

The German 1918 Offensives

**A case study in the
operational level of war**

David T. Zabecki



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The German 1918 Offensives

Based on original German records not analyzed in depth for more than sixty years—including recently discovered records previously thought lost in the bombing of Potsdam during World War II—this book is the first study of the German 1918 offensives to focus on the “operational level of war” and on the body of activity known as the “operational art,” rather than on the tactical or strategic level.

In the first half of 1918 a series of large-scale offensive operations designed to defeat Britain and France before the arrival of American troops produced stunning tactical gains, previously thought impossible in the gridlock of trench warfare. David T. Zabecki shows that the reasons these victories failed to add up to strategic success are to be found not at the tactical level of warfare, but rather at the operational level, a distinct realm of military activity that was only beginning to mature at the beginning of the 20th century.

He presents his findings here, with a thorough review of the surviving original operational plans and orders and offers a wealth of fresh insights into the German offensives of 1918 and into the planning and decision-making processes of the German General Staff of World War I.

For the first time, David T. Zabecki clearly demonstrates how the German failure to exploit the vulnerabilities in the BEF's rail system led to the failure of the first two offensives, and how inadequacies in the German rail system determined the outcome of the last three offensives. This is also the first study in English or German of Operation HAGEN, the planned but never launched final offensive of the campaign.

This book will be of great interest to all students of World War I, the German Army and of strategic studies and military theory in general.

David T. Zabecki started his military career as an enlisted infantryman in Vietnam and served during the 1968 Tet Offensive. He has been Commanding General of the U.S. Southern European Task Force (Rear) and has served as the U.S. Department of Defense Executive Director for all World War II 60th anniversary commemoration events in Europe. In 2003 he was the Senior Security Advisor on the U.S. Coordinating and Monitoring Mission in Israel. The Editor of *Vietnam Magazine*, he has a PhD in Military Science from the Royal Military College of Science, Cranfield University.

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**To my wife, Marlies Schweigler, for her never-ending patience
and support of my military career and my academic pursuits**

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Foreword

One of the great ironies of 20th-century historiography has been the fact that it has only been in the last two decades that historians have actually begun to unravel the full complexity of the most disastrously influential war in human history. In effect, the conflict of 1914 to 1918 saw the invention of modern war—tactical and operational concepts that were still valid in the Tigris–Euphrates Valley in the spring of 2003. Its strategic and political consequences were to live on until the fall of the Berlin Wall and the collapse of the Soviet Union.

How is one to explain the fact that it has taken so long to understand the learning processes and adaptations that occurred on the battlefields of the Western Front? Part of the problem undoubtedly has had to do with the fact that World War II intervened at precisely the point when historians were beginning to examine the Great War through new perspectives. And when World War II finally ended, historians found themselves involved in examining what appeared to be a more interesting and vital conflict. Thus, the myths of the first conflict, typified by the “lions led by donkeys” school of history, remained to dominate the historical landscape.

Further complicating the difficulties that historians confronted was the fact that the RAF in its effort to pulverize the Third Reich managed to destroy much of the archival material pertaining to the German Army in World War I—or so we thought.

In fact there was another source available for at least the last year of the war. Ironically, as perhaps a reward for American support for German efforts to distort the history of what had happened during World War I, during the inter-war period the Germans allowed a team of American Army historians to examine and copy most of the records of the German Army’s high command, army groups, armies, and corps dealing with the conduct of operations on the Western Front in 1918. This treasure trove of the day-to-day conduct of the German offensives then sat in various U.S. Army depositories over subsequent decades, unexamined and unused until David Zabecki, the author of this book, discovered them. With that discovery he was then able to write this book, the first account based on actual records, since the appearance of the last volume of the German government’s official history—which was scheduled to appear in 1944, but which finally appeared in 1956.

This then is an account of that decisive year in world history, when the Germans managed to achieve outstanding tactical successes on the battlefield, but completely failed to translate tactical success into operational victory. In the case of their tactical successes, the Germans broke new ground. But the flawed operational execution of the spring 1918 offensives almost takes one's breath away for the level of incompetence and arrogance the Germans displayed. Quite simply put, Ludendorff not only had no strategic objective in mind, but no operational goal. It was, as he put it to Crown Prince Rupprecht of Bavaria, simply a matter of punching a hole in British lines and seeing what turned up. And the results were not hard to predict. At huge cost in terms of manpower and materiel they could not afford, the Germans seized large amounts of useless ground that proved harder to defend than the positions they abandoned when they began their advances.

Thus, this study breaks entirely new ground in the history of World War I. In many respects it is the most important monograph on the history of the war to appear in the past two decades, precisely because it rests on original sources that historians had believed had been completely destroyed in April 1945. General Zabecki has turned the new archival material into a brilliant account of how and why the German offensives of spring 1918 failed so disastrously and completely. His account represents an extraordinary contribution to the historiography of World War I; it provides the expert as well as the neophyte with a clear direct account of the turning point in World War I, for when the "Ludendorff" offensives failed, catastrophic collapse of Germany was the inevitable result. How and why these offensives failed, then, is Zabecki's story, and it is one that provides an entirely new perspective of the first German bid for world hegemony. It will represent the standard account for the German spring offensives for the foreseeable future. And it establishes General Zabecki as one of the major historians of World War I.

Williamson Murray
Fairfax, Virginia

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Any errors in fact or interpretation in this study are solely mine.

*David T. Zabecki
Freiburg, Germany*

Glossary of acronyms and military and foreign terms

AAA Antiaircraft artillery

Absicht Commander's intent

AEF American Expeditionary Force

AK *Armeekorps* (German standard corps)

AKA *Artilleriebekämpfungsartillerie* (German counter-battery artillery units)

All Arms (British) *See* combined arms

Angriffsdivision German attack division

AOK *Armee Oberkommando* (German numbered army headquarters)

Arko *Artillerie Kommandeur* (German artillery headquarters)

A-Staff Adjutant General's Staff (British)

Aufklärung Reconnaissance

Aufmarsch Deployment

Battle A series of related tactical engagements.

BEF British Expeditionary Force

Bewegungskrieg Mobile warfare

Blue Cross German artillery shell marking indicating non-lethal, non-persistent vomiting gas.

Bombengeschwader German bomber wing

Bombenstaffeln German bomber squadrons

Bunkreuz German technique of simultaneously firing Blue Cross and Green Cross artillery shells at the same target.

C2 Command and Control

C3 Command, Control, and Communications

C3I Command, Control, Communications, and Intelligence

C4I Command, Control, Communications, Computers, and Intelligence

Campaign A series of related military operations designed to achieve one or more strategic objectives within a given time and space.

CB Counter-battery fire.

Center of gravity The hub of all power and movement upon which everything depends. That characteristic, capability, or location from which enemy and friendly forces derive their freedom of action, physical strength, or the will to fight.

Combined arms The synchronized application of two or more arms (infantry,

artillery, armor, cavalry, engineers, aviation) in which the strength of one of the arms either complements the strengths of the other arms, or compensates for their weaknesses.

Commander's intent A concise expression of the purpose of an operation, the desired objective, and the manner in which it will be achieved.

Culmination The point in time and space when the attacker's combat power no longer exceeds that of the defender, or when the defender no longer has the capability to resist successfully.

Decisive point A point, usually but not always geographic in nature, that when obtained or retained provides a commander with a marked advantage over his opponent. Decisive points can also include other physical elements such as enemy formations, command posts, or communications nodes.

Depth The concept of extending military operations against an enemy in both space and time.

Destruction A firepower effect designed to render a target completely combat-ineffective.

Durchbruch Breakthrough

Einbruch Break-in

Entscheidungsstelle Decisive point

FEKA *Fernkämpfartillerie* (German long-range artillery units)

Feuerwalze Creeping barrage

Firepower The projection of kinetic energy force against an enemy for the purpose of suppressing, neutralizing, or destroying him. One of the primary elements of combat power.

Fliegerabteilung Aviation reconnaissance and liaison detachment

Fliegerabteilung-A Artillery observation aviation detachment

Fliegeraufklärung Aerial reconnaissance

FO Forward observer

FOFA Follow-on forces attack

FOO Forward observation officer (British)

Friction The accumulation of chance errors, unexpected difficulties, enemy actions, and confusion in battle.

Fussartillerie Foot artillery, the German heavy artillery

Gegenangriff Deliberate counterattack

Gegenstoss Hasty counterattack

Generalstab General Staff (German)

GHQ General headquarters (British and American)

GQG *Grand Quartier Général* (French General Headquarters)

Green Cross German artillery shell marking indicating lethal, non-persistent choking gas.

G-Staff General Staff (British)

Hauptwiderstandslinie Main line of resistance

HE High explosive

Hgr. DKP *Heeresgruppe Deutscher Kronprinz* (Army Group Headquarters of German Crown Prince Wilhelm)

- Hgr. KPR** *Heeresgruppe Kronprinz Rupprecht* (Army Group Headquarters of Bavarian Crown Prince Rupprecht)
- Ia** German General Staff officer in charge of operations
- IBB** *Infantriebegleitbatterien* (German accompanying artillery batteries)
- Ic** German General Staff officer in charge of intelligence
- IGB** *Infanterie-Geschuetzbatterien* (German infantry gun batteries)
- IKA** *Infantriebekämpfungsartillerie* (German direct support artillery units)
- Initiative** The ability to set or change the terms of battle.
- Intelligence** In the military sense, the product resulting from collecting, processing, integrating, analyzing, evaluating, and interpreting information concerning an enemy force.
- Interdiction** Actions to divert, disrupt, delay, or destroy the enemy before it can affect friendly forces.
- Jagdgeschwader** German fighter wing
- Jagdstaffeln** German fighter squadrons
- Jäger** German light infantry units (literally hunters)
- Kagohl** *Kampfgeschwader*
- Kampfstaffeln** German bomber squadrons (original name)
- Kogenluft** *Kommandierender General der Luftstreitkräfte* (commanding general of air forces)
- KTB** *Kriegstagebuch* (war diary)
- Landser** Common German soldier
- Landsturm** Germany's second tier reserve force
- Landwehr** Germany's first tier reserve force
- LC** Line of contact
- LD** Line of departure
- Liaison** The contact or intercommunication maintained between elements of military forces to ensure mutual understanding and unity of purpose and action.
- Line of operation** A directional orientation that connects the force with its base of operations and its objective.
- LOC** Lines of communications, all routes (land, water, and air) that connect an operating military force with its base of operations, and along which supplies and military forces move.
- Logistics** The system of planning and executing the movement and sustainment of forces in the execution of military operations.
- Maneuver** Battlefield movement to gain positional advantage. One of the primary elements of combat power.
- Materialschlacht** Battle of attrition
- MW** *Minenwerfer* (trench mortars)
- Neutralization** A firepower effect designed to render a target temporarily combat-ineffective for a specific period.
- OB** Order of battle
- Oberost** German general headquarters on the Eastern Front
- Offizierstellvertreter** Temporary officer (usually an NCO acting as a platoon leader, and sometimes as a company commander)

OHL *Oberste Heeresleitung* (German general headquarters)

OODA Observe, Orient, Decide, Act (also known as the Boyd Loop)

Operational art Military planning and execution actions at the operational level of war.

Operational level of war The distinct level of warfare between the tactical and the strategic.

Operatives Ziel Operational objective

OPSEC Operational security

Q-Staff Quartermaster General's Staff (British)

Reach The distance over which a military force can project its combat power in sufficient concentration to achieve its objective.

Reconstitution Actions taken by higher headquarters to rebuild combat-worn units to a level of effectiveness commensurate with mission requirements and available resources.

RK *Reservekorps* (German reserve corps)

Schlachtstaffeln German ground attack squadrons

Schutzstaffeln German ground attack squadrons (original name)

SCHWEFLA *Schwerste Flachfeuerartillerie* (German heavy flat-firing artillery units)

Schwerpunkt Center of gravity, although the Germans used the term as synonymous with main effort, rather than the way Clausewitz meant center of gravity.

Siegfriedstellung Siegfried Position, called the Hindenburg Line by the Allies

Stellungsddivision Trench division

Stellungskrieg Trench warfare

Stollen German deep bunkers

Stosstrupp Storm troop company

Strategy The art and science of employing armed forces and other elements of national power during peace or war to secure national objectives.

Sturmabteilung Storm troop detachment

Sturm Battalion Storm troop battalion

Suppression A firepower effect designed to temporarily disrupt the capability of enemy forces in the target area from delivering effective fire on friendly forces.

Tactics The art and science of employing available means to win battles and engagements.

Tempo The rate of a military action. Controlling or altering tempo is a necessary means to initiative.

Vernichtungsschlacht Battle of annihilation

Vollmacht Authority delegated to a staff officer to issue orders in the name of the commander

Weisungsführung Command by directive

Wilhelmgeschütze Wilhelm Guns. Also known as the Paris Guns. Widely but incorrectly called Big Berthas.

Yellow Cross German artillery shell marking indicating lethal, persistent mustard gas.

1 Introduction

Why do we still bother with World War I?

With regard to operational history, it becomes too easy to lose sight of battles and campaigns as means to higher ends and to overlook alternative paths not taken which might have led to very different outcomes.¹

Colonel Richard M. Swain

“Why bother with World War I? What’s the point?” I frequently get this question from junior officers, and quite often from more senior ones. Why indeed? In the broader context, of course, there is very little question about the historical significance of World War I. The war marked the death of an entire way of life in Europe, and the true beginnings of the modern era. When World War I ended, four of the world’s five great empires were dead, and the fifth was mortally wounded. The war marked the start of the shift of global power from the center of Europe to America and Russia on the flanks. In his 2001 book, *Forgotten Victory*, Gary Sheffield called the Great War “the key event of the twentieth century, from which everything else flowed.”²

Yet despite its social, political, and economic significance, popular history has given the military aspects of World War I a very bad reputation. The conventional image of that war is one of a senseless blood bath—a dull and grinding war of attrition conducted by incompetent, even criminally stupid generals, without a trace of strategic thought or tactical innovation. Thus, many today believe that World War I has nothing to teach the modern soldier, especially in comparison to World War II, with its fast-moving armored and airborne divisions. Any detailed study of World War I seems largely irrelevant by comparison.

Much of the existing image of World War I is based on the vivid descriptions of contemporary poets and popular writers, many of who experienced directly the horrors of the Great War. The writings of Erich Maria Remarque (*All Quiet on the Western Front*), Robert Graves (*Good-bye to All That*), Siegfried Sassoon (*Memoirs of an Infantry Officer*), Vera Brittain (*Testament of Youth*), and especially C.S. Forester (*The General*) have left a lasting imprint on the popular mind, and to some extent have influenced the scholarly mind as well. With few exceptions, the most notable being Germany’s Ernst Jünger (*Storm of Steel*), the

2 Why still bother with World War I?

World War I writers and poets cast their own experiences in a largely anti-heroic light, which profoundly influenced the way people looked at war in general for the remainder of the 20th century.³ As Professor Brian Bond has pointed out, the literary writers either ignored, or failed to address convincingly, the larger historical, political, and strategic questions of the war. What was it about and why was it fought?⁴

The observations of the military historians and theorists who wrote during the 1920s and 1930s were even more critical of the Great War's significance and conduct. In his 1987 book, *The Killing Ground: The British Army, the Western Front and the Emergence of Modern Warfare, 1900–1918*, Tim Travers identified two basic British schools of thought that had emerged by the 1930s. Although Travers referred specifically to the evaluation of the British Expeditionary Force (BEF), his model applies to the historiography of the entire war.⁵

The “Internal Factor,” or “Mud and Blood” school of thought, holds that the slaughter on the Western Front was caused by the incompetence of the generals, with their bloody-mindedness, their physical and intellectual distance from actual front-line conditions, and their Victorian-era insensitivity. Among the most influential books of this school are Liddell Hart's *The Real War* and Lloyd George's *War Memoirs*. More recent contributions from this school include John Ellis' *Eye-deep in Hell: Trench Warfare in World War I*, and Lyn MacDonal'd's *They Called It Passchendaele* and *To the Last Man: Spring 1918*. The approach of this school is appealing because it is easy to understand in human terms. It is also far too simplistic, too pat. The notion that Germany, Britain, France, Austria-Hungary, and Russia all simultaneously produced complete higher-officer corps full of idiots requires too much of a stretch.

The “External Factor” school blames the Western Front deadlock on a combination of inexperienced staff officers, the technical difficulties of mastering new technology, the impressive tactical fighting ability of the Germans, and the interference of political leaders in strictly military affairs. The significant contributions from this school include the fourteen volumes of the British official history edited by Sir James Edmonds, and John Terraine's *Douglas Haig: The Educated Soldier*. But the arguments of this school are overly simplistic as well, and serve as apologists for the genuinely incompetent commanders the war did produce.

The past thirty years have seen the emergence of a third school of thought, which Travers calls the “Realists.” The writers of this school take a more balanced approach to the study of World War I. The general thrust of their argument holds that the clash between old ideas and new weapons and technology, combined with the huge scale of the war and a lack of combined arms coordination, caused serious tactical and operational problems on all sides. While the new technology was an external factor, the inability to integrate the new weapons was an internal flaw.

In *The Killing Ground*, Travers also describes the paradigm shift from muscle-powered warfare to machine-powered warfare that is perhaps the most recognizable characteristic of World War I. It was a paradigm shift that occurred so fast that most military commanders and staff officers were unable to come to

grips with it within the course of the war. Moreover, it was a shift that occurred unevenly, and this more than anything else caused the deadlock on the Western Front.

The two basic elements of combat power are fire and maneuver. Throughout military history the two have been locked in a constant struggle for dominance. Rarely has one gained the upper hand, or held it for very long. Yet by 1914 fire-power technology was far ahead of mobility technology. Machine guns and rapid-firing artillery had truly mechanized firepower by 1914, but battlefield mobility was still based primarily on human and horse muscle power. This would begin to change by 1918, with the emergence of combat aircraft, the tank, and increased use of motor vehicles; but for most of World War I firepower retained the upper hand.

The writers of the Realist school point out just how difficult it was for even the most talented and intelligent of the Great War's military planners to come to grips with these changes that came on a "future shock" scale. They also argue that by 1918 the tactical and technical solutions were starting to emerge. World War I ended in exhaustion before the new solutions could be brought to fruition, but they formed the seedbed for the mobile tactics and operations of World War II.

One of the strongest and most concise arguments for the significance of World War I in the history of warfare can be found in Jonathan Bailey's 1996 pamphlet *The First World War and the Birth of the Modern Style of Warfare*. Bailey argued that between 1917 and 1918 "a Revolution in Military Affairs (RMA) took place which, it is contended, was more than merely that; rather it amounted to a Military Revolution which was the most significant development in the history of warfare to date, *and remains so*."⁶

Bailey built a strong and logical argument to support this seemingly radical thesis. He drew a sharp distinction between a *revolution in military affairs* and a *military revolution*. According to one definition, an RMA is "a discontinuous increase in military capability and effectiveness arising from simultaneous and mutually supportive change in technology, systems, operational methods, and military organizations."⁷ A *military revolution*, according to Bailey, "embodies a more fundamental and enduring transformation brought about by military change."⁸ The key distinction is that a military revolution introduces an entirely new concept in warfighting, rather than just quantum improvements in current ways of operating.

Bailey argued that the period on the Western Front from 1917 to 1918 introduced such a military revolution that brought about the birth of the *modern style of warfare*, "with the advent of three dimensional artillery indirect fire as the foundation of planning at the tactical, operational, and strategic levels of war." The result was something fundamentally different and new in warfare—operations in three dimensions and in depth.⁹

Essentially then, Bailey argued that the World War I paradigm shift was far more extensive than the muscle to machine shift described by Travers. Bailey suggested that the 1917–1918 shift to the *modern style of warfare* was so

revolutionary that the subsequent introductions of armor, air power, and information-age technology have amounted to no more than complements to it. These advances have been incremental, technical improvements to the efficiency of the conceptual model of the modern style of warfare.

Bailey also argues it was the *indirect fire revolution* that grew out of the experimentation in the years just prior to World War I that made possible the conceptual leaps to three-dimensional warfare and deep battle. The supporting technologies of 1917–1918, however, were not up to the potentials of the indirect fire model. Specifically, transportation capabilities were inadequate for artillery to move forward rapidly and be re-supplied over rough terrain, and communications were inadequate to maintain decentralized command and control of the fire plan once an operation started. As a consequence, contemporary popular wisdom accepts that artillery dominated the battlefield in World War I. Few really understand, as Bailey argued, that artillery fire was the key to maneuver rather than the agent of stalemate. The technical solutions to these problems emerged in the years between the World Wars and proved themselves on the battlefields of World War II and since. As Bailey noted, “Clearly between 1914 and 1918 something of extraordinary historical profundity and enduring military significance had happened.”¹⁰

According to Bailey, the RMA we are experiencing today is essentially an echo of World War I and hardly revolutionary by comparison. Key elements of today’s RMA include: precise standoff strikes; real-time Command, Control, Communications, Computers, and Intelligence (C4I); information operations; and non-lethality. In 1917–1918 terms these would have been called: accurate indirect fire; improvement in command and control and intelligence; the means of acting upon it; and the munitions and techniques of neutralization and suppression.¹¹

Other works from the “Realist” school include Gary Sheffield’s *Forgotten Victory: The First World War Myths and Realities*; Shelford Bidwell’s and Dominick Graham’s *Fire-Power: British Army Weapons and Theories of War 1904–1945*; Bruce Gudmundsson’s *Stormtroop Tactics*; Jonathan Bailey’s *Field Artillery and Firepower*; Rod Paschall’s *The Defeat of Imperial Germany, 1917–1918*; Bill Rawling’s *Surviving Trench Warfare: Technology and the Canadian Corps, 1914–1918*; and my own *Steel Wind: Colonel Georg Bruchmüller and the Birth of Modern Artillery*.

The German 1918 offensives as a model

World War I also witnessed the first truly modern appearance of the Operational Level of War, which is the central topic of this book. It is not the primary objective of this study, however, to speculate on ways in which the Germans could have won World War I, or even could have achieved some sort of a battlefield victory in 1918. Rather, the primary objective is to use German offensive operations and planning in 1918 as a laboratory to examine and analyze the Operational Level of War. In the course of this analysis, alternative courses of action

will be considered as a means to explore the flaws in German operational planning and execution.

The central purpose of the German military effort between March and July 1918 was Erich Ludendorff's attempt to stage a knockout victory in the west. In four of the five offensives the Germans launched, however, impressive tactical gains failed to lead to operational results, much less strategic success. In the fifth operation, the Germans failed to achieve even tactical success. After the failure of Operations MICHAEL and GEORGETTE, the subsequent offensives were supposed to set the conditions for the planned but never launched Operation HAGEN. Operationally, first MICHAEL, then GEORGETTE, and then HAGEN were supposed to knock the British out of the war, which would then lead to the strategic result of an Allied collapse in the west before enough fresh American forces could arrive to tip the strategic balance.

Ludendorff's ultimate strategic objective, however, was to achieve a decisive and unconditional military victory over the Western Allies, rather than establish a position of relative strength from which to negotiate a conclusion to the hostilities that would be favorable to Germany on the balance sheet. Most historians agree that such a decisive military victory was far beyond Germany's capabilities and resources in 1918. This, perhaps, was the fatal flaw or "disconnect" between the strategic and operational levels that doomed Ludendorff's offensives from the start. With more realistic strategic objectives and better operational design, however, Germany just might have been able to conduct a series of operationally successful campaigns and end the war in a far better strategic position than it actually did.

The tactical outcomes of Ludendorff's offensives are well known. The objective here is to compare the results with the plans and the process at the operational level, to identify the flaws, and to explore possible alternatives. This study attempts to answer the following questions:

- 1 What were the German planners and decision makers thinking, and what did the operations orders say?
- 2 How did the execution vary from the plans, and what impact did this have in the short and long term?
- 3 Given that the operational objectives did not support the strategic realities of 1918, could the German strategic and operational objectives have been modified to improve the chances of success?
- 4 Did the operational design maximize the tactical realities of 1918?
- 5 Why did each (and all combined) of the Ludendorff offensives fail to set the conditions for HAGEN?
- 6 Were the failures ones of planning or of execution?
- 7 What were the objectives and details of the HAGEN plan?
- 8 With the proper conditions, could HAGEN or any of the other offensives have succeeded—and if so, how?
- 9 At the operational level, what lessons did Germany learn or mis-learn from 1918?

Question Number 7 is especially intriguing. To the best of my knowledge, no scholarly study has ever been made of the HAGEN plans.

Scope and methods

This book focuses on German offensive operations and planning on the Western Front from November 1917 through July 1918. The discussion includes the Eastern Front, defensive operations in 1918, and overall operations in 1914–1917 only insofar as necessary to explain the plans and actions of the Ludendorff offensives. I have conducted the analysis from the point of view of the Germans. I have, of course, considered and described the responses of the Western Allies—the British, French, and Americans—but I have neither analyzed their plans nor critiqued their actions.

The main purpose of this study is to analyze the 1918 offensives at the operational level of war. In order to establish the framework for the analysis, I have devoted a considerable amount of discussion to the theory and development of Operational Art. I have also examined Operational Art as it was understood in the German Army before and during World War I. It is impossible to divorce completely the operational from the strategic and tactical levels. Thus I have also considered the German strategic situation in 1918 and the tactical and technical realities of World War I.

In conducting this analysis, I have relied on both primary and secondary sources. I have consulted published books, magazine and journal articles, official histories, and both contemporary and present-day doctrinal manuals. I have also examined all of the surviving German plans and records of the five Ludendorff offensives, and the planning files for Operation HAGEN. As described in the section below on primary sources, most of those records are in German.

In attempting to reconstruct the German decision-making and planning process, I have applied many of the tools and techniques of the military intelligence officer—a field in which I have some practical experience. Both the military historian and the military intelligence officer face similar challenges, and in many cases they use similar analytical tools. While the military historian tries to reconstruct and understand the past, the military intelligence officer works in the opposite temporal direction in an effort to predict future actions. Both, however, are concerned with identifying the capabilities, intentions, institutional culture, leadership, and courses of action of a military force. Both work at these tasks from a distance, and both are faced with the similar challenge of working from partial, often conflicting, and sometimes intentionally misleading information from a wide variety of sources of varying accuracy and reliability. The ultimate objective for both is to produce the best possible analysis from the best information available. This process can be as much an art as it is a science.

In analyzing the Ludendorff offensives at the operational level, I have focused on the systems and assets that intelligence analysts rely upon to develop an enemy's operational signature. In World War I these would have included air power, long-range and heavy artillery, and rail transport. Artillery is an

especially important element of this analysis because it was in World War I that artillery firepower first acquired an operational role. By 1918 the Germans had a clear understanding of the difference between the close and the deep battle and the need to coordinate the two.

I have also considered the operational options, the plan, the preparations, and the execution for each of the operations. In assessing these operations, it is necessary to evaluate them against a model of a framework of the Operational Art. Unfortunately, no universally agreed upon framework exists. Even to this day the doctrinal manuals of a single country are often in conflict. Furthermore, many of today's operational concepts would not have been understood by commanders in 1918. For these reasons, in the following chapter I will develop and propose a Framework of the Operational Art for use throughout this study.

The primary sources

Since the end of World War I a great deal has been written about the German offensives of 1918. This is particularly true of the first and last offensives, Operation MICHAEL (21 March–5 April) and Operation MARNESCHUTZ–REIMS (15–18 July). The three middle operations, GEORGETTE (9–29 April), BLÜCHER (27 May–13 June), and GNIESANAU (9–13 June) have not been covered as extensively. The thoroughly planned but never launched Operation HAGEN only receives passing mention in the existing literature.

Much of this analysis has focused on the tactical level of war; on the planning, the conduct, and the results of the battles themselves. Several writers have placed the Ludendorff offensives in the strategic context, showing very clearly the impossibility of the German situation in 1918, despite what happened on the battlefield. To date, there has never been a thorough analysis at the operational level of war—that vital link between the strategic and the tactical. Some of the previous writings touch on various elements of the Operational Art, and some describe German planning and decision making at the operational level. None, however, have conducted a systematic analysis at the operational level, nor has there been a consideration of possible alternatives within a framework of more realistic German strategic objectives.

Much of what has been written in English about the German side in 1918 has been based on secondary sources, and much of that was published originally in German. Researching the German records today is a challenging proposition. The German Army in World War I kept fairly complete and accurate records. At the conclusion of the war, however, not all the records went to the *Reichsarchiv* in Potsdam. The records of Bavarian Crown Prince Rupprecht's Army Group, including those of the Sixth but not the Fourth Army, were sent instead to the *Bayerisches Kriegsarchiv* in Munich.

In 1944 many of the original World War I records in the *Reichsarchiv* were destroyed in a fire when Potsdam was bombed. After World War II, the bulk of the surviving World War I records became part of the *Bundesarchiv* collection in Koblenz. Some of the surviving records in Berlin, however, fell into Soviet

hands and wound up in the *Kriegsarchiv* of the German Democratic Republic (DDR). In the 1960s, all the West German-held military records were relocated to the newly established *Bundesarchiv/Militärarchiv* (BA/MA) in the southwestern university town of Freiburg.

After the reunification of Germany, the records in the DDR *Kriegsarchiv* were consolidated with those of the BA/MA in Freiburg. Fortunately, the records in the *Bayerisches Kriegsarchiv* survived the World War II bombing of Munich, and they remain in that city. These records include Rupprecht's units in Operation MICHAEL, virtually all of GEORGETTE, and all of the planning files for HAGEN. During the course of my research, I spent several weeks in the *Bayerisches Kriegsarchiv* and almost five months in the *Bundesarchiv/Militärarchiv* studying the records in their collections.

The BA/MA also holds several important collections of personal papers (*Nachlass* in German). Some collections, including the professional papers of Colonel Georg Bruchmüller, were lost in the Potsdam fire. Bruchmüller's personal papers (N/275) survived, however, and are currently in Freiburg. Other important collections in the BA/MA relevant to the 1918 offensives include the papers of Hans von Seeckt (N/247); Friedrich Graf von der Schulenburg-Tressow (N/58); Hermann Geyer (N/221); Hans von Haeften (N/35); and Joachim von Stülpnagel (N/5).

Although many of the key original documents were destroyed in 1944, copies of some of those records have survived. Under the terms of a bilateral agreement between Germany and the United States, both sides had unrestricted access to the other's World War I military records until well into the 1930s. Between 1919 and 1937, the U.S. Army War College Historical Section maintained a senior American officer and a small locally hired clerical staff in Potsdam, transcribing selected records. The first officer assigned to this duty was Major Walter S. Krueger.¹² Born in Germany and fluent in German, Krueger would later command the U.S. Sixth Army in the Pacific in World War II. Other officers assigned as Representatives of the Historical Section included Colonel Lewis S. Sorley (1922–1926); Major Bertram Cadwalader (1926–1928); Lieutenant Colonel C.H. Müller (1928–1932); Major J.O. Wagner (1932–1936); and Major J.P. Ratay (1936–1937). Ratay closed the mission and left Potsdam in December 1937—almost five years after Hitler came to power. I am especially grateful to Lieutenant Colonel Lewis B. Sorley (U.S. Army, Retired) for sharing with me the section of his grandfather's unpublished reminiscences that deal with his time as head of the Potsdam mission.¹³

The American effort focused almost exclusively on the Western Front from about mid-1917 through the end of the war—the period of direct American involvement. As a result of these efforts, many of the most important German records of the Ludendorff offensives and the later 1918 battles have survived. The records of many significant Eastern Front battles, such as Riga in September 1917, were not copied by the Americans and were lost forever in the 1944 fire.

The American team in Potsdam did not translate any documents. They transcribed them word-for-word in the original German, typewritten with multiple

carbon copies (at least two copies), using the brownish, semi-transparent, brittle copy paper of the day. After the transcribed documents were sent back to the Army War College, then located in Washington, they were split into two groups. Almost all the records from Operation BLÜCHER on were sent to Fort Leavenworth. There they were translated into English and used for lesson plan material throughout the 1920s at the U.S. Army Command and General Staff College. In 1923 some of the documents relating to Operation MARNESCHUTZ–REIMS were published by the General Service Schools Press at Fort Leavenworth in a book titled *The German Offensive of July 15, 1918 (Marne Source Book)*.

The plan may have been to translate the records prior to BLÜCHER at some later date, but that apparently did not happen. The copies of the transcribed records eventually went to the U.S. National Archives and Records Administration (NARA), where they form the core of Record Group 165. This entire record group is now on microfilm. During the 1970s, the NARA gave the BA/MA what appears to be a complete set of carbon copies of the transcribed documents to help rebuild the collection lost in 1944. Copies of the translated documents, however, are not in the BA/MA. As near as I have been able to determine, the U.S. NARA does not have copies of the documents that were translated into English at Fort Leavenworth.

As of 1997, some copies of the translated documents were still in the Combat Arms Research Library (CARL) at Fort Leavenworth. At the time, they were part of an uncatalogued collection of World War I material sitting on a shelf at the back of the library. From my earlier work on the book *Steel Wind: Colonel Georg Bruchmüller and the Birth of Modern Artillery*, I recognized immediately that many of these records did not exist in the BA/MA in Freiburg. I believe I have been successful in obtaining photocopies of all the existing translated records at CARL with the kind cooperation of the staff. Of the slightly more than 900 documents I used for this analysis, some 200 of them, especially from Operations BLÜCHER and GNEISENAU, are from the CARL holdings. To the best of my knowledge they existed nowhere else until I donated a set of the copies to the BA/MA in December 2004.

Research limitations and risks

One of the most serious errors in historical analysis is to impose current thinking and values on the past. Yet the very concepts of the *operational level of war* and the *operational art* are relatively recent constructs. The Soviets coined the term “operational art” in the 1920s, and the U.S. Army only recognized the operational as a distinct level of war in 1982.

On the other hand, there has long been an understanding of certain distinct military activities that existed either at the high end of the tactical spectrum, or at the low end of the strategic. The term “*grand tactics*” was in vogue for some time. Likewise, many of the specific concepts we now associate with the Operational Art have been understood and appreciated for many years. *Culmination* and *center of gravity*, for example, are Clausewitzian notions, while both Jomini

and Clausewitz discussed *decisive points*. Even Clausewitz's narrow definition of *military strategy* comes very close to what we would today call operational art: "the use of engagements for the purpose of the war."¹⁴

Although not necessarily called the "operational level of war," the German Army first started to pay serious attention to this category of activities from about the time of Moltke the Elder. Thus the challenge of this study has been to evaluate the six operations against a framework of operational art as it would have been understood by the Germans in 1918. As German historian Hans Delbrück noted, the history of every military institution should be written within the context of its national history.¹⁵

2 The operational art

I object to the word “operations.” We’ll just blow a hole in the middle. The rest will follow of its own accord.¹

General of Infantry Erich Ludendorff

As noted in the Introduction, the concepts of the “operational level of war” and the “operational art” are constructs that started to evolve in the late 19th century and were only fully accepted in the West within the last thirty years. There remains today, moreover, a considerable amount of discussion among military theorists as to what these ideas really mean, what their components are, and how they fit into the scheme of the much older notions of strategy and tactics.² During the period of World War I, most armies in varying degrees had some understanding of many of the basic components of the operational art, but they all lacked an overall conceptual framework.

Prior to analyzing the German 1918 offensives at the operational level, therefore, it will be necessary to consider exactly what operational art is; its evolution in military thought and practice; and how it was understood and practiced in the German Army up through 1918. In order to develop a full understanding of the operational art, it also will be necessary to discuss briefly its development and evolution since World War I and up through the present. Finally it will be necessary to review the key elements of the operational art as they are currently understood and practiced today. From these elements we will construct a framework to analyze the 1918 German offensives.

The tactical–strategic link

The purpose of tactics is to win battles. The purpose of strategy is to win wars. The purpose of the operational art is to win the campaigns, which are based upon battles and which in turn contribute to strategic victory.³ Put quite simply, then, the operational art is the vital link between tactics and strategy. The U.S. Army Command and General Staff College employs a simple graphic device to illustrate this point. The entire spectrum of warfighting activity is likened to a medieval morning star. The spiked ball that delivers the blow represents tactics.

The wooden handle that directs the blow represents strategy. The flexible chain that connects the two represents operational art.

It is a useful analogy, but it is one that comes apart if pushed too far. While in most cases tactical successes form the building blocks of operational success, and successful operations lead to strategic victory, this is not always the case. Nathaniel Greene's 1784 Southern Campaign in the American Revolution provides a clear example of a general who lost every battle but still won the campaign. In more recent history, the U.S. Army won virtually every one of its battlefield engagements in Vietnam, yet America still lost the war. This, then, indicates that the relationships and the linkages among tactics and the operational art and strategy are all very dynamic and situationally dependent.

For that reason, "operational art" remains a far better name for this category of activities than does "operational science." Shimon Naveh wrote that it is only at the operational level that the extremes of the abstract strategic and the mechanical tactical can be fused. This, in turn, generates a certain amount of dynamic tension.⁴ The 1918 Ludendorff offensives offer one of the starkest yet most complex examples of a string of stunning tactical successes that led nowhere.

This still does not answer the question of what exactly the operational art is. The manual *ATP 35 NATO Land Forces Tactical Doctrine* defines the operational level of war as

The operational level provides the vital connection between the military strategic objectives and the tactical employment of forces on the battlefield through the conception, planning, and execution of major operations and campaigns.⁵

The 1993 edition of the U.S. doctrinal manual *FM 100-5, Operations* defines the operational art as

The employment of military forces to attain strategic and/or operational objectives within a theater through the design, organization, integration, and conduct of theater strategies, campaigns, major operations and battles. Operational art translates theater strategy and design into operational design which links and integrates the tactical battles and engagements that, when fought and won, achieve the strategic aim. Tactical battles and engagements are fought and won to achieve operational results. No specific level of command is solely concerned with operational art.⁶

The last sentence is particularly significant. Operational art was once thought to describe battlefield actions of the corps and higher levels. The real focus, however, is on the linkage to strategic aims. The size and nature of the war itself also have some bearing on where the operational level begins. In the Vietnam War, American divisions mostly functioned at the operational level; while in the last years of World War I on the Western Front and World War II on the Eastern Front most actions below the army-group level were tactical.

As most contemporary military theorists argue, the very nature of the operational art is significantly different from tactics. General Donn A. Starry, one of the leaders of the post-Vietnam American military reform, suggested that “one goal of the Operational Battle must be to lessen the probability of prolonged military operations.” This point has a special resonance when considering the operational art during World War I. Starry also suggested that the operational art should seek to deny the enemy access to the objectives he seeks; deny the enemy’s follow-on reinforcement; and find the opportunity to seize the initiative by destroying the integrity of the enemy’s operational scheme.⁷ Naveh advanced a similar argument by maintaining that the aim of the operational art should be the disruption of the enemy’s system.⁸

James Schneider suggested that the dominant characteristic of the operational art is the “distributed free maneuver of forces in a theater of operations.” Distributed free maneuver leads to the dispersion of combat force in space and time. This is opposed to the dominant feature of military operations up to the time of Napoleon—“concentrated maneuver of forces in a theater of operations culminating in a single decisive battle.”⁹ Like Schneider, Naveh asserted that operational thinking is a significant departure from the Clausewitzian notion of the destruction of the enemy’s force. (More on this line of thought in the following sections.) Naveh also introduced the concept of “Interactive Cooperation.” He defined this as the interaction between the holding element and the striking element of a force, with the relationship between the two varying from the operational offensive to the operational defensive. In the operational offense the striking element is superior in weight, length, and velocity. In the operational defense the superiority in weight and resources are on the side of the holding element, with the striking element having a thin and shallow vector. In both situations, decision is ultimately attained by the dynamic action of the striking force.¹⁰ Note the similarity between Naveh’s concept of the operational defense and Clausewitz’s “shield of blows.”

Richard Simpkin stressed the importance of synergism at the operational level, where the whole of the operation must have a greater effect than the sum of its parts. In the modern context, operational synergy includes the integration of air, land, and sea forces. During World War I, however, military planners wrestled with the problem of synergy on the even more fundamental tactical level. By 1918, only a limited number of those planners were beginning to understand fully the intricacies of combined arms (also called all arms) warfare that synchronized the tactical effects of infantry, artillery, armor, air attack, engineers, and the supporting services. Each possesses a distinctive tactical quality—effect, dimension, range, duration, etc. The strength of one compensates for the weakness of the others, while at the same time complementing the strengths of the others.¹¹

There are a number of specific elements and components that constitute the operational art and which military planners must consider when developing the overall campaign plan. These will be discussed in detail in the concluding section of this chapter. But before a military commander or planner can begin to deal with that level of detail, a group of far more basic considerations must be

addressed. These considerations are identified in the current version of U.S. *Joint Publication 3-0, Doctrine for Joint Operations*. These considerations are so fundamental that they can be used to evaluate virtually any military action at the operational level of war.¹²

The necessary military conditions: What is the definition of success? What is the desired end state? What are the goals? Without operational goals there is no basis for operational planning or decision making.

The necessary sequence of events: In most circumstances it is unlikely that a strategic goal can be achieved with a single operational stroke. What, then, are the stepping-stones to get there? Because of the dynamics of the battlefield, these steps cannot be fixed. What, then, are the branches and sequels to the operational plan? This recalls Moltke's famous dictum: "No operations plan will ever extend with any sort of certainty beyond the first encounter with the hostile main force."¹³ As A.S.H. Irwin noted, it is the sequencing of operations that constitutes the precise difference between a battle and a campaign.¹⁴

The necessary resources: This includes both the combat power (manpower, weapons capabilities, etc.) and the major logistical component (supplies, transportation, maintenance, etc.) of the plan. At the operational level of war, the logistical realities dictate the combat possibilities far more than at the tactical level. As an intelligence indicator, the direction of the logistical tail more often than not points directly to the striking point of the combat teeth.

These three key considerations equate exactly to the three elements of the general military strategy model developed by Colonel Arthur Lykke of the U.S. Army War College. According to Lykke, military strategy consists of balancing the equation¹⁵

$$\text{ENDS} = \text{WAYS} + \text{MEANS}$$

Compared to *Joint Publication 3-0*, Lykke's Ends equate to the necessary military conditions; Ways equate to the necessary sequence of events; and Means equate to the necessary resources.

Even with all these considerations, it can still be very difficult to determine exactly where the tactical level ends and the strategic level begins. The three levels of war, in fact, are not discrete, and a fair degree of overlap occurs from situation to situation. Writing in 1993, Irwin suggested three key tests to identify the operational level of war. A "yes" to one or more of these tests indicates that the actions are at the operational level.¹⁶

First, is there a political dimension? Simpkin noted that an operational mission should be only "one remove from the strategic objective."¹⁷ In the case of the 1918 offensives, Ludendorff wanted to collapse French resolve by knocking Britain out of the coalition.

Second, does the action have a possibility of achieving a decision that will materially alter the situation in terms of the overall campaign? In 1918 Ludendorff wanted to eliminate the BEF before American troops arrived in force and tipped the strategic balance.

And third, does the action have a possibility of achieving a decision that will materially assist in achieving the strategic goals? Rather than ending the war with a negotiated peace, Ludendorff believed that he could actually achieve a decisive military victory that would leave Germany in control of the strategic Belgian coast.

The evolution of the concept of the operational art

Strategy and tactics have long been identified as distinct albeit connected spheres of military theory and action. The notions of the operational art and the operational level of war are of far more recent origin. The military theories underlying the operational art did not evolve uniformly; rather they progressed in stages over the course of the last two centuries. Among many of the world's great armies during this period, major defeats provided the impetus for intellectual advances in doctrine. This is particularly true of Prussia following Jena; the Soviet Union following Warsaw in 1920; Germany following World War I; and the United States following Vietnam.¹⁸

These particular examples line up nicely with the four key landmarks in the evolution of operational theory suggested by Naveh. The first is the period of 19th-century military thought, which Naveh called the "roots of operational ignorance." This period ended in the 1920s and was characterized by an "attempt to manipulate tactics on a major scale." Soviet Deep Operations Theory followed, which broke with the Clausewitzian paradigm of the battle of annihilation (*Vernichtungsschlacht*). Then came the German so-called *Blitzkrieg*, which Naveh and others have argued lacked the fundamentals of true operational thought. And finally, American AirLand Battle, which formed the basis of the overwhelming Allied success in the 1991 Gulf War.¹⁹

19th-century military thought

The operational art is a distinct product of the modern age, with roots imbedded firmly in the Industrial Revolution. As the range and lethality of modern weapons increased, the battlefield expanded by necessity. Technological improvements made it increasingly less necessary to achieve massed effects with massed formations of troops. Simultaneously, those same improvements in weapons transformed the tightly packed massed formations of old into far more vulnerable and lucrative targets. As armies grew, modern warfare also became increasingly dependent upon the will and resources of the entire populations of nations.²⁰

Although there is no rigid connection between unit size and the operational level of war, the operational art is clearly concerned primarily with the deployment, movements, and actions of larger units. Large-scale battlefield operations in the modern sense first emerged with the *levée en masse* and Napoleon's mass armies. Some would even argue that Napoleon actually created the prototype of the operational art with his maneuver of multiple corps formations on a grand

scale.²¹ The structure and organization of armies were never the same after Napoleon. Throughout the 19th century and into the 20th, large armies continued to be regarded as one of the principal factors for success in war. Writing on the eve of World War I, General Friedrich von Bernhardi noted: "Numbers seem to the present generation the decisive factor in war;" and, "all states of Europe are dominated by the mania for numbers."²²

In the years following Napoleon his two major interpreters, Antoine Henri Jomini and Carl von Clausewitz, contributed much to the foundations of the operational art as we understand it today. Jomini hinted at an intermediate level of war, and he used the term "Grand Tactics" to describe it. His description of grand tactics is very close to the modern notion of the operational art: "The art of making good combinations preliminary to battles, as well as during their progress."²³

Clausewitz emphasized the distinction between strategy and tactics, but a close reading of *On War* suggests that when Clausewitz spoke of "policy" he was speaking of what we now call strategy; and when he spoke of strategy he was really talking about what we now call operations. As he noted: "According to our classification then, tactics teaches *the use of armed forces in the engagement*; strategy *the use of engagements for the object of the war*" (emphasis in the original).²⁴ In one passage in *On War* Clausewitz clearly identified three distinct levels of war in both time and space: "The concepts characteristic of time—war, campaign, and battle—are parallel to those of space—country, theater of operations, and position."²⁵

Historians are split on whether or not Clausewitz really had a clear grasp of the operational as distinct from the tactical and strategic. Bradley Meyer noted: "Clausewitz, like Moltke, used the term strategy to describe a phenomenon that would generally be described as operational art today."²⁶ Naveh, on the other hand, contended that, while Clausewitz recognized an intermediate sphere of military activity that synthesized mechanics with cerebration, he never understood the distinctive problems of the operational level of war. He thus, according to Naveh, relegated the operational level to an auxiliary one, designed to give tactical battle some of its technical requirements.²⁷

Naveh's criticisms of Clausewitz's operational thinking often seem to take on a post facto character, almost as if Clausewitz should have been writing with fully developed 20th-century military technology in mind. Naveh, for example, criticized Clausewitz for placing greater value on operational destruction than on mobility.²⁸ And Clausewitz did in fact write: "Destruction being a more effective factor than mobility, the complete absence of cavalry would prove to be less debilitating to an army than a complete absence of artillery."²⁹ In Clausewitz's day, however, there was a great deal of truth to this.

Technology is clearly a major factor that influenced the development of operational theory. Improvements in battlefield mobility and communications have made possible speed and maneuver on vast scales while simultaneously maintaining control of units over a wide area. As technological capabilities evolved, operational theory evolved with them. The military use of the railway was

perhaps the most influential technological change in the second half of the 19th century. Railways made possible rapid movement of large masses of troops and equipment; the correspondingly shortened transit time reduced feeding and billeting requirements; troops and horses arrived in relatively fresh condition; and improved logistical support enabled the sustainment of mass conscript armies in the field. The first operational use of military railways occurred in 1849, when a Russian corps moved from Warsaw to Vienna to protect the city from Hungarian rebels.³⁰ During the American Civil War, two Union corps—more than 20,000 troops, their equipment, and horses—moved 1,230 miles by rail in just eleven days in September 1864.³¹ Moltke made a careful study of the lessons of the American Civil War, and in 1870 the Germans made far more masterful use of their rail system than did the French.

There is some debate, however, on the influence of railways on the operational art. Naveh suggested that the railways were a means of strategic movement, but not of operational maneuver. He further argued that efforts to use rail in the service of a strategic offense resulted in such distortions that operational maneuver could not be applied. These distortions were caused by the technical limitations of the rail system, which imposed its broad linear patterns on any deployment, thereby dooming true operational maneuver.³² Moltke himself believed rail was an inflexible instrument, its effective use based on strict timetables. While this may have been true in 1870, European trackage tripled between 1871 and 1914. At the start of World War I the rail network in Europe was so dense that there was a far greater amount of flexibility in its use. By 1913 Germany had twelve kilometers of track for every 100 square kilometers of territory; France had ten; Austria-Hungary had seven; and Russia had only one.³³

Advances in communications technology also made possible command and control of units spread across the battlefield on a scale previously unimaginable. First the electric telegraph, then the telephone, and then radio made real-time control possible over great distances; but these innovations also generated a false illusion of absolute control. In 1870 Germany had 1,000 telegraph stations; by 1911 it had 637,000. Early electronic communications technology, however, also had something of a retarding effect on operational maneuver. Permanent telegraph lines to a German Army headquarters in the field could be laid at the rate of only five miles per day—which could almost never keep pace with the rate of advancing units. And the ability to communicate often led directly to a tendency to over-control and micro-manage—a problem that most armies still grapple with at the start of the 21st century. By 1917 the average British field army's daily communications traffic averaged something like 10,000 telegrams, 20,000 telephone calls, and 5,000 messenger-delivered dispatches.³⁴ How much of that volume, one wonders, was really necessary for the planning and conduct of battlefield operations?

By the final decades of the 19th century, the Napoleonic concept of the “strategy of a single point” had given way to Moltke's concept of the “extended line”—which in turn finally reached its logical conclusion in the extended trenches of World War I. As battle lines expanded, the ability to control them

directly decreased. Even with the improvements in communications technology, command and control increasingly became more indirect, through added layers of subordinate echelons.³⁵ At the start of the 20th century the Russo–Japanese War provided a brief foreshadowing of the technological “future shock” and the resulting tactical and operational problems that would come in World War I. The battlefield in Manchuria assumed previously unimagined levels of breadth and depth. The main problem became one of conquering space and time to bring about a concentration of combat power at the decisive point.³⁶ In 1904 the available technical means of mobility, communications, and control were not equal to the demands of the battlefield—nor would they be ten years later.

Although we will later discuss in detail German operational art in World War I, it is necessary here to fit the Great War briefly into the overall discussion. World War I in general, and the Western Front in particular, present a problem for the student of the operational art. After Germany’s failure to win a quick and decisive victory, the Western Front fell into a stalemate that lasted almost until the end of the war. Until 1918, the operational art “had more to do with orchestration than with maneuver.”³⁷

The experience of World War I dramatically demonstrated that single operations no longer guaranteed the successful outcome of a campaign, and that cumulative tactical success was no guarantee of strategic success. Decisions could only be brought about by “successive operations linked by intent, location, allocation of resources, and concerted action.”³⁸ This, however, only became clear after the end of the war. Between 1914 and 1918, most military leaders surrounded by the fog of war repeatedly tried to plan and conduct single battles of annihilation that would produce decisive strategic results.³⁹

Writing in the years immediately after World War I, J.F.C. Fuller made one of the most significant contributions in the West to the evolution of the theory of the operational art—which Fuller called Grand Tactics. According to Fuller: “This is the duty of the grand tactician; he takes over the forces as they are distributed and arranges them according to the resistance they are likely to meet.”⁴⁰ Fuller was also one of the first military theorists in the West to articulate clearly that the primary targets of the operational plan should be the enemy’s plan and the will of the enemy commander. For Fuller, the object of grand tactics was the “destruction of the enemy’s plan.”

Fuller also believed that it was an error for the grand tactician to think only in terms of destruction. He argued that when Clausewitz wrote about destruction of the hostile force, he meant it as a means to enforcing policy. Fuller believed that this key point was glossed over by most of Clausewitz’s followers, with the result that destruction became an end in itself, rather than a means. Fuller further noted that, while an objective of destruction was useful at the tactical level, at the level of “grand tactics” it was a serious error. The decisive point, he concluded, was not the body of an enemy’s army, but rather it was “the will of the enemy’s commander.” “To paralyze this will we must attack his plan, which expresses his will—his reasoned decisions. Frequently, to do so, we must attack his troops, but not always.”⁴¹

The grand tactician does not think of physical destruction, but of mental destruction, and, when the mind of the enemy's commander can only be attacked through the bodies of his men, then from grand tactics we descend to minor tactics, which, though related, is a different expression of force.

We see, therefore, that grand tactics is the battle between two plans energized by two wills, and not merely the struggle between two or more military forces.⁴²

Soviet deep operations theory

In the years following World War I Soviet theorists made many significant contributions to the evolution of the operational art as we know it today. Even prior to World War I, Russian military writers around 1907 introduced the concept of *Opertika*.⁴³ Following the disastrous defeat of the Red Army at Warsaw in 1920, two opposing schools of thought emerged among the Soviets. One was led by Marshal Mikhail N. Tukhachevsky, the Red Army front commander at Warsaw. Tukhachevsky, who read Fuller's works, became the champion of the "annihilation" school of Soviet military thought. Annihilation depended upon the ability to conduct large-scale, immediate, decisive operations. It required a war industry in being, and a large standing army.⁴⁴ In 1924 Tukhachevsky delivered a paper on *Maneuver and Artillery* that had a strong influence on the Frunze Reforms of 1924–1925. Those ideas were later formalized in the *Field Service Regulations* of 1927.⁴⁵

The opposing school of thought was led by Major General Aleksandr A. Svechin, a Soviet General Staff officer. In his influential 1926 book, *Strategy*, Svechin advocated the doctrine of "attrition," which relied more on Russia's traditional deep resources of space, time, and manpower. Svechin also introduced the concept of operations as distinct from strategy and tactics. He argued that tactics made up the steps from which operational leaps were assembled, "with strategy pointing out the path."⁴⁶ Within a year of Svechin introducing the concept, the Soviets established a Chair on the Conduct of Operations within the Department of Strategy at the Military Academy of the Red Army.⁴⁷

Both Svechin and Tukhachevsky were murdered in Stalin's purges of the 1930s, but their opposing theories were synthesized by Vladimir K. Triandafillov in his book *The Nature of the Operations of Modern Armies*. Published in 1929, the book was one of the seminal works in Soviet military thought. Triandafillov too had read the works of many of the post-World War I Western writers, and his own view on the operational use of artillery was influenced at least indirectly by the ideas of Germany's Georg Bruchmüller.⁴⁸

Triandafillov was the first to introduce the "planning norms" that became one of the benchmarks of Soviet operational planning. He also laid out the theory of successive operations and deep operations (*glubokaia operatsiia*), with the result that several successive operations were linked into one single continuous deep operation. Thus, the point of Napoleon and line of Moltke gave way to the vector in depth, with its multiple effects—both sequentially and