low combat morale. One article from *Voyennaya Mysl'* states that:

> The moral-psychological state of forces has always been an integral component of armed struggle, but mechanisms for influencing this area began to be introduced relatively recently. (…) [T]oday one cannot help but notice the need to improve the management of the [moral-psychological support system], which largely implies its partial automation (Goncharov, 2017, p. 18).

The solution, according to this article, is an automated system based on modern information technology:

> [A]utomation of the management of moral-psychological support of a unit should be understood as a set of measures for the development, implementation and use (…) of information technologies and electronic computing tools in order to increase the efficiency and quality of decisions and thus create favorable moral-psychological conditions for the successful completion of the tasks facing them (Goncharov, 2017, p. 19).

Finally, the Russian scientific view of warfare can also be seen in their extensive use of procedurally created formations. In contrast to an approach in which the unit organization contains substantial flexibility and still retains unit cohesion, perhaps pertaining to Western militaries, the Russian approach is to change the organization to adapt it to a specific situation. In other words, while the first approach would have to rely more on the competency and experience of the personnel of the unit, the Russian approach sees the need to change the whole organizational system. While the

Russian approach is based on historical experience and scientific research, it will come at a cost: to fundamentally alter the organizational structure of a unit for a specific role reduces unit cohesion.

For example, if the task is to seize a heavily fortified or urban area, the first (Western) approach would involve a task force, based on a standard unit such as a mechanized infantry battalion, with necessary support. In a similar situation, the second approach (Russian) would involve drastically changing the structure of a motor rifle battalion into an assault detachment (*shturmovyy otryad*). The formation of these units has a long Soviet and Russian history. The name has its origins in Verdun in World War I ("Shturmovaya Gruppa," 1986). Further, the procedural formation of these units when facing heavily fortified defenses has its origins in Soviet military art (Erickson et al., 1986, pp. 115–117; "Shturmovaya Gruppa," 1986). During the second battle for Grozny in 2000, the Russians established assault detachments, which were groups of light infantry, consisting of 30-50 soldiers, including snipers, flamethrower units, combat engineers and forward observers. They were supported by armor, artillery and aviation, and were used to lead the assaults in urban terrain (Oliker, 2001, p. 45). In the 2022 full-scale invasion of Ukraine, assault detachments were introduced after the frontlines had stabilized. These were created on the basis of a reinforced motor rifle battalion and used dismounted infantry, largely separated from their vehicles, and operating in a very different way than the traditional mechanized maneuver (*Osobennosti Vedeniya Shturmovogo Otryada*, 2022, pp. 5–9). Importantly, the field manual for assault detachments declares that the commander needs "nothing less than three days" to organize and prepare for an assault (*Osobennosti Vedeniya Shturmovogo Otryada*, 2022, p. 10). This is very modest considering that the assault detachment is a temporarily re-organized unit, fighting in a fashion that is most likely unfamiliar. Thus, unit cohesion and the general competency of the personnel are subordinate to the optimal organization of a unit in the Russian way of regular land warfare.

A military-theoretical article from the summer of 2022, clearly addressing experience gained in the full-scale invasion of Ukraine earlier that year, illustrates the Russian emphasis on organization. The article argues there is a problem in that rapid and penetrating BTGs are not able to penetrate lines or points of significant enemy opposition. Instead of prescribing training and methods for the BTGs to handle such a challenge, the article rather provides a new organizational structure of the already *ad hoc* organized BTG-structure. According to the article, the new organization should consist of two types of BTGs, one for creating a breakthrough (*takticheskaya gruppa proryva*) and one for exploiting it afterwards (*takticheskaya gruppa razvitiya uspekha*) (Nasybulin, 2022, pp. 70–73).

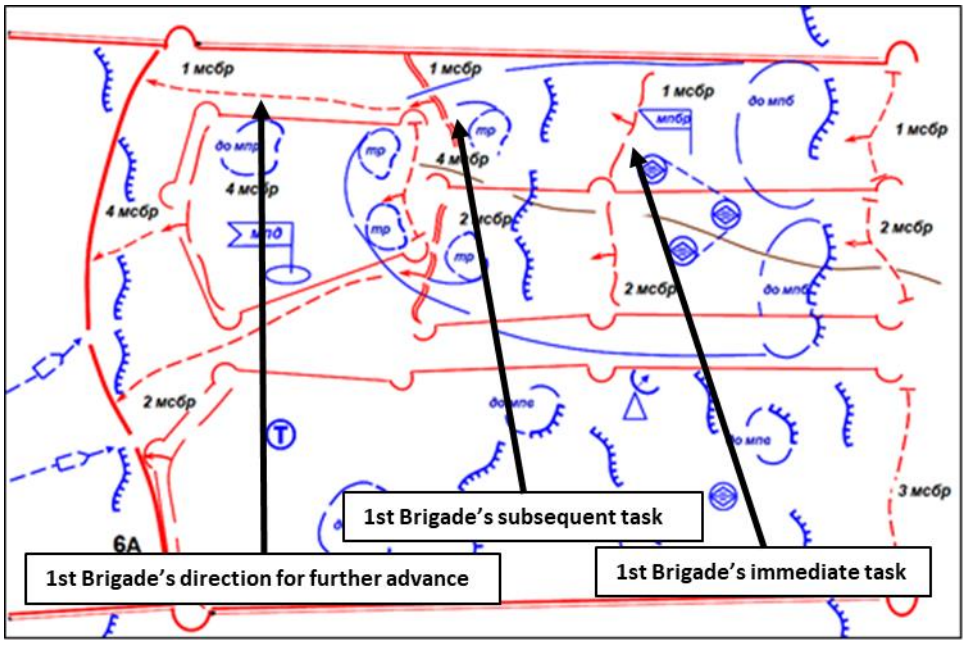

*Figure 8 Russian field manuals still prescribe giving tasks as lines in the terrain corresponding to enemy units. Blue is the enemy (*Boevoy Ustav [Field Manual, Brigade]*, 2011, p. 54).*

Russian field manuals still prescribe giving tasks to subordinate units as lines in the terrain corresponding to the rearward limit of enemy units (see Figure 8). According to one field manual, a subunit is normally given an immediate and subsequent task in addition to a direction for further advance in offensive operations (*Boevoy Ustav [Field Manual, Brigade]*, 2011, p. 54). Thus, the argumentation above shows that the Soviet scientific view of warfare, and the resulting templatic view of tactics, has not left Russian military thinking. On the contrary, as modern information technology has become more accessible, Russian military theorists seem to be even more obsessed with the potential of automation and prediction in tactics.

Echelonment, layers and force density

There are two characteristics that seem largely absent in Russian conflict behavior since 2007: firstly, the extensive echelonment of the force, and secondly, the layered appearance of fires (part of the characteristic "combined arms"). The latter is largely the consequence of the former – extensive echelonment on all command levels automatically causes a layered structure. However, while the technique of echelonment has not left Russian field manuals and other military theoretical literature (see for example Batyushkin, 2021, p. 193; *Boevoy Ustav [Field Manual, Brigade]*, 2011, p. 54), there are few clear-cut examples of traditional Russian echelonment in Russian conflict behavior. Consequently, this unexpected lack of echelonment and layered structure is not because these techniques have left the Russian way of regular land warfare, but more likely because the extreme

operational tempo and low force density in Russian conflicts since 2007 have made extensive echelonment less applicable. Additionally, the general compression of the levels of warfare in the Russian force structure has exacerbated this tendency (Kopytko, 2016, p. 19). There are no longer functionally similar forces at every command level, creating extensive echelonment, but instead the levels have become fewer, and they are more specialized than in the Soviet Armed Forces.

The combination of the Russian fear of unnecessary time consumption, embodied in *aktivnost'*, and that the Russian conflicts have often taken place immediately after the strategic deployment of forces over long distances, have made proper echelonment less relevant. In the 2008 Russo-Georgian War, the forces that participated in the invasion were deployed to Georgia from all over Western Russia (Lavrov, 2010, pp. 49–50). They were sent into South Ossetia as they became available, and thus were introduced into the area of operations in waves (Shurygin, 2012). While these waves may appear to be a result of echelonment, they are probably more an example of naturally phasing of the operation. Similarly, the use of *spetsnaz* and other elite forces as a spearhead in the initial period of war, facilitating the movement of follow-on forces, may also appear as a kind of functional echelonment, but is probably not for the reason of increasing force concentrations and reducing combat induced friction, which is the traditional purpose of echelonment (see Chapter 2). In both the 2014 invasion of Crimea and the 2022 full-scale invasion of Ukraine, *spetsnaz*, naval infantry and airborne forces were inserted, or already present, in the depth of the opponent's defensive system in the initial period of the conflict (Kofman et al., 2017, pp. 22–25; Watling & Reynolds, 2022a, pp. 2–7). However, they were there due to their high combat readiness and capabilities, and not due to a deliberate echelonment of the invasion force.

The relatively low force concentrations in the conflicts since 2007 have also reduced the possibilities of implementing extensive echelonment as there have simply not been sufficient forces available to establish several echelons. For example, during the initial phase of the 2022 invasion of Ukraine, the Russian force concentration was so low that it would have been difficult to establish even a single continuous frontline. As calculations in the case study subchapter have shown, an even distribution of the Russian invasion force along the total length of the frontline would equal to one BTG per 13 km. This is far from sufficient to establish extensive echelonment. A plausible explanation for why the Russians perceived that this very low force concentration could have been sufficient might be found in one of the lectures from the 2013 course material. In an analysis of the 2003 US invasion of Iraq, the lecture states that one of the main lessons was that:

> The brigades conducted combat at a distance of 90-120 km from each other, [thus] in a zone with a 240 km front. [And that] a brigade's battalion tactical groups conducted independent combat operations in several areas simultaneously (*Lektsiya No 2*, 2013 slide 48).

In other words, according to this analysis, the US forces in Iraq were able to successfully conduct offensive operations with an even smaller force concentration than the Russians had in Ukraine in February 2022.

However, when the Russian force concentrations slowly increased after the mobilization in September 2022 and the shortening of the frontlines after the withdrawal from the right bank of the Dnipro in Kherson Oblast in November, there were examples of extensive echelonment (Kofman & Lee, 2023). In particular, the Russian defenses in the south of Ukraine, built during winter of 2022-2023, constituted an illustrative example of Russian echelonment. The defenses were mostly established with two echelons, manning a distinct defensive line each, and a forward defense sector in front of the first echelon and reserves behind the second (Kofman & Lee, 2023). This is reflected in the field manual issued in 2023, describing how to defend against Ukrainian mechanized attacks. It states that:

> The results of combat did not prove false the need to echelon positions in depth, so normally at a distance of up to 4-6 km, a second position was deployed, and its lay-out was based on the expected direction of the enemy's main attack. At the same time, the second echelon units were preparing to fight from [prepared] fire lines and to apply counterattacks (Molchanov et al., 2023, p. 37).

Consequently, while echelonment is still an important part of the Russian way of regular land warfare, the low force concentrations and the high operational tempo in the initial phase in Russian conflicts since 2007, have made these operational techniques less relevant.

4.4 The Conceptual View of Time

The key role of surprise

In the Russian way of regular land warfare, surprise is of crucial importance. It is seen as the main force multiplier. For example, Vinogradov argues that:

> In all past wars, surprise has always been the leading instrument in achieving successful operations. It was also widely used in local wars of recent decades [stated in 2013]. The role of surprise in any type of combat (…) is continuously increasing. In the future, surprise may acquire a fundamentally different character in the initial period of war due to the massive

> use of new means of attack (…). In modern conditions, a similar effect becomes possible when delivering a sudden pre-emptive electronic fire strike by means deployed in advance in the TVD (Vinogradov, 2013, p. 27).

The above quote shows clearly how intimately surprise and the initial period of war are interconnected in Russian military thought: if the effect of strategic surprise becomes greater, the opportunities in the initial period of war increase. The Russian view on the initial period of war will be described in the next section. As described earlier, surprise is achieved by two fundamental activities: either one party's actions are conducted so rapidly that the opponent is not able to introduce adequate responses quickly enough, or actions are kept secret, depriving the opponent of the ability to perceive the danger and act. In order to act quickly, the Russians put great emphasis on high combat readiness and strategic mobility. Simultaneously, the rapid deployment of forces, enabled by high combat readiness and strategic mobility, is covered by secrecy and deception often referred to as *maskirovka* in Russian terminology. Finally, these measures, rapid action and *maskirovka*, are often achieved in the context of large-scale exercises or readiness inspections acting as a cover or pretext for the movement and deployment of large forces.

Surprise as a force multiplier is also recognizable in Russian field manuals. A field manual for the division, brigade and regimental level presents the principles of tactics and states that:

> Surprise makes it possible to catch the opponent unaware, cause panic and paralyze his will to resist, disorganize command and control, and create favorable conditions for victory even over a superior enemy (*Boevoy Ustav [Field Manual, Division, Brigade, Regiment]*, 2013, para. 8).

However, the first principle the field manual presents is "combat readiness", which acts as prerequisite for achieving surprise (*Boevoy Ustav [Field Manual, Division, Brigade, Regiment]*, 2013, para. 8). While the connection is not made explicitly in this field manual, there is a clear logical relationship between the reliance on surprise and the initial period of war, and a high combat readiness. In an article in *Voyennaya Mysl'* the importance of combat readiness is seen as increasing in modern conditions. It argues:

> An important feature of the modern socio-political situation is the constantly accelerating technological progress, which leads to the creation of improved means of armed struggle. This allows one of the warring parties to start a war without preliminary preparation, bypassing the threatened period. Therefore, the Armed Forces of the Russian Federation

> must be in high combat readiness to timely repel aggression and ensure the military security and territorial integrity of Russia (Kupriyanov et al., 2015, p. 44).

In 2019, the chief of the Russian General Staff, Gerasimov, presents the Russian strategy for defending against the West, which he calls “active defense”. This strategy consists of three general categories of principles: war prevention, preparations in advance, and warfare. Gerasimov explains:

> The principle of war prevention is to anticipate the development of the military-political and strategic situation in order to timely identify military dangers and threats and the response to them. The principles of the preparation of the state for war in advance are ensured by a constant high combat and mobilization readiness of the armed forces, as well as the creation and maintenance of strategic reserves and stockpiles. In modern conditions, alongside the decisive role of the Armed Forces, the principle of warfare has evolved in relation to the coordinated use of military and non-military measures. The principles of surprise, decisiveness and relentless strategic operations remain relevant. By acting quickly, we must preempt the enemy with our preventive measures, promptly identify his vulnerabilities and threaten to cause unacceptable damage to him. This ensures that the strategic initiative is seized and retained (V. V. Gerasimov, 2019).

In other words, as pre-emption implies striking before a threat materializes, it demands high combat readiness to be able to act early enough and would, intrinsically, mean achieving some degree of surprise of the opponent. The Russian BTG-based force design was an approach to increasing the combat readiness of the Russian land forces within reasonable economic constraints. To put parts of the regular formations on very high alert, i.e. the BTGs, combined with high strategic mobility, was a response to the perceived demands of rapid reaction in modern warfare (Sutyagin & Bronk, 2017, pp. 16–24). Finally, to achieve surprise, high combat readiness and strategic mobility, a recurring method, visible in Russian conflict behavior, has been to deploy forces directly to or close by the area of operations using large exercises or readiness inspections.

The Russian use of large exercises and readiness inspections is one of their most prominent techniques for achieving surprise and superiority in the initial period of war. The Russian forces that invaded Georgia in 2008 were largely from the 58th Combined Arms Army that had just conducted the Kavkaz-08 strategic exercise. On August 2, six days before the attack on Georgia, the North Caucasus Military District initiated the Kavkaz-08 exercise, involving 8,000 soldiers and 700 armored vehicles that trained on a peace enforcement scenario – much the same scenario as the invasion a few days later (Illarinorov, 2009, p. 71). In February 2014, several readiness inspections were used to

cover significant Russian force movements towards the Ukrainian border and Crimea. These readiness inspections had been conducted regularly before, and the force movements in February were not only directed towards Ukraine but also to other parts of Russia (Lavrov, 2010, pp. 162–163). These measures were likely introduced to conceal the real intent and scope of the Russian operations against Ukraine. Finally, before the 2022 full-scale invasion of Ukraine, the Russians conducted large-scale exercises in order to place the invasion force at the Ukrainian border. A smaller Russian build-up of forces was conducted in March-April 2021 along the Ukrainian border. This build-up was later reduced before the Zapad-21 exercise in September 2021 put larger forces in the area again. Following this, there was a steady increase of forces in positions to invade Ukraine. In January 2022, a joint Belarusian-Russian exercise in Belarus created a pretext for even larger Russian forces to be deployed on Belarusian territory (Bowen, 2022a). Consequently, there is a clear pattern of using large-scale exercises and readiness inspections to mask large troop movements immediately prior to attacks. This would increase the possibility of achieving surprise, i.e. a less prepared opponent, and thus aid penetration and the achievement of decisive objectives in the initial period of war.

The use of exercises to conceal troop movements is part of the Russian concept of *maskirovka*. It has a broad definition:

> [A] set of interconnected organizational, operational-tactical and engineering-technical measures carried out in order to conceal forces and objects from the enemy, and deceive him of their existence, location, composition, condition, as well as the plans, activities and intentions of the forces, maintaining their combat power and increasing the survivability of objects ("Maskirovka," n.d.).

However, at the strategic level of warfare, *maskirovka* has the purpose of "keeping the preparation of a strategic operation (campaign) secret, and also of disorienting the enemy as to the grouping, condition and intentions of the forces" ("Maskirovka," n.d.). Similarly, at the operational level, the purpose is "to achieve surprise during the activities of forces and ensure their survivability" ("Maskirovka," n.d.). Clearly, *maskirovka* at both levels has the purpose of achieving surprise by postponing the opponent's realization of the operation. As the case studies have shown, this use of strategic and operational level *maskirovka* has been misread as a form of covert warfare. Several measures, aimed at preparing for the use of conventional force in secrecy, may be perceived as a form of covert warfare. In particular, the 2014 invasion of Crimea, which became "bloodless" due to the lack of Ukrainian resistance, appeared as covert warfare. However, the Russian use of *maskirovka* was targeted to achieve surprise and thus penetration and to reach decisive objectives. The lack of resistance was caused by the precarious strategic situation the Ukrainians were facing, and not

because the Russian invasion was undetected – had the Ukrainians resisted, as they eventually did in Donbas, the invasion of Crimea would have appeared very differently.

However, these are not the only examples of Russian *maskirovka* from the case studies. Interestingly, Russian conflict behavior indicates that, in the event of a decision to use military force, even diplomacy is subordinated to this strategic *maskirovka* effort. In the 2008 Russo-Georgian War, Russian authorities claimed that their operation was aimed at aiding the Russian peacekeepers in South Ossetia and avoiding a genocide there (Donovan, 2009, p. 12). Thus, the Russians tried to make the invasion seem more limited than it actually was. During the 2014 invasion of Crimea, the Kremlin denied any involvement despite the fact that this could arguably increase the probability of Ukrainian resistance – it would be less risky for Ukrainian forces to take on local militia than the armed forces of the Russian Federation. Additionally, as it became necessary to take responsibility for the invasion at a later stage to show that Russia would protect ethnic Russians abroad, Russian authorities indirectly admitted that they had lied earlier ("Putin Acknowledges Russian Servicemen," 2014). In Donbas, the Russian involvement has been substantially reported, but the Kremlin has still denied any responsibility for what was happening on Ukrainian territory (Walker, 2015, and see the case study chapter). Finally, immediately prior to the 2022 invasion of Ukraine, Russian officials stated several times that Russia was not planning an invasion and that the Russian forces along the Ukrainian borders posed no threat; in fact, they were in the process of returning to their garrisons (Reevell, 2022; "Russia Urges the West to End Hysteria around Ukraine," 2022).

Another example that indicates diplomacy's subordinate role to military strategic requirements is how crisis tension is manipulated to facilitate for achieving surprise. According to Peter H. Vigor, the lead-up to the Soviet invasion of Czechoslovakia in 1968 was characterized by a Soviet effort to keep the tension at a moderate level. This, also according to Vigor, reduced the probability of preventive actions from the West and lured the Czechoslovakians into a sense that the threat of a Soviet invasion had dissipated. After several months of simmering tensions, the Soviet invasion in August 1968 came as a surprise to the West and to the Czechoslovakians (Vigor, 1980, p. 34). Russian statements in the lead-up to the invasion of Ukraine on February 24, 2022, mentioned above, may have had the same function: to reduce tension and facilitate for achieving surprise. That Russian forces were merely on exercises, posed no threat to Ukraine and were in the process of returning to garrison were largely contradicted by declassified Western intelligence; however, the Russian purpose of these statements was clearly to deceive. Similarly, the movement of considerable Russian forces into separatist controlled areas in Donbas two days before the full-scale invasion may have been an effort to give the impression that Russian military objectives were limited (Roth & Borger,

2022). All these examples constitute lies that would reduce the credibility of Russian authorities in later incidents. However, it seems that the requirement to protect the planned offensive use of military force, using *maskirovka*, takes precedence over the diplomatic credibility of Russia.

In order to achieve surprise in large-scale use of offensive military force, it is of the utmost importance to keep the plans secret. One of the methods of keeping large offensive operations secret in Russian military theoretical literature is to reduce the number of personnel participating in the planning and preparation of upcoming operations (Tyutyunnikov, 2018b, pp. 144–145). This extensive use of secrecy has had some unfortunate consequences. For example, during the initial phase of the 2022 invasion Ukraine, Russian forces at the lower tactical command levels were reportedly taken by surprise when the invasion started (Zabrodskyi et al., 2022, pp. 24–29). However, while Western analysts have often been in disbelief about this practice, the Russian view of tactics gives perhaps an answer. The Russian scientific view of warfare, putting more emphasis on organizing and automatizing the tactical system, reduces the concern about the individual soldier and leader's preparations.

Finally, another feature that is perhaps misunderstood as "hybrid warfare" rather than *maskirovka* aimed at protecting an operation with largely conventional forces is the Russian less lethal approach in the initial period of war. The Russian invasion of Crimea in 2014 is perhaps the most famous example. Rather than using overwhelming military deadly force, the Russian forces used non-lethal and less-lethal methods, such as bribes, threats and even fistfights, to subdue the Ukrainian defenders (Lavrov, 2014, pp. 173–178). The lack of massive use of military force prolongs the time that a defender is unsure about the scope and intent of the attack by several hours or even days. However, this approach is not exclusive to the 2014 invasion of Crimea: the Soviet invasions of Hungary, Czechoslovakia and Afghanistan in particular follow a similar approach. This will be discussed further in Subchapter 4.5.

In short, the concepts of surprise, *maskirovka* and the initial period of war are intimately connected in the Russian way of regular land warfare. *Maskirovka*, combined with an emphasis on high combat readiness and strategic mobility, enables the Russians to achieve some degree of strategic surprise. The advantage of surprise – to be better prepared for the opening of hostilities than the opponent – is then exploited in the initial period of war. This exploitation is aided by the Russian view of initiative, decision-making and leadership, and is the theme for the next section.

Aktivnost', rapid decision-making and the initial period of war

In the Russian way of regular land warfare, the initial period of war is of great importance. However, this points to a deeper view of combat as heavily reliant on the factor of time. In this view, time is a limited and crucial resource, which, in turn, compels Russians to go to great lengths to avoid wasting time. According to Nathan Leites, after the examination of a large amount of Soviet military literature in the 1980s, parts of Soviet military thinking could be described as:

> As to the various phases typically included in an operation, avoid the time gaps between them: enter into combat straight from the march; avoid any interval between the end of the "artillery preparation" for an offensive and the beginning of the advance by tank and infantry; start pursuit immediately after a breakthrough; begin annihilating the enemy as soon as you have encircled him; prepare your next operation in the course of the current one. There are, to be sure, situations in which not pausing would be even worse than doing so (…); but the burden of proof is on interruption (Leites, 1992, p. xvi).

This military cultural trait is, not surprisingly, supported by military theoretical arguments. The word *aktivnost'* appears frequently in modern Russian military texts. This word embodies much of the above-mentioned preoccupation with not wasting time, and is largely connected to three themes: initiative, decision-making and the initial period of war.

As the effect of surprise is temporary, it requires rapid exploitation to be significant. Thus, the Russian emphasis on exploiting the initial period of war is a logical consequence of the importance they place on surprise. A lecture from the course material from 2013 argues that a war is divided into distinct periods:

> In a large-scale and regional war, a set of periods are distinguished – the initial, one or more subsequent, and the final. Each of these periods aim at the achievement of specific military-political goals and, accordingly, the execution of a set of defined strategic tasks (*Lektsiya No 2 [Manuscript]*, 2013, p. 25).

About the initial period the lecture states that:

> The initial period of the war is the most important and intensive. The main efforts during this period are focused on maintaining the stability of the state and establishing military command and control, gaining (maintaining) dominance in all spheres of the armed

> confrontation, and seizing the strategic initiative. The duration can range from several weeks to several months (*Lektsiya No 2 [Manuscript]*, 2013, p. 25).

This emphasis on the initial period of war is nothing new – it has been a recurring trait in the Soviet and Russian way of warfare. To avoid a similar incident to the 1941 surprise attack on the Soviet Union has been an important motivation for this preoccupation with surprise and the initial period of war (see for example S. P. Ivanov, 1974). As explained in Subchapter 4.3, the exploitation of the initial period of war is one of the potential methods the Russians see as a solution to the fundamental problem of penetration. This method has increased in importance since 2007, both in Russian military theoretical literature and in Russian conflict behavior. For example, one source states that "the peculiarity of the initial period of wars of the new generation will be that it will be the main and decisive period" (Tyutyunnikov, 2018a, p. 33). In relation to the decisiveness of the initial period of war Vinogradov argues that:

> The decisiveness of the goals of operations (especially the first operations) stems mainly from the capabilities of modern and, especially, emerging weapon [technologies]. (…) The methods of conducting operations should be based on an exceptionally high level of fire destruction of the enemy and the rapid actions of forces on selected directions. (…) A manifestation of the decisiveness of operations and the influence from the growth in the capabilities of weapons further intensifies the struggle to seize and maintain the initiative (Vinogradov, 2013, pp. 27–28).

Accordingly, to the Russians, to seize and retain the initiative lies at the core of why the initial period of war is so important. If you are consistently able to act before the opponent, you are able to guide the events and development of the military situation.

The particular Soviet view of initiative, the dedication to solve the given tasks but not deviate from them, is also present in the Russian way of regular land warfare. An encyclopedic entry defines initiative as:

> [T]he ability of a servicemember to act independently and vigorously and based on the current situation and the general plan, aimed at the successful completion of the received combat tasks. Based on deep knowledge of military art and how the enemy conducts battle, understanding the commander's plan, the combat tasks and the tasks of the neighbor units, and a comprehensive assessment of the situation. Initiative implies the creative use of the existing circumstances in the effort to find the most appropriate solution to the received

> tasks, the ability to impose one's will on the enemy, and the readiness to take responsibility for the independent decision ("Initsiativa," n.d.).

In addition to the lack of provisions to act outside the received tasks, the definition above also points to another central Russian characteristic: the extreme accountability of the commander who follows the centralization of command in the Russian military culture. The concept of *edinonachaliye*, the commanders unrestricted accountability for his unit and mission, embodies this notion. This is still one of the key principles of Russian command and control (Tyutyunnikov, 2018a, p. 189). The definition states:

> The principle of unity of command [*edinonachaliye*] is the main principle of command and control. It consists of granting the commander the full extent of command authority and [at the same time] the sole responsibility for the adoption and implementation of decisions, and the condition and results of the actions of forces subordinate to him (Tyutyunnikov, 2018a, p. 196).

Edinonachaliye, combined with another principle of Russian command and control: "firmness and persistence in the implementation of plans and tasks", urges Russian commanders to surge forward in order to influence events and assure that orders are followed (Tyutyunnikov, 2018a, pp. 189–190). The case studies showed clear indications of this approach to command and control. In the 2008 Russo-Georgian War, several generals were situated far forward, often taking command over units well below their command level. In fact, Khrulëv, the commander of the 58th Army, was wounded in close combat with Georgian reconnaissance forces on day one of the war (Lavrov, 2010, p. 61). In the 2022 full-scale invasion of Ukraine, at least three generals were reportedly killed in the first few months of the war (Jones, 2022, pp. 3–4, and see the case study chapter). Thus, the Russian approach to command and control, emphasizing great dedication and accountability to achieve given tasks, creates an intense focus on driving the plan to fulfilment. To use a metaphor, while Western officers are largely seen as "warrior leaders", Russian officers can be better described as "engineers", tasked with overseeing the Russian war machine and ensuring that it runs smoothly. In cases in which the machine stops working efficiently, Russian officers are personally expected to solve the problems, and to a lesser degree, expect subordinates take care of it.

The concept of *aktivnost'* is closely related to initiative in Russian military theory. While *aktivnost'* is not a term with a singular meaning in Russian military texts, it is a notion associated with several fundamental principles. For example, in a Russian field manual, one of the fundamental principles of tactics is described as:

> Activeness [*aktivnost'*] and decisiveness of activities lie in a thorough knowledge of the enemy, the combat readiness and capability of military units, to strike him in any situation, to impose one's will on him, to seize and maintain the initiative, and to have a constant desire to destroy him (*Boevoy Ustav [Field Manual, Division, Brigade, Regiment]*, 2013, para. 8).

Thus, there is a clear Russian perception that a relentless and aggressive approach will produce significant advantages. Similarly, for defensive operations, one of three principles in total is called *aktivnost'*; stability (*ustoychivost'*) and insuperability (*nepreodolimost'*) are the other two. Here again, aggressiveness and seizing and retaining the initiative are emphasized:

> The insuperability and stability of the defense is unthinkable without activeness [*aktivnost'*]. Activeness in the defense will be present when the attacking enemy is constantly receiving fire from all means when approaching from a distance, when advancing, deploying and in front of the front line, while repelling an attack, as well as in the depths of the defenses in case of an [enemy] penetration (Batyushkin, 2021, p. 56).

An article from *Voyennaya Mysl'* from 2023 points to the importance of also seizing (the Russian word is "intercept") the initiative in defense. This is done by reducing the enemy's *aktivnost'*, implicitly by increasing own *aktivnost'*. It states that:

> [T]he primary objective of the defense is to neutralize the initiative of the attacker, that is, to bring him to the point at which it is impossible to continue advancing with the deployed forces. Ultimately, this makes it possible to reduce [the attackers] activeness [*aktivnost'*] and seize the initiative by launching a decisive counteroffensive to defeat the stopped strike forces (Romanchuk & Shigin, 2023).

Consequently, the Russian emphasis on *aktivnost'*, the aggressive and relentless pursuit of the initiative, indicates that they have a holistic "theory of defeat". In other words, the overall defeat of a state's armed forces is achieved by the aggregate of a multitude of offensive actions, not by a single sweeping action.

Finally, the Russian view of command and control is based on centralization and the ability to make decisions faster than the opponent. This increases the need to seize the initiative as early as possible and conduct aggressive and fast-paced operations. An encyclopedic entry defines centralized command and control:

> Centralized command and control (TsU) is a basic principle of command and control. The purpose of centralized command and control is to ensure exact compliance of the elements (subsystems) of the organizational system (OS) to its function (Tyutyunnikov, 2018a, p. 310).

While admitting that there should be a balance between strictly following orders and the independent actions of subordinates, the source continues to state that:

> The essence of [*decentralized* command and control] is to give the leaders of specific formations and their command and control bodies the right to independently determine their tasks and choose ways to solve them, in accordance with the objectives set for them (…). It directly follows from the essence of command and control and its functions that *decentralized command and control as such does not exist* [emphasis added] (Tyutyunnikov, 2018a, p. 311).

Additionally, the Russian way of regular land warfare emphasizes rapid decision-making and operational tempo. For example, one lecture from the 2013 course material states this bluntly. As the first requirement for conducting operations, it points to:

> Speed of operation - [which is] the ability to achieve objectives with a speed that absolutely and relatively exceeds the speed of the enemy's actions and responses (*Lektsiya No 2*, 2013, p. 24)

General Lieutenant V. V. Trushin argues that this requirement for rapid decision-making even has precedence over making creative and customized decisions in the Russian Armed Forces. He underscores the need for creativity in modern conditions, but he is still skeptical about the possibility of implementing this approach:

> The character of modern military conflicts requires commanders at all levels to have a creative approach to organizing combat operations and command and control during their conduct. It should, however, be recognized that this requirement is not properly understood by a part of the military leaders. In their opinion, in command and control during combat conditions, creativity is not helpful, and in modern combat there is simply no time to do it because all efforts must be directed to accomplish the assigned task in, first of all, reliable and repeatedly proven ways (Trushin, 2020, p. 7).

This radical emphasis on centralization of command and rapid decision-making leads naturally to predictable and simplistic behavior. The heavy reliance on *maskirovka* mitigates some of the

disadvantages of this approach. If the enemy is unaware of or deceived as to the presence of the Russian operation, the predictability of Russian behavior will be of less relevance. Another method for mitigating the disadvantages in the Russian command and control system, which has been extensively covered in Russian military theoretical literature, is the so-called "disorganization" of the enemy command and control system (see Kofman et al., 2021, pp. 72–77). According to one article:

> The character of modern wars and armed conflicts indicates a steady increase in the importance of command and control during combat operations. The armed forces of the world's leading countries are equipped with increasingly advanced information and command and control systems (…). This is done in order to ensure superiority in command and control and weaponry, which will become the most important factor in achieving success in future wars. Superiority in command and control is an advantage in the efficiency of the command and control systems and weaponry of one side over similar command and control systems of the opposing side (Anokhin et al., 2015, p. 49).

The article continues to discuss how the world's leading nations in this area (the West) have superiority over Russian forces and how to counter this. The Russian Armed Forces could try to catch up with the West; however, this would be very costly and probably outside of Russian economic possibilities. The solution that this article presents is an asymmetrical approach: instead of building a better command and control system than the opponent, the solution is to reduce the effectiveness of the opponent's system through electronic warfare (Anokhin et al., 2015). "Disorganization" is a conceptualization of this approach and can be found in many Russian military theoretical texts (see for example Anokhin et al., 2015; Kaminskiy, 2017; Pasichnik, 2017). In other words, the Russians emphasize rapid decision-making and aim at achieving command and control superiority over the opponent, and thus seizing the initiative, by protecting their own operation by *maskirovka* and disrupting the opponent's command and control system through "disorganization". If we put this into Boyd's model of military decision-making, the "OODA-loop",[32] the Russian approach is to reduce their time-expenditure in each of the steps to a minimum, and, at the same time, disrupt the enemy's "observation" and "orientation" processes with *maskirovka* and the "decision" and "action" processes with "disorganization". While this is a very simplistic representation, there is an important lesson for NATO in this: the technological superiority of the West does not necessarily translate into a decisive advantage.

[32] John Boyd's OODA-loop is a generalization of military decision-making which divides the process into four steps: observation-orientation-decision-action, which are continuously executed as in a loop. The ability to conduct this loop quicker than the opponent is central in the "maneuver warfare" tradition (Lind, 1985, p. 5).

In sum, the Russian way of regular land warfare relies on aggressive and relentless actions to seize and retain the initiative, largely aided by rapid decision-making, and from the very onset of the armed conflict. This approach is supported by measures to disrupt the opponent's ability to respond adequately, including surprise, *maskirovka* and the "disorganization" of the opponent's command and control system. Russian behavior since 2007 has revealed this approach. Both in the 2008 Russo-Georgian war and the 2022 full-scale invasion of Ukraine, Russian forces attacked largely mounted and in road march columns, conducting fast-paced maneuvers into the depth of the defenders' territory, and taking great risks to their own forces to achieve decisive objectives. In 2008 they succeeded, but they failed in 2022. However, after the initial failure in the 2022 invasion, the Russian forces refused to relinquish the strategic initiative and continued with aggressive and offensive operations until a battered and exhausted Russian force collapsed on the Kharkiv front and lost control of the important Kupiansk-Lyman axis. Similarly, the Russian invasion of Crimea followed a similar pattern in which Russian forces, under the cover of *maskirovka*, executed fast-paced and potentially high-risk maneuvers to quickly penetrate Ukrainian defenses and fragment the Ukrainian forces on the peninsula. At the base of this approach lies the Russian cultural aversion to "wasting time" and also the scientific view of warfare, which reduces the need for flexibility and adaptation at the lower command levels.

4.5 A Soviet and Russian Blueprint for Invasions

Looking at Russian conflict behavior since 2007, a pattern emerges. Russian offensive use of military force has often taken the form of invasions following a fairly similar blueprint. Firstly, the Russian tradition of forecasting future military security dangers and threats makes them see pre-emption as very relevant. Secondly, in order to use military force offensively, the Russians rely heavily on strategic surprise to avoid countermeasures. Thirdly, the element of surprise is exploited by aggressive operations in the initial period of war, achieving deep penetrations of the enemy defensive system and reaching decisive objectives. Finally, strategic surprise and the exploitation of the initial period of war are supported by a range of means and methods such as electronic warfare and the use of ballistic and cruise missiles. This is a Russian blueprint for invasions that has succeeded more times than it has failed. However, at the time of writing, the Russian failure during the initial phase of the 2022 full-scale invasion of Ukraine may have caused many to think otherwise.

First of all, the Russian inclination for prediction and forecasting in international relations has caused them to use military force offensively more often. This inclination involves an effort to predict future security threats or wars and thus make the Russian political leadership able to pre-emptively stop these threats before they manifest themselves. According to Putin:

> We need mechanisms to respond not only to existing dangers. We need to learn to 'look beyond the horizon', [and] assess the nature of threats 30 - 50 years ahead. ...We must fully understand the nature and prospects of the military-strategic processes that are unfolding in the modern world, clearly understand what potential threats may affect the situation around our country (Putin, 2012).

Gerasimov's well-known articles from 2013 and 2019, addressing members of the Russian Academy of Military Sciences, re-iterates this emphasis on strategic forecasting. In the 2013 article, Gerasimov states that:

> Indeed, every war is a special case that requires an understanding of its special logic, its uniqueness. Therefore, the nature of wars that Russia or our allies may be drawn into is very difficult to predict today. Nevertheless, this problem must be solved. Any scientific research in the field of military science is worthless if military theory does not provide the function of foresight (V. V. Gerasimov, 2013).

Similarly, in 2019, he goes on to argue that:

> The fundamental basis for strategic practice is the creation of a system for predicting scenarios for the outbreak and conduct of military conflicts. This is well-founded forecasting of possible conflict scenarios that serves as the input data for developing the forms and methods for the Armed Forces (V. V. Gerasimov, 2019).

Consequently, the Russians would, if necessary, want to preempt an attacker or a dangerous situation, and, because preemption implies acting more quickly than the opponent, this requires some degree of strategic surprise. As surprise is to be better prepared than the opponent at the outbreak of hostilities, pre-emption has largely, by definition, the same purpose as surprise – to have a significant advantage at the initiation of hostilities.

Thus, the Russian emphasis on the element of surprise is partly justified by the need for pre-emption. In order to achieve strategic surprise, Russian conflict behavior shows an emphasis on three central elements: high combat readiness, strategic mobility, and *maskirovka* (secrecy and deception). These elements have been significantly present in Russian conflict behavior since 2007. In particular, large-scale exercises and readiness inspections, allowing a pretext for the mobilization and movement of large forces, have been a recurring feature. In all four case studies, Russian forces had conducted strategic exercises immediately before the start of the hostilities.

After achieving strategic surprise, the Russians rely on exploiting the opportunities in the initial period of war. By acting before the defenders are properly prepared, Russian forces are able to reach

decisive objectives. Several Soviet characteristics are visible in Russian behavior in this phase of an invasion. In fact, it seems that these characteristics are particularly suitable to this type of exploitation in the initial phase of the war. The prioritization of the operational level of warfare ensures that the decisiveness of the operation is emphasized, largely to a disadvantage at the tactical level and thus increasing the risk to Russian forces. Quickly penetrating the opponent's defensive system and gaining access to its depth are crucial, allowing the seizure or destruction of multiple objectives in a short time. This points to the conceptualization of *udar*. In practice, this prioritization of the operational level manifests itself in simplistic tactics, prescribing high-speed mechanized advance along main roads and in column formation and rapid, almost automatic, decision-making. This enables a very high, perhaps reckless, rate of advance that constitutes much of the risk to the forces at the tactical level of warfare. In order to effectively exploit the element of surprise, which is temporary, Russian forces have a limited time window before the defenders will be able to introduce countermeasures and mitigate the effects of surprise. Thus, in this blueprint for invasions, the seizing of the initiative through aggressive and relentless operations is paramount. This effort is embodied in the Russian concept of *aktivnost'*. Additionally, secrecy and deception, including the minimalization of the use of violent force, are continued as long as possible during the operation. Consequently, in short, the Russian blueprint for invasions relies heavily on strategic surprise and after this is achieved, its effect is exploited in the initial period of war in order to reach decisive objectives in the depth of the opponent's defensive system. Throughout, the strategic initiative is seized and firmly held through *aktivnost'*.

To support this effort of rapid and deep penetrations, the Russians regularly employ a number of other forces and means than regular maneuver forces. The most important ones, according to the case studies, are electronic warfare, special operations forces (*spetsnaz*), and long-range precision-strike weaponry. Electronic warfare is used to disorganize the opponent's command and control system and disrupt his weapon guidance and communications. This can be done in combination with cyberwarfare, which is seen as a subset of electronic warfare. Secondly, *spetsnaz* and elite forces, such as the VDV and naval infantry, are used as spearheads enabling the penetration of follow-on regular forces. These forces are often inserted by air, or they could already be present under civilian cover, as peacekeepers (the 2008 Russo-Georgian War) or as part of a pre-war agreement (2014 invasion of Crimea). Finally, long-range precision-strike weapons, usually in the form of cruise or ballistic missiles, are used to strike strategic targets. Command and control elements and the opponent's own long-range precision-strike weaponry are typical targets.

While the Donbas case is rather different, the three other cases follow this particular blueprint. In all three instances large exercises were used as pretexts for force deployments to the area of operations

immediately before the outbreak of hostilities, achieving, at least in part, strategic surprise, and a subsequent aggressive and relentless exploitation of the initial period of war. In the 2008 Russo-Georgian War, Russian forces participating in the *Kavkaz*-08 strategic exercise were later used during the invasion. Then, an operation based on a very high rate of advance, pouring forces into Georgia, was aimed at reaching decisive objectives: most likely to force the Roki Tunnel, reach Tskhinvali before Georgian forces could seize it, intercept any potential external aid to Georgia over Black Sea ports and the Turkish border, and to threaten Tbilisi and thus the very existence of the Georgian state (see Lavrov, 2010). In 2014, a series of Russian readiness inspections and exercises put a large force on the Ukrainian border, which acted as a cover for the forces used during the invasion of Crimea and the intervention into Donbas. In Crimea, the combat readiness and strategic mobility of the VDV and *spetsnaz* forces were exploited to quickly build up forces on the peninsula. Additionally, the lack of war declarations and initial restraint in using violent force aided the rapid take-over and, combined with the real threat of a Russian large-scale invasion, thwarted any armed resistance from the Ukrainian side (see Kofman et al., 2017). Finally, the full-scale invasion in 2022 was similarly facilitated by a large strategic exercise, deploying large forces to the area of operations. Again, the Russians were trying to achieve strategic surprise and, after the invasion started, aggressively exploit the initial period of war. Russian forces attacked along at least four main directions, racing towards objectives deep into Ukrainian territory in column formation along main roads (see Watling & Reynolds, 2022a). However, on that occasion they failed.

This invasion blueprint is far from a novel Russian approach. Before 2007, the Russian forces used a similar approach in the first Chechen war. After the Chechen rebellion, Russian forces were tasked with the recapture of the autonomous republic. Here as well, Russian forces were instructed not to expect a fight (Oliker, 2001, p. 9). The operation plan consisted of three stages:

> Stage I would begin on November 29, 1994 and be over by December 6 (eight days). Over the course of this week, forces would prepare and secure locations from which operations would later be conducted while forward aviation and attack helicopters attained air superiority and other units prepared for electronic warfare. Three days, December 7-9, were allocated for Stage II, during which Russian troops would approach Grozny from five directions and effect a double encirclement – of the city and of the republic as a whole – all the while protecting communications and carrying out reconnaissance. The next four days, December 10-14, would comprise Stage III: the actual assault on Grozny (Oliker, 2001, pp. 9–10).

Thus, the Russian plan in 1994 had striking similarities with both the alleged plan for an invasion of Ukraine from 2015 and the actual invasion in 2022. The Russians would attack on several attack

vectors which would bring the Russian forces rapidly into the depth, seizing important infrastructure, and then establishing isolated security zones in which the enemy could be fragmented into smaller parts and destroyed (see *Poyasnitel'naya Zapiska Gruppirovki Voysk «Sever»*, 2015; Zabrodskyi et al., 2022, pp. 7–10).

In Soviet history after World War II, this blueprint was used almost exclusively. In the Soviet invasion of Hungary in 1956, while not following the blueprint on all points, several elements were recognizable. For example, Russian military planners had foreseen unrest in Hungary and prepared contingency plans and put Soviet forces in the country on higher alert. Consequently, they were able to react quickly when the situation escalated (M. Kramer, 1998, pp. 184–185). Secrecy and deception, including a false pledge to withdraw Soviet forces from Hungary, were widely used to avoid effective countermeasures from the Hungarians and thus ensured some degree of surprise. With some Soviet forces seemingly withdrawing from Hungary, a massive build-up, partly within the borders of Hungary, simultaneously commenced and a subsequent attack with other Soviet forces was conducted (Report of the Special Committee on the Problem of Hungary, 1957, pp. 53–58). The Soviet invasion was far from "bloodless" – this time the defenders resisted violently. However, they were quickly isolated and defeated: most armed resistance was neutralized after four days (M. Kramer, 1998, p. 208).

A decade later, in 1968, a similar situation developed in Czechoslovakia. Civil unrest in opposition to the Communist rule and Soviet occupation resulted in a Soviet military response (Steury, 2011). This response was an invasion by conventional forces, largely following the blueprint described above. The Soviet invasion of Czechoslovakia started on August 20 with a civilian aircraft landing at Prague International Airport, containing a *spetsnaz* battalion in civilian clothes, which immediately secured the airport. Immediately afterwards, the area around Prague was filled with electromagnetic noise and Soviet military transport aircraft started to land at the airport (*Soviet Invasion of Czechoslovakia*, 2011; Steury, 2011). Surprise was ensured by the combination of combat readiness, secrecy and deception. Large Soviet forces, with vehicles marked with white crosses to distinguish them from similar Czechoslovakian equipment, were ready to invade Czechoslovakia by the end of July, one month before the invasion. This force build-up was masked by a series of large exercises, giving the Soviets a pretext to move large forces and logistics (Steury, 2011). Finally, on August 20, 1968, the invasion force, made up of around 20 regular Soviet divisions, attacked with a very high rate of advance and from several directions, and had seized the country by dawn the next day (*Soviet Invasion of Czechoslovakia*, 2011; Steury, 2011). This was done without causing much bloodshed – 137 people were killed – and indicates that Soviet forces had been ordered to show restraint (Fraňková, 2017).

One decade later, the Soviet invasion of Afghanistan in 1979 was yet another example of this Soviet invasion blueprint. On December 25, Soviet forces received the order to start the invasion and an air landing operation, involving two divisions from the VDV, commenced towards airports around Kabul and Shindand. Simultaneously, ground forces from the 40th Army of the Turkestan Military District attacked along two directions: one from Termez in the Soviet Union towards the Salang Pass and Kabul, and one from Kushkan towards Herat, Shindand and Kandahar (Lyakhovskiy, 2007, p. 44; The Soviet Invasion of Afghanistan, 1980, pp. 37–39). As the Soviet Union provided advisors and technical assistance to the Communist regime in Afghanistan, some Soviet forces were already in the country before the invasion and facilitated for the insertion of larger forces on December 25. Part of this advance party was a battalion of Muslim Soviet soldiers, approximately 500 soldiers supported by VDV and *spetsnaz* forces from the "Alfa", "Grom" and "Zenit" groups that were dressed in Afghan uniforms and tasked with removing the current regime in Kabul. On the morning of December 28, they had assassinated the Afghan president, Hafizullah Amin, and taken control of several important locations, including the Afghan General Staff and Afghan counterintelligence buildings (Lyakhovskiy, 2007). At this point, Soviet regular forces flowed into the capital and thus a land connection was established to Soviet territory; the coup was accomplished, and the country was seized. In other words, the Soviets had invaded and largely established control of Afghanistan within a span of three to four days.

A final point about the Soviet invasions of Hungary, Czechoslovakia and Afghanistan was that they were conducted with relatively limited forces; approximately 31,500 troops initially participated in the invasion of Hungary. However, the initial invasion attempt failed and the second, a few days later, included much larger forces (up to 200,000 soldiers) (M. Kramer, 1998, pp. 184–185; Report of the Special Committee on the Problem of Hungary, 1957, p. 56). In Czechoslovakia, the initial invasion force consisted of 250,000 soldiers (Steury, 2011). Finally, the invasion of Afghanistan included 85,000 soldiers (Grinter, 1982, p. 53). Additionally, the casualties during the initial phases of the invasions, including civilian casualties, were moderate overall. Consequently, the Russians would likely see the track-record of this blueprint of invasions as fairly successful. This has significance for the interpretation of, for example, the 2022 full-scale invasion of Ukraine: the operational design of the Russian invasion is not necessarily evidence of an underestimation of the Ukrainian defenders. On the contrary, the Russian approach was largely "standard" operational art, following their well-proven blueprint for invasions.

Chapter 5: Conclusion

This thesis set out to describe the Russian way of regular land warfare. As such, it has attempted to make a broad generalization of how the Russian Armed Forces understand and conduct regular land warfare. However, in order to do that, two assumptions had to be accepted. Firstly, there had to be an arational component to Russian behavior; that is, that some Russian behavior cannot be explained strictly by rational factors. Thus, cultural factors distinct to the Russian way of warfare had to be present; if not, all the world's military organizations would have a similar way of warfare and we could not identify a distinct *Russian* version. Secondly, there had to be some degree of continuity in these arational factors over time. If the Russian way of warfare frequently undergoes drastic changes within short timeframes, there will not be any patterns to observe, and generalization becomes impossible. As this thesis has followed the Russian way of regular land warfare from its Soviet origins and found that most of the Soviet characteristics have been carried forward into the Russian period, there is clearly a large degree of continuity. Consequently, as a minimum, this thesis has demonstrated the validity of way of warfare studies.

However, the contribution of this thesis goes beyond the confirmation that there is continuity in the Russian way of warfare; it has also been able to identify several of its characteristics and the logic behind them. Chapter 4 is largely the conclusion to the research question as it is a comprehensive description of the Russian way of regular land warfare since 2007. On a fundamental level, the Russian way of regular land warfare provides answers to what this thesis has identified as the original Soviet military theoretical problem: the dual challenge of penetrating a defense in depth and subsequently establishing a decisive maneuver (maneuver in a broader sense). Of the four main solutions to this fundamental problem, two have been particularly central in the period since the Cold War: the exploitation of the initial period of war and the so-called non-contact warfare. Both of the above solutions are asymmetric responses to the challenge presented by a modern defensive system. They involve the achievement of decisive objectives without facing this challenge "head-on"; the former by attacking before the defense is established, and the latter by bypassing the defense using modern technology such as long-range precision-strike weaponry. The two other solutions, the symmetrical approaches of frontal attacks and the use of battlefield nuclear weapons, have been less prevalent in Russian behavior and military theoretical literature since 2007.

Consequently, the characteristics of the Russian way of regular land warfare are related to the initial period of war and non-contact warfare. Firstly, in order to act pre-emptively and before the enemy defenses are effective, strategic surprise is of enormous importance to the Russians. Thus, high

combat readiness, strategic mobility and *maskirovka* are not only important but necessary in order to achieve surprise. The case studies showed that this was often achieved by using large-scale exercises and readiness inspections as a "cover" and a pretext for large force deployments. Subsequently, strategic surprise makes it possible to achieve decisive objectives by exploiting the initial period of war. This exploitation is supported by a substantial prioritization of the operational level of warfare and *aktivnost'*, which implies aggressively and relentlessly seizing and retaining the strategic initiative. In practical terms, this is achieved by rapid decision-making, a rigid and hierarchical command style, and simplistic and templatic tactics, which are largely based on mechanized columns and airborne forces with very high rates of advance. This approach, taking advantage of the possibilities in the initial period of war, constitutes a specific blueprint of both Soviet and Russian invasions. As this thesis has shown, the 2008 Russo-Georgian War, the 2014 invasion of Crimea and the 2022 full-scale invasion of Ukraine, in addition to the invasions of Hungary (1956), Czechoslovakia (1968), Afghanistan (1979), and Chechnya (1994), largely adhere to this blueprint.

Secondly, the Russian way of regular land warfare is increasingly reliant on approaches that avoid direct contact with the opposing forces. Consequently, fires, and in particular indirect fires, take a very central role in Russian tactics. In contrast to the Western view of combined arms, the Russians see fires as viable also when used exclusively and without detailed integration with maneuver. As such, the Soviet and Russian concept of *udar*, the simultaneous application of firepower throughout the depth of the defensive system, is recognizable in Russian behavior. For example, the conceptualizations of the "reconnaissance-strike (fire) complex" and the "fire destruction of the enemy" are prevalent in Russian military theoretical literature and field manuals. Throughout the period since 2007, new means have been implemented into these systems of fires. In particular, electronic warfare, UAVs, precision-strike weaponry, and information and communications technology have been extensively implemented into the Russian combined arms system.

Consequently, this thesis contributes a holistic description of the Russian way of regular land warfare. Additionally, it is focused at describing regular force aspects, contrary to irregular and non-military means, and at describing tactical and operational warfare rather than overarching strategic and political issues. Finally, the study has taken the advantage of several categories of sources, most importantly Russian conflict behavior and military literature. This approach has made it possible to make inferences that otherwise would be very difficult. For example, the use of conflict behavior as a source enabled the inference of the Russian "blueprint for invasions" as it is not fully described in Russian military literature. On the other hand, the Russian "scientific view of warfare", being difficult to clearly observe in behavior, is significantly easier to indicate through Russian military theoretical literature. However, this thesis' originality lies primarily in the combination of all these elements

(regular warfare and the use of both behavior and military literature). Thus, few other publications, if any, are comparable in approach and content to this thesis.

However, the complexity of warfare, the agency of the actors involved, and the presence of secrecy and deception make any study of warfare challenging. Thus, as in all social sciences, this thesis cannot be used to predict future Russian military behavior in any absolute way. However, it might rather be used as a theoretical framework aiding in interpreting Russian military behavior and develop policies and strategies for responding to Russian aggression. In other words, it can increase the ability to "get inside the head of Russian officers". The need to understand the Russian way of regular land warfare is urgent – at the time of writing the war is relentlessly raging in Ukraine and the danger of escalation of the conflict is substantial. However, as this study is concerned with the time-period between 2007 and the first few months of the 2022 full-scale invasion of Ukraine, a crucial question appears: how will the Russo-Ukrainian War change the Russian way of warfare? This is a question that needs addressing and this study might provide a robust starting point for such an analysis.

As a final note, because the Russian way of regular land warfare emphasizes strategic surprise and thus pre-emption, a Russian perception of themselves as weak does not necessarily translate into a defensive posture. Consequently, Russian military behavior could be aggressive and pre-emptive whether the political end goals are defensive or offensive. An illustrative example is the statement of the Chief of the Russian General Staff, Gerasimov, in response to the Russian perception of Western aggressive use of both military and non-military means:

> The basis of "our response" is the "active defense strategy," which, considering the defensive nature of the Russian Military Doctrine, envisages a set of measures to pre-emptively neutralize threats to the security of the state (V. V. Gerasimov, 2019).

Thus, the Russian approach to warfare is important to grasp in order to accurately interpret Russian actions – an intuitive interpretation, based on a Western understanding of warfare, will not be sufficient.

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