National Defence Défense nationale

Canadian Forces College

Collège des Forces Canadiennes

CULMINATE AND COUNTER: THE OPERATIONAL ART IN THE DEFENSIVE

Major L.W. Rutland

JCSP 38

Master of Defence Studies

Disclaimer

Opinions expressed remain those of the author and do not represent Department of National Defence or Canadian Forces policy. This paper may not be used without written permission.

PCEMI 38

Maîtrise en études de la défense

Avertissement

Les opinons exprimées n'engagent que leurs auteurs et ne reflètent aucunement des politiques du Ministère de la Défense nationale ou des Forces canadiennes. Ce papier ne peut être reproduit sans autorisation écrite.

Canada

CANADIAN FORCES COLLEGE - COLLÈGE DES FORCES CANADIENNES
JCSP 38 - PCEMI 38

MASTER OF DEFENCE STUDIES

CULMINATE AND COUNTER: THE OPERATIONAL ART IN THE DEFENSIVE

By Maj L.W. Rutland

Word Count: 17,097

Compte de mots: 17,097

CONTENTS

List of Figures

List of Tables

ABSTRACT

Although the focus of Western militaries since the end of the Cold War has been on "Small Wars", the possibility of large-scale conventional combat operations still exists today. As these campaigns will be planned and fought at the operational level, the commander will require a firm grasp of the operational art in order to be successful. In order to gain the required knowledge to successfully apply the operational art, commanders will need to look at historical examples to discern the valuable lessons that will prepare them for combat operations in the modern context. Such historical examples generally focus on offensive campaigns.

This paper argues that the operational art is just as applicable in a defensive context, although there are unique considerations that need to be taken into account by the operational commander in order to successfully apply the operational art while on the defensive. The origins and development of the operational art will be examined in order to provide context for modern operational art theory. An offensive campaign, the 1940 German invasion of France, will be examined in order to demonstrate the application of operational art theory. A defensive campaign, the German defensive campaign at Kharkov in 1943, will then be reviewed to show how the operational art can be applied on the defensive. The modern context will be studied in order to consider how operational art could be applied under current conditions in a defensive campaign. Key factors that the operational commander will need to consider when planning and executing a defensive campaign will be outlined to conclude the paper.

1. INTRODUCTION

"Methods of accomplishing operational or strategic objectives in the past might be obsolete today, but the fundamentals of strategy or operational art remain essentially the same as they were in the recent of even distant past."

-Milan Vego[1]

"Small Wars" have dominated the security spectrum since the turn of the century, with the focus of the West on counter-insurgency campaigns in Iraq and Afghanistan, combined with small-unit training and direct action missions worldwide in support of the "Global War on Terror". Such focus has been maintained on these types of operations that the continued validity of large-scale conventional operations has been questioned. Such ideas are misguided; since the end of the Cold War, large-scale combat operations such as Operation Desert Storm and the combat phase of Operation Iraqi Freedom have required considerable skill in large-scale conventional operations. With operations in Iraq and Afghanistan drawing to a close, conventional forces building up in geopolitically unstable areas, and a resurgent China and Russia attracting attention, large-scale conventional operations require the consideration of the modern military professional. As stated by John English: "the days of large armies and great wars just might not be over."[2]

In such large-scale conventional combat operations, it is the operational level commander and his staff that take the direction provided at the strategic level and

---

[1]Milan Vego, "Military History and the Study of Operational Art," *Joint Force Quarterly* Issue 57, 2nd quarter (2010): 126.

[2]John English, "The Operational Art: Developments in the Theories of War," in *The Operational Art: Developments in the Theories of War*, ed. Michael Hennessy and B.J.C. McKercher, 7-27 (Westport, Conn: Praeger, 1996), 20.

subsequently design and execute the military campaign to achieve political objectives. This is referred to as the "operational art". Key to the operational art is the creative process utilized by the commander to analyse critical factors and arrive at the fundamental decisions that will shape the overall campaign; this intellectual process forms the "art".[3] The commander will require great intellect, experience and wisdom to successfully achieve the desired political end state.

This experience, however, is very difficult to aquire. There are no practice attempts at war, and considering the stakes, there can be no second chances provided.[4] So how does the commander gain the critical experience and knowledge required to successfully apply the operational art? The answer is through the systematic study of military history; as stated by Vego: "study of history allows us to deduce tenets of operational warfare."[5] By conducting in-depth analysis of campaigns, the modern commander can get "into the minds" of those who came before him to derive those timeless lessons that can be applied to the modern campaign problem.

There is no shortage of historical accounts for the modern commander to examine. From the campaigns of Hannibal in Italy during the Punic Wars to the exploits of Patton in France, there is more material available for analysis than a commander has time for in a lifetime of study. When the material is looked at overall, however, there is a striking imbalance in focus; the majority of historical analysis considers offensive

---

[3]Ralph Allen, "Piercing the Veil of Operational Art," *Parameters* Vol XVI, No.4 (1986): 25

[4]John E.Turlington, "Truly Learning the Operational Art," *Parameters* (Spring 1987): 57.

[5]Vego, "Military History and the Study of Operational Art", 126.

campaigning. This can be considered an oversight, as for every aggressor, there is a defender. For all the military domination the Western nations have shown in the modern period, it is not outside the realm of the possible that the next conventional conflict will commence with a Western commander on the defensive. This provides the modern commander with questions; is the operational art applicable in the defensive context, and if so, are there unique considerations that need to be taken into account by the operational commander in order to successfully apply the operational art while on the defensive?

This paper will answer these questions in the affirmative, utilizing historical case studies involving one of history's "Great Captains" to examine how he applied the operation art. The campaigns of World War II German Field Marshal Erich Von Manstein, described as one of "the exemplars of operational art,"[6] will be examined to demonstrate how the operational art was applied successfully in *both* offensive and defensive campaigns. His offensive and defensive campaigns will be examined to extract the operational lessons that can shape what the modern commander needs to consider when designing a modern defensive campaign in the current geopolitical context.

Chapter one will examine the origins and historical development of the operational art in order to gain an understanding of its theoretical underpinnings, as well as to distill the key elements of modern operational art theory that need to be considered by the operational commander in designing and executing a campaign. This examination will consider the contributions made in 19th century Prussia, the early 20th century Soviet Union, and will conclude with the additions made by the United States Army in the late

---

[6]Richard M. Swain, "Filling the Void: The Operational Art and the U.S. Army," in *The Operational Art: Developments in the Theories of War,* ed. Michael A. Hennessy and B.J.C. McKercher, 147-172 (Westport, Conn: Praeger, 1996), 164.

20th century. This chapter concludes with a synopsis of the modern operational art criteria that will be utilized as the basis for the examination of offensive and defensive campaigns in subsequent chapters.

Chapter two will examine the German invasion of France in May 1940, which will be compared with the modern criteria of operational art as outlined in chapter one. This chapter will outline the circumstances facing Germany at the outbreak of its invasion of France, and Adolph Hitler's strategic goals. Relevant factors and subsequent campaign planning conducted by Manstein and the German Army High Command (OKH) to achieve the strategic goals they were assigned will be examined. This chapter concludes with an overall comparison of the campaign with the modern operational art criteria developed in chapter one.

Chapter three will demonstrate that operational art is applicable in a defensive context, and draw out the key considerations that need to be taken into account by the operational commander when designing and executing a defensive campaign. The case study that will be used is Manstein's "Backhand Blow" at Kharkov on the Eastern Front in the winter of 1943. This chapter will outline the events that took place between the surrender of France and the German operations in the eastern theatre up to Stalingrad in order to provide the context for Manstein's campaign. The German and Soviet military situations will be outlined, followed by the direction provided by Hitler. Manstein's use of operational art in his defensive campaign will then be described, comparing the campaign to the operational art criteria. The chapter will conclude with a summary of key lessons regarding the utilization of the operational art in a defensive context.

Chapter four will examine defensive operational art in a modern context. This creates challenges from a case study perspective, as the Cold War did not devolve into World War III, leaving no modern operational-level defensive campaigns by the major powers to examine. In order to alleviate this challenge, the major Cold War defensive doctrine of the North Atlantic Treaty Organisation (NATO), that of "Forward Defense", will be analysed utilising the operational art criteria, and lessons drawn from the "Backhand Blow" case study. This chapter will outline the context which created Forward Defense and its principles, and how this doctrine matched operational art theory. The effect on defensive campaigns of nuclear weapons and other modern circumstances will be examined. This chapter will conclude with the key factors that a commander must consider in a defensive context in order to apply the operational art.

These examinations will show that the tenets of the operational art are just as applicable on the defensive as they are on the offensive. The defensive campaign, however, contains unique challenges that the operational commander must consider. The commander conducting the defensive campaign must consider the space, forces, and time available for campaign execution, all of which will drive the type of defensive operations that the friendly force will undertake.

2. DEVELOPMENT OF THE OPERATIONAL ART

"Operational art is the body of knowledge, timeless principles, and qualities military commanders [and staffs] apply at the operational level of war that translate strategic objectives into planned campaigns and major operations, and can deliver success in a theatre of operations."

-Dr. Chris Madsen[7]

"One of the key prerequisites for applying operation art is full knowledge and understanding of its theory, and theory cannot be properly developed without mastery of military history."

-Milan Vego[8]

An examination of the origins and historical development of operational art is necessary in order to gain a greater understanding of its application. The components of operational art theory have evolved over nearly 200 years with multiple great powers each contributing a portion. Critical military failures by these great powers resulted in a re-examination of their tactics, doctrine, and operations leading to a fundamental reconsideration on how to make war.[9] Operational art was also developed to manage challenges these powers were facing that could no longer be addressed with the theory and doctrine of the day. Operational art developed incrementally, with each contributor taking elements from the previous contributor and adding their own enhancements. Today, operational art is comprised of elements that were developed in 19th century

---

[7]Dr Chris Madsen, "Emergence of Operational Art" (lecture, Canadian Forces College, Toronto, ON, December 12, 2011), with permission. There are multiple definitions of operational art; for the purposes of this paper, the definition provided will be the only one used.

[8]Vego, "Military History and the Study of Operational Art", 124.

[9]M. Hennessy and B. McKercher, "Introduction," in *The Operational Art: Developments in the Theories of War,* ed. Michael A. Hennessy and B.J.C. McKercher, 1-5 (Westport, Conn: Praeger, 1996), 3.

Prussia, enhanced in the early 20th century Soviet Union, and updated in the late 20th century United States.

The examination of the modern development of operational art begins in 19th century Prussia.[10] Prussia is accredited with the first use of the term "operational," and the influences of Prussia/Germany on modern doctrine are profound. The Soviets coined the term "operational art" in the early 20th century, and added to the base of its theory. The reason operational art has gained such prominence in the West is due to the efforts made by the United States Army in the late 20th century. This chapter concludes with a synopsis of modern operational criteria. It is this synopsis of the modern concept of operational art that will be utilized as the basis for the examination of operational art in the offensive and defensive in later chapters.

The modern development of operational art began in Prussia. Prussia's crushing defeat in 1806 at the hands of Napoleon Bonaparte's French Army at the battle of Jena subjected Prussia to French rule, and led to a movement to reform the way Prussia waged war. The Napoleonic wars also revealed a deficiency in the manner in which war was planned and controlled. The increase in scale and scope associated with the fielding of mass armies had demonstrated the limits of what a leader on horseback on a hill could command and control.[11] A key figure in the development of modern concepts of warfare served at Jena; Carl von Clausewitz, who later assisted in Prussian reform efforts and was highly influential as the director of the *Kriegsakademie* from 1818 – 1830. Clausewitz

---

[10]It could be argued that the operational art began with Napoleon, however for the purposes of this paper it will be the Prussians that will be studied first as operational art origins are more widely associated with Clausewitz.

[11]John English, "The Operational Art…", 8.

described increments from strategy to tactics in his writings, and much of what he termed strategy would today be perceived as the operational level of war.

Clausewitz laid down the theoretical foundation of operational art. He described the fundamental reasons for the conduct of war itself; it must serve to advance strategic purposes. From *On War*: "War is not merely an act of policy but a true political instrument, a continuation of political intercourse, carried on with other means."[12] Clausewitz also described the linkage between strategy and tactics in his writings, a linkage which until this point had not been established. Although he used the term "strategy" in his statement "strategy is the use of the engagement for the purpose of the war," what he terms strategy in this statement more aptly describes operational level warfare.[13] The "purpose of the war" is strategic, and "engagements" are tactical, therefore the linkage between the two was established. In terms of the role of the theatre commander, Clausewitz stated that his function was to "define an aim for the entire operational side of the war that will be in accordance with its purpose."[14] This statement is resonant today, and would be familiar to those familiar with operational level campaign planning.

Clausewitz defined the term "center of gravity," which remains one of the most fundamental concepts nested in modern warfare theory. He described center of gravity as

---

[12]Carl von Clausewitz, *On War,* ed. and trans. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1984), 87.

[13]Bradley J. Meyer, "The Operational Art: The Elder Moltke's Campaign Plan for the Franco-Prussian War," in *The Operational Art: Developments in the Theories of War*, ed. Michael Hennessy and B.J.C. McKercher, 29-50 (Westport, Conn: Praeger, 1996), 45.

[14]Clausewitz, *On War,* 177.

where the mass of the enemy is concentrated most densely, and therefore, where the heaviest blow must be struck, "the hub of all power and movement, on which everything depends. That is the point against which all our energies should be directed."[15] Finally, at the *Kriegsacademie,* Clausewitz instituted the methodology of instruction that produced the General Staff that was able to plan and execute successful campaigns for over 100 years. The disciplined study of campaigns and looking at the thought processes of Great Captains was deemed the most effective method of teaching future commanders at the *Kriegsacademie*.[16] The methodology was praised by an English military critic: "At every stage the writer places himself in turn in the position of the commander of each side…undoubtedly the true method of teaching the general's art."[17]

One of the officers that received the benefits of this instruction was the next to further contribute to the theory of operational art; Helmuth von Moltke, Chief of the Prussian General Staff from 1857 – 1888, a period in which he led the Prussians to victory during the Austro-Prussian war of 1866 and during the Franco-Prussian war of 1870-1871. Moltke was the first to frequently use the term "operational," and much of what he wrote on strategy was describing what today would be considered components of

---

[15]Ibid., 596.

[16]Historians such as Dr. Angelo Caravaggio at the Canadian Forces College argue that operational art has been practiced throughout history by the Great Captains. From Dr Angelo N. Caravaggio, "The Historical Evolution of Operational Art and Operational Command," (lecture, Canadian Forces College, Toronto, ON, November 16, 2011). For the focus for the purposes of this paper will be on the development of modern operational art theory.

[17]Quoted in Jay Luuvas, "Thinking at the Operational Level," *Parameters* Vol XVI, No 1 (1986): 5.

modern operational art.[18] For example, Moltke's statement that "the arrangement of separated marches with a view toward a timely concentration is the essence of strategy" more aptly describes what today would be operational art.[19] His development of the control techniques over these "separate marches" of numbers of large troops arose out of necessity – the size of the army that Moltke led into France had overwhelmed the span of control of Napoleon earlier in the century.[20]

Moltke recognized that the time of the single decisive battle was past, and that the time of the campaign had arrived; a series of multiple engagements would now define the course of a war. Moltke based his thinking on clearly defining an objective for his campaign, and then selecting intermediate goals which would direct the operations to meet the objective. In the Prussian (and later German) case, the campaign plan had to be as efficient as possible considering Prussia would nearly always fight outnumbered because of its geographic location, and on multiple fronts simultaneously. As a former student of Clausewitz, Moltke kept the primacy of meeting strategic aims fully in view when deriving campaign goals. From Bradley Meyer's description of Moltke's planning for the Franco-Prussian War:

> The most critical decision to be made in planning any campaign is the selection of its goal. If it does not achieve the political objective for which

---

[18]English, "The Operational Art…", 9.

[19]Graf Helmuth Karl Bernhad von Moltke, "Aufsatz vom 16. September 1865 'Ueber Marschtiefen,'" *Taktisch-strategische Aufsaetze*, 237, quoted in Meyer, "The Operational Art: The Elder Moltke's Campaign Plan…", 45.

[20]Meyer, "The Operational Art: The Elder Moltke's Campaign Plan…", 33.

> the war is being fought, or at least contribute toward that end, then the campaign will be a waste of effort.[21]

Moltke used these campaign objectives and operational goals to lay out the framework for the engagements that led to the defeat the Austrians and French, and his essay *Ueber Strategy*, which separately defined strategy, operations and tactics, gained world-wide influence due to the perception of his mastery of war. His influence led the industrialized nations, for example, to adopt the Prussian staff system that allowed Moltke to so effectively control the formations that waged his campaigns into their own armies.[22] Moltke spent the rest of his career developing officers that could conduct this type of campaign planning and execution, using Clausewitz's pedagogical methods. Moltke left the Prussian military with the concepts of a campaign, the operational level, the general staff, and the reliance on bold operational maneuver to defeat enemies that outnumbered them on multiple fronts.[23]

The influences of Clausewitz and Moltke helped to shape German thinking in World War I and the interwar period – seeking battles of envelopment utilizing maneuver to flank numerically superior enemies. During this time, the Germans considered the fundamental principles used to bring about the success of a campaign once its actual goal had been established. The use of deception, surprise, mobility, and concentration of force behind a main effort to attack centers of gravity, became the hallmarks of the Wehrmacht

---

[21]Ibid., 30.

[22]Luuvas, "Thinking at the Operational Level", 5.

[23]Robert Forczyk, *Erich von Manstein: Leadership, Strategy, Conflict* (Oxford: Osprey Publishing, 2010), 4.

heading into the Second World War.[24] The application of these principles to campaign success, a component of operational art, will be described in detail in subsequent chapters.

During the interwar period, the Soviets were also moving the theory of operational art forward; John English states that the Soviet "intellectual underpinnings of their military thought at this level" may have been superior to even the Germans.[25] In the same manner as the Prussians, the Soviets felt the impetus to reform their military doctrine as a result of major defeats at the hands of the Japanese in the Russo-Japanese War of 1904-05, and to the Poles in 1920. Russian commanders had difficulties controlling their 300,000 troops in Manchuria, and they could not entice the Japanese to engage in the single set-piece battle they desired. Instead, the Japanese set the engagement pace, avoiding battle when desired and pre-empting and forcing the Russians to flee at times. Instead of the decisive battle, it became evident upon later reflection that what was required was a method of conducting operations in a theatre according to a unified overall plan.[26] The disastrous invasion of Poland in 1920, during which Polish forces destroyed major Soviet formations in the "Miracle of Warsaw," was also a major spur to Soviet theorists to refine their war-making apparatus.[27] For a country in the grip

---

[24]Dennis E Showalter, "Prussian-German Operational Art, 1740-1943," in *The Evolution of Operational Art*, ed. John Andreas Olsen and Martin Van Crevald, 35-63 (Oxford: Oxford University Press, 2011), 49.

[25]English, "The Operational Art…", 13.

[26]Jacob Kipp, "Two Views of Warsaw: The Russian Civil War and Soviet Operational Art, 1920-1932," in *The Operational Art: Developments in the Theories of War,* ed. Michael A. Hennessy and B.J.C. McKercher, 51-86 (Westport, Conn: Praeger, 1996), 65.

[27]Ibid., 57.

of Bolshevism and all the repression that this entailed, Soviet military thought in the 1920's generated a surprisingly fierce intellectual debate amongst its military theorists that pushed the theory of operational art forward.

It was the officers of the Red Army that formed the center of this debate. Soviet theorists such as Boris Shaposhnikov, Mikhail Tukhachevsky and Alexander Svechin wrote, debated, and taught the Red Army officer corps during this period of intellectual production. The failures of Manchuria and Warsaw needed to be addressed, and the rectification commenced by looking back to the nation that had already addressed issues concerning the conduct of a campaign. It was to the Prussians that the Soviets looked for inspiration. Chief of the Operations Directorate of the Field Staff, Boris Shaposhnikov, drew directly from *On War* to address faulty campaign planning in Warsaw.[28] Chief of the All Russian Main Staff prior to his assumption of teaching duties, Alexander Svechin expanded on the concept and is accredited with the first use of the term "operational art" in 1923 in a series of lectures at the military academy. From Jacob Kipp:

> [Svechin] described operational art as the bridge between tactics and strategy, i.e. the means by which the senior commander transformed a series of tactical successes into operational 'bounds' linked together by the commander's intent and plan and contributing to strategic success in a given theatre of military actions.[29]

With this statement, the link between strategy and tactics, the operational level of war alluded to by the Prussians, was now formalized. In order to work through the mechanics of how to best conduct these operational "bounds", the Soviets conducted

---

[28]Ibid., 60.

[29]Ibid., 61.

experiments in the 1930's, mainly under Mikhail Tukhachevsky, who had commanded the Red Army at Warsaw. The Soviets examined the use of mechanization to improve force mobility that evolved the World War I linear strategy into "deep strategy" – bringing about the defeat of an opponent through the depth of its deployments, and then using "successive operations" with multiple echelons to bring about overall operational victory.[30] The Soviet debates, mainly between Tukhachevsky and Svechin, also revealed alternate methods of attacking centers of gravity. While Tuckhachevsky was an adherent to "annihilation" strategy, "whereby modern forces equipped with modern weaponry could crush an enemy and quickly achieve strategic ends," Svechin espoused attrition.[31]

Unfortunately for the Soviets, the Stalinist purges of 1937-38 buried their operational art theory and erased its creators, following their executions, as "nonpersons". The Red Army suffered greatly at the hands of the Germans after the 1941 Wehrmacht invasion until the junior officers taught by Svechin had risen to ranks where they could apply his theories. By 1943, the Soviets had mastered an operational capability that forced the Germans onto the defensive, and on a grand scale. Operation Bagration, launched by the Red Army in 1944, eliminated 28 German divisions in three encirclements over 600 kilometers.[32]

---

[30]Ibid., 79.

[31]David M. Glantz, "The Intellectual Dimension of Soviet (Russian) Operational Art" in *The Operational Art: Developments in the Theories of War,* ed. Michael Hennessy and B.J.C. McKercher, 125-146. (Westport, Conn: Praeger, 1996), 128. In the strategy of annihilation, an adversary was rapidly crushed to quickly achieve strategic objectives. Svechin's attrition theory stressed the idea of successive operations with limited goals to achieve strategic results.

[32]English, "The Operational Art…", 14.

Although the German and Russian contributions to modern operational art theory make for interesting history, it is the formal adoption of operational art in the United States in the late 20th century that has led to its spread into the doctrine of western militaries today. Just as the Prussian loss at Jena and the Russian losses in Manchuria and Warsaw led to critical self-examination of the way in which they conducted warfare, the United States after Vietnam entered into a period of introspection and theoretical debate. The Vietnam War, a conflict in which the majority of battles were won but the war lost, left the impression that the objectives espoused at the strategic and theatre levels of war were incongruent. This situation is best summarized in the famous conversation between American Colonel Harry Summers and a North Vietnamese colonel in 1975, in which Colonel Summers stated "you never defeated us on the battlefield," to which the North Vietnamese Colonel replied, "That may be so, but it is also irrelevant."[33]

The United States, a country that had continuously improved the methods by which it fought and won battles, assumed that winning battles would lead to winning wars.[34] Yet in Vietnam, Washington had no clearly defined political objectives, and as a result, theatre-level decisions were made in a "strategic vacuum."[35] The United States

---

[33]Harry G. Summers Jr., *On Strategy, A Critical Analysis of the Vietnam War* (Novato, Calif.: Presidio Press, 1982): 1, quoted in Jeffry Record, "Operational Brilliance, Strategic Incompetence: The Military Reformers and the German Model," *Parameters* Vol XVI, No.3 (1986): 5.

[34]Antulio J. Echevarria II, "American Operational Art, 1917-2008," in *The Evolution of Operational Art*, ed. John Andreas Olsen and Martin Van Crevald, 137-165 (Oxford: Oxford University Press, 2011), 159.

[35]David Jablonsky, "Strategy and the Operational Level of War: Part I," *Parameters* Spring (1987): 67.

Army came to the realization that the tactical performance of troops may not matter if strategy and campaign plans proved faulty.[36]

At the same time, the United States, as the lead NATO nation, was contemplating the massive numerical superiority held by the Cold-War Soviet Armies in the European theatre. Both the Vietnam War and the Soviet challenge led American theorists to search for the best possible methodology on which to base new doctrine.[37] The problems of matching military campaigns to strategic goals, and overcoming numerical superiority, had been examined before, and the "collective answer seemed to be found in the adoption of operational art, defined in Clausewitzian terms."[38] United States theorists also borrowed from the Soviets themselves. In examining Soviet doctrine to learn how to counter their enemies, American planners discovered the riches of the Soviet operational art theory that had been developed before Stalin purged Svechin and Tukhachevsky.[39]

The major figure responsible for putting the doctrine examination in motion was General William E. Depuy, a World War II and Vietnam veteran that the U.S. Army entrusted with the creation of their Training and Doctrine Command (TRADOC) in 1973. Depuy admired the skill of the World War II German Army, and insisted on the study of the Soviet enemy while heading TRADOC.[40] The TRADOC publication of the capstone

---

[36]English, "The Operational Art…", 16. Of note, the Germans also experienced this in the Soviet Union during World War II.

[37]Ibid., 16.

[38]Swain, "Filling the Void: The Operational Art and the U.S. Army", 148.

[39]Kipp, "Two Views of Warsaw…", 51.

[40]Swain, "Filling the Void: The Operational Art and the U.S. Army", 149.

1976 Field Manual 100-5 *Operations* (FM 100-5), "the foundation for what is taught in our service schools, and the guide for training and combat developments throughout the Army,"[41] provoked a period of fierce intellectual debate in U.S. military and academic circles, which resulted in the revised 1982 FM 100-5. This updated revision of *Operations* introduced the concept of AirLand battle, and the terms "operational level of war" and "campaigns."[42]

To move the study of operational art forward even further, the School of Advanced Military Studies (SAMS) accepted its first students in 1983 at the Command and General Staff College, and key members of the School were tasked with yet another revision of FM 100-5. They were influenced primarily by classical study, primarily of Prussian and Soviet doctrine. They were also influenced by modern, usually armoured campaigns - the majority conducted by the Germans. The SAMS officers produced the Western concept of operational art that still largely stands today.[43] In the 1986 *Operations*, operational art was defined, campaigns emphasized, and Soviet concepts such as synchronization of firepower and manoeuvre throughout the depth of the battlefield, as well as attacking an opponent's formations in one integrated battle were now defined.[44] Germans would recognize the emphasis on deception, surprise, manoeuvre, and mastery over time and space. Although critics of the theory of

---

[41]United States, Headquarters, Department of the Army, *FM 100-5: Operations* (Washington, DC: Headquarters, Dept. of the Army, 1976), i.

[42]Swain, "Filling the Void: The Operational Art and the U.S. Army", 160.

[43]Ibid., 164.

[44]Echevarria II, "American Operational Art, 1917-2008", 155.

operational art postulated that nuclear weapons would render such concepts irrelevant, Operation Desert Storm validated the operational art concept. A small, mobile, well-led army convincingly defeated a large, mobile, but less well-led army – even accounting for the fact that the Iraqi army was second-rate, the operational art was deftly applied by the coalition.[45] Operational art theory has been accepted and implemented to the point where most Western armies, including British and Canadian, now recognize the operational level of war.[46]

The development of operational art has evolved over time since the introduction of its fundamental concepts by Clausewitz. From Clausewitz onwards, all contributors have reinforced the notion that operational art starts with direction from the strategic level, which outlines the very purposes for war, and how elements of national power will be used to secure national objectives. Clausewitz's statement holds true today: "No one starts a war…without first being clear in his mind what he intends to achieve by that war and how he intends to conduct it. The former is its political purpose; the latter its operational objective."[47] The purposes for war will be formalized and strategic guidance will be passed to the theatre commander as a set of strategic objectives.[48] The guidance should contain limitations on the theatre commanders' freedom of action that must be noted in the form of constraints and restraints. These could be political restraints on

---

[45]Ibid., 156.

[46]English, "The Operational Art…", 19.

[47]Clausewitz, *On War,* 579.

[48]Allen, "Piercing the Veil of Operational Art", 24.

certain attractive military courses of action, such as no use of nuclear weapons. There could also be resource limitations stipulated, such as number of forces or logistics available.[49] The overall strategy must be politically acceptable and both appropriate and achievable for the nation to achieve success in the conflict it has begun.

Once the strategic direction is received, the operation art is applied. Although there is no fixed echelon solely concerned with operational art, it is generally considered to be the domain of the theatre commander, who takes the strategic guidance and creates the military campaign to achieve the strategic end-state.[50] The design of the campaigns and major operations are in the purview of the theatre commander; campaigns being defined as "a series of actions designed to attain a strategic objective in a theatre of war", and major operations being defined as the "coordinated actions of large forces in a single phase of a campaign."[51] Operational art has been described as the link between strategy and tactics, with tactics formally described as "the art by which corps and smaller unit commanders translate potential combat power in victorious battles…more likely to decide phases of campaigns."[52]

Although multiple definitions exist across western militaries and NATO, a fitting definition of operational art that encompasses strategy, campaign planning, and the

---

[49]Jablonsky, "Strategy and the Operational Level of War: Part I," 18.

[50]Department of National Defense, B-GJ-005-500/FP-000 *The Canadian Forces Operational Planning Process (OPP)* (Ottawa: DND Canada, 2008), 1-4.

[51]United States, Department of the Army, *FM 100-5: Operations* (1986), 10.

[52]Ibid., 11.

principles applied to achieve campaign success once the objective has been defined is encompassed in the following:

> The body of knowledge, timeless principles, and qualities military commanders [and staffs] apply at the operational level of war that translate strategic objectives into planned campaigns and major operations, and can deliver success in a theatre of operations.[53]

To commence campaign planning, it is necessary to look back to Clausewitz once more. The "essence of operational art," and the first step in planning the campaign, is the identification of the enemy's operational centre of gravity, the defeat of which fulfills strategic objectives and therefore meets the strategic end-state.[54] At the operational level, these are almost invariably specific military forces, as opposed to at the strategic level, where centres of gravity are usually defined as *moral* – coalition or national political will.[55] Centres of gravity are neutralized by successfully attacking what are known as critical vulnerabilities, "those critical requirements, or components that are deficient, or vulnerable to neutralization or defeat."[56]

The identification of the operational level centre of gravity and corresponding critical vulnerability is the first step to fulfill the application of operational art. The second key step is to then arrive at the campaign objectives, with corresponding decisive

---

[53]Madsen, "Emergence of Operational Art".

[54]United States, Department of the Army, *FM 100-5: Operations* (1986),10.

[55] Joe Strange, "Understanding Centers of Gravity and Critical Vulnerabilities. Part 2: The CG-CC-CR-CV Construct: A Useful Tool to Understand and Analyzed the Relationship between Centers of Gravity and their Critical Vulnerabilities." http://www.au.af.mil/au/awc/awcgate/usmc/cog2.pdf; Internet; accessed 14 Dec 2011, 7.

[56]Ibid., 8.

points, which must correspond with the defeat of the operational centre of gravity.[57] The defeat of the enemy centre of gravity is the key component of the operational end-state, or condition that must exist for the campaign to be considered complete. Of critical importance is that the operational level centre of gravity identified, and the campaign objectives, must relate back to the strategic end-state received.

With the centre of gravity and campaign objectives identified, the operation artist and his staff can now design the campaign in detail. A well-defined centre of gravity and campaign objectives are unlikely to contribute to overall victory unless the "timeless principles" described in the operational art definition are adhered to. Historically, campaigns are most likely to be successful when several key principles are applied. First of all, creating uncertainty in the enemy through the use of deception, thus achieving surprise, will greatly enhance the likelihood of campaign success. Next, rapid movement on an unexpected axis will often allow an enemy vulnerability to be exploited by avoiding their strength. Historically, those forces that have attacked strength head-on have been less successful: "none of the victorious commanders in history threw their forces into battle head to head with their opponent."[58] Both deception and movement on an unexpected axis may allow the proficient operational artist to create advantageous conditions for major operations by achieving favorable positioning of friendly forces relative to the enemy – the third success principle, commonly referred to as the use of

---

[57]Decisive points are critical events that pave the way to the end-state. Department of National Defense, B-GJ-005-500/FP-000 *The Canadian Forces Operational Planning Process (OPP)*…1-4.

[58]John Boyd, "Patterns of Conflict," presentation, 1986. Provided by Dr Angelo N. Caravaggio, 1 February 2012.

manoeuvre. Finally, to achieve successful deception, unexpected approach, and manoeuvre, the operational artist must understand the effects of time and space, which at its core defines the relative movement rates of friendly and enemy forces.[59] The criteria described above are summarized in Table 2.1.

Table 2.1 – Criteria Comprising Application of the Operational Art

Number	Operational Art Criteria
1	Identify the operational level centre of gravity and corresponding critical vulnerability.
2	Identify the campaign goal that will defeat the identified centre of gravity and thus fulfill assigned strategic goals.
3	Create uncertainty in the enemy through the use of deception.
4	Attack the enemy vulnerability by moving on unexpected axis.
5	Create advantageous conditions for battle through favorable positioning of friendly forces relative to the enemy.
6	Understand relative movement rates over time and space.

It is Table 2.1 that will be used to analyze the Wehrmacht campaigns in subsequent chapters, and thus forms the core of the analysis of offensive and defensive operational art. The greatest advances to the theory of operational art were achieved during a period of reflection following a failure. The Prussians after Jena, the Russians after Manchuria and Warsaw, and the United States after Vietnam were the greatest contributors to the basis of operational art theory. Operational art developed to address specific needs, mainly the Prussian requirement to control massive armies to fight outnumbered and win, the Soviet requirement to control their mass revolutionary army and harness motorization, and the American requirement to defeat a vastly superior foe in Europe. Each contributor added something to the theory. The Prussians emphasis on

[59] Madsen, "Emergence of Operational Art."

achieving political goals, defining the campaign and centers of gravity were studied by the Soviets, who formally defined operational art and applied it to their particular circumstances, adding mass and striking deep into an enemy's depth. It was the United States that studied both the Germans and the Soviets, adding their own ideas and creating what is now the modern concept of operational art. The concepts of the operational art have been traditionally focused on the offensive – the campaign design going to the force with the initiative. Subsequent chapters will explore whether the concept of operational art can be applied when a force is on the defensive and if so, how does the implementation of the elements of operational art have to change in order to guarantee success.

3. OPERATIONAL ART IN THE OFFENSIVE

"Except for the careers of a handful of the great captains of history, there is nothing in history…to match the size, scope, or completeness of the early German victories [in World War II]."

-T.N. Dupuy[60]

A modern, mechanised offensive campaign will now be compared with the modern criteria of operational art as outlined in Chapter 1 in order to demonstrate the methodology that will be used to examine the defensive context in subsequent chapters. Although there are a multitude of campaigns to choose from in the modern era, the rapid German defeat of France in 1940 provides a highly relevant case study of successful operational art applied in the offensive. Although the entire German Army High Command (OKH) played a role in the development and execution of the plan, this chapter will focus mainly on the contributions of Field Marshal Erich Von Manstein, studied extensively at SAMS during its nascent days as one of "the exemplars of operational art."[61]

This chapter will begin by outlining the circumstances facing Germany at the outbreak of its invasion of France, and Adolph Hitler's strategic objectives. This chapter will also describe the relevant factors and subsequent campaign planning conducted by Manstein and the OKH to achieve the strategic objectives they were assigned. The

---

[60]T.N. Dupuy, *A Genius for War: The German Army and General Staff, 1807-1845*, (Macdonald and Janes: London, 1977), 253.

[61]Swain, "Filling the Void: The Operational Art and the U.S. Army", 164.

operational art timeless principles applied to the campaign will then be outlined, and an overall comparison of the campaign with modern operational art criteria conducted.

Germany was in a precarious strategic situation prior to its invasion of France, as Hitler's plans to conquer Europe and Russia had pushed Germany down an inexorable road to war.[62] Germany's 1935 renunciation of the disarmament clauses of the Versailles Treaty, the 1936 re-occupation of the Rhineland, the 1938 occupation of Austria, and the 1939 invasion of Czechoslovakia had all occurred without outside interference. Allied appeasement, however, had reached its limit prior to the German invasion of Poland, when both Britain and France pledged their support should Germany invade.[63] Although the German victory over Poland in September 1939 was astonishing, the guarantee of both Britain and France to support Poland in case of invasion was invoked; Hitler was now was in open conflict with his Western neighbours, and held a tenuous truce with the Soviet Union in the East.[64]

Hitler was at a disadvantage. Germany could not win a drawn-out conflict with Britain and France, who possessed both resource and maritime advantages over the Reich. A long war would also exhaust Germany and leave it vulnerable to attack by Russia.[65] Hitler therefore needed a rapid offensive against France that would both

---

[62]Gordon Craig, "The Political Leader as Strategist," in *Makers of Modern Strategy from Machiavelli to the Nuclear Age*, ed. Peter Paret, 481-509 (Princeton: Princeton University Press,1986), 493.

[63]Dupuy, *A Genius for War*…, 245.

[64]Ibid., 257. The German army of 1.25 million men defeated the Polish army of 800,000 in only two weeks.

[65]B.H. Liddell Hart, *The Other Side of the Hill: Germany's Generals, Their Rise and Fall, With their own Account of Military Events 1939-1945*, (Cassell and Company Ltd: London, 1951), 141.

eliminate the French threat and hopefully bring Britain to peace terms; from Hitler: "It looks like we will eventually end up making an offer to the British to get off cheaply by leaving the continent to us for good."[66] With France defeated and Britain neutralized, Hitler would then be able to turn east to deal with the Soviet Union in the solitary front situation that eluded Germany in World War I.

At the conclusion of the Polish campaign in September 1939, the executive heads of the army were told to prepare plans for the invasion of France. The OKH analysed the factors. First, they were at a numerical disadvantage. While the combined Allied strength of France, Britain, Holland and Belgium consisted of 164 divisions, 14,000 artillery pieces, and 3,600 tanks, German strength was only 136 divisions, 7,400 artillery pieces, and 2,550 tanks.[67] It would be near impossible for Germany to invade France directly due to the presence of the formidable Maginot line that defended the French border. To invade through Belgium or Holland would pit the Wehrmacht not only against the Belgian or Dutch armies, but also against the most modernly equipped and mobile portion of the Allied forces; the 1st, 7th, and 9th French Armies, and the British Expeditionary Force (BEF), who would manoeuvre to confront head-on the German attacking force.[68]

---

[66]Gunter Roth. "The Campaign Plan 'Case Yellow' for the German Offensive in the West in 1940," in *Operational thinking in Clausewitz, Moltke, Schlieffen and Manstein*, ed. Roland G. Foerster, 41-56 (Bonn: Verlag E.S. Mittler & Sohn, 1989), 42.

[67]Dupuy, *A Genius for War*…, 267. Note that these numbers are approximate in magnitude and multiple references will provide multiple figures. See Gilbert Sheppard, *France 1940: Blitzkrieg in the West* (London: Osprey, 1990), for detailed orders of battle.

[68]Liddell Hart, *The Other Side of the Hill…,* 159.

It was these Franco-British manoeuvre armies that formed the operational centre of gravity of the Allies.[69] Once these forces were committed, the French High Command would lose most of its maneuvering power, and the defeat of these armies would allow the Wehrmacht to then easily destroy the fixed Maginot line forces and weak French reserves. In order to adhere to Hitler's time constraints, the OKH conceived of a "powerful straight right" through Belgium that would hit the Allied manoeuvre armies before they could achieve firm defensive positions; the anticipated victory in the subsequent meeting engagement would allow the Wehrmacht to reach the Channel coast.[70]

It was at this point that Manstein entered the picture. Born into Prussian military tradition in 1887 as the son of a Prussian general, Manstein attended the Cadet School and Royal Military Academy, and won the Iron Cross in World War I while serving as an Infantry Officer with 3 Guards Regiment.[71] Between wars he held a variety of command and staff positions, including heading the operations branch of the revived General staff; throughout, his brilliance was always on display.[72] Manstein was the Chief of Staff in Field Marshal von Rundstedt's Army Group South during the invasion of Poland, and it

---

[69]Strange, "Understanding Centers of Gravity and Critical Vulnerabilities. Part 2...", 2.

[70]Roth. "The Campaign Plan 'Case Yellow'…", 44.

[71]Robert Forczyk, *Erich von Manstein: Leadership, Strategy, Conflict* (Oxford: Osprey Publishing, 2010), 5.

[72]As a division commander participating in corps war games, Manstein was invariably named army commander. War game directors would create the "staff college solution", and younger staff offers would lay bets whether Manstein would once again produce the "staff college solution" – and those who lay their bets always won. From F.W. von Mellenthin, *German Generals of World War II: As I Saw Them* (Norman: University of Oklahoma Press, 1977), 24.

was through Manstein's position as Chief of Staff in the renamed Army Group A that he was able to influence the German invasion plans for France.

While Field Marshal von Bock's Army Group B was slated to conduct the "right hook" through Belgium, Army Group A was destined for only a small secondary role in a supporting attack between Group B and the Maginot line. Manstein didn't think that the frontal offensive by Army Group B could bring about the operational result that would achieve the strategic goal. He believed that instead of being defeated, the Allied manoeuvre armies would only be pushed back, resulting in a World War I attrition campaign. Manstein argued that enveloping the Allied centre of gravity from the flank would rapidly annihilate the enemy and thus achieve a political decision.[73] Manstein applied his creativity, insisting there was an alternative axis that the German main effort could follow that would allow them to reach the Allied flank. There was a gap between where the Allied manoeuvre armies would move to meet the German "right hook" and the Maginot line; the Ardennes region. The French had only a small force in and behind the Ardennes guarding the critical crossing point into France on the Meuse River, thus making a shift in main effort possible.[74]

Manstein had thereby identified the critical vulnerability that could be exploited to defeat the Allied centre of gravity, and created the basis of the campaign that would achieve decisive results.[75] By punching through the Meuse defenses and rapidly moving

---

[73]Roth. "The Campaign Plan 'Case Yellow'…", 48.

[74]Dupuy, *A Genius for War*…, 266.

[75]Strange, "Understanding Centers of Gravity and Critical Vulnerabilities. Part 2...", 5.

to the channel coast, the Allied manoeuvre armies would be cut off and defeated in a "sickle cut"; a classic Prussian solution of deception, surprise and manoeuvre.[76] The OKH revised the campaign plan to shift their main effort to Army Group A, who would break through the Meuse defenses and then achieve the "sickle cut."

The timeless principles of operational art were now put into practice to realize the campaign objectives. The German use of operational deception enabled the "sickle cut" to suceed. The Wehrmacht first exploited a possible disastrous situation to their advantage. In January 1940 a plane carrying the original German attack plan (with the main effort still being Army Group B) went off course due to a snow storm and crashed in Belgium, thus revealing the attack plan to the Allies. The Allies had suspected that the Germans would utilize this plan, and their confirmed suspicions emphasized Allied planning to meet this thrust on the Dyle River with their manoeuvre armies.[77] By massing Army Group B with the credible threat of 29 divisions in their original attack positions and pushing on their anticipated axis through Belgium and Holland, the deception was reinforced.

To hold the French reserves in place, Army Group C under Field Marshal von Leeb was to attack the Maginot line.[78] With the Allied manoeuvre armies drawn in and fixed by Army Group B, and Army Group C holding the French reserves in place, Army

---

[76]Forczyk, *Erich von Manstein: Leadership, Strategy, Conflict*, 13.

[77]Liddell Hart, *The Other Side of the Hill…,* 149.

[78]Sheppard, *France 1940…*, 30. Note that the Germans used a multitude of other deception measures. For example, to compensate for the paucity of parachute forces available for the invasion, multiple dummy parachute drops were conducted on D-Day. The ruse proved highly effective, with highly inflated numbers provided to allied leadership as a result of the dummy drops. See Liddell Hart, *The Other Side of the Hill…*, 163.

Group A could then go straight through the gap with their 45 divisions, led by the panzer divisions of Panzer Group Kleist (see Figure 3.1). The overall attack plan, referred to as "The Matador's Cloak" by Liddell Hart, is described by Frieser:

> Army Group B in the north represented the "Matadors cloak" that was intended to provoke the Allied expeditionary troops to rush into Belgium like a raging bull – right into the trap. Army Group A would strike the unprotected flank like a sword, the point of which was Panzer Group Kleist.[79]

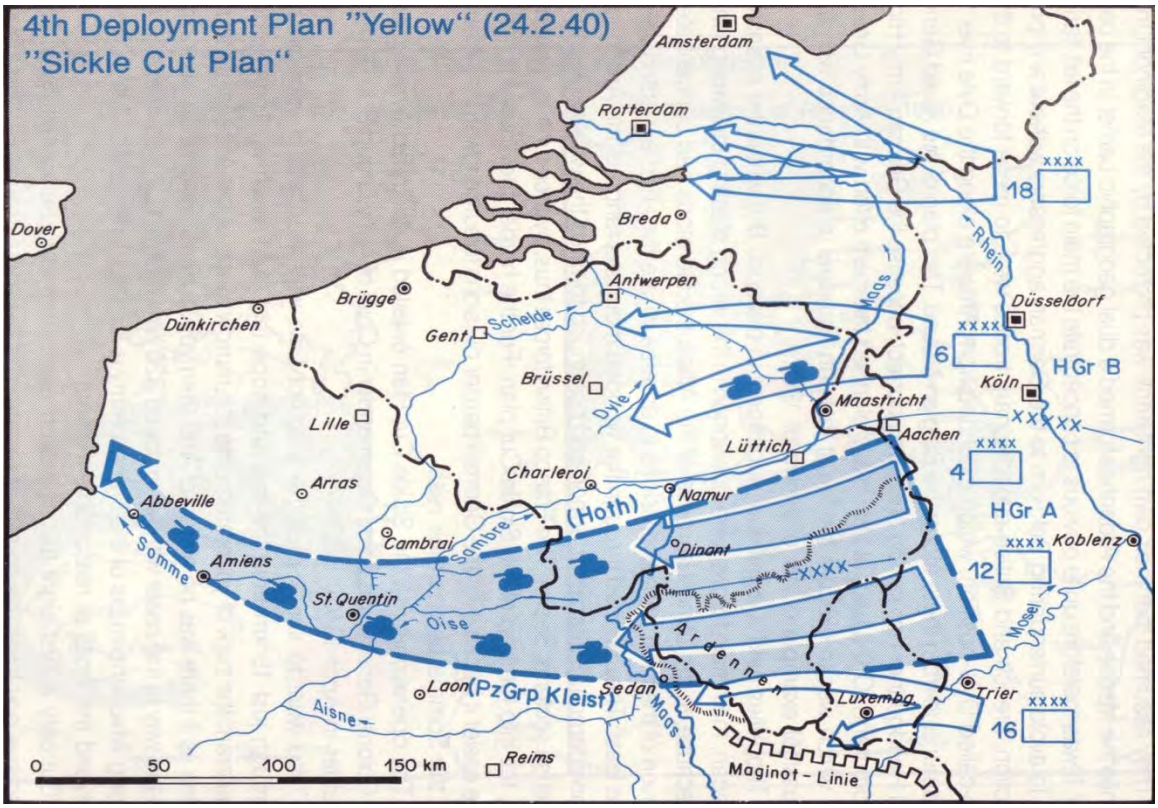

Figure 3.1 – German Plan for the 1940 Invasion of France

Source: Roth, "The Campaign Plan 'Case Yellow'…", 51.

---

[79]Karl-Heinz Frieser, "Panzer Group Kleist and the Breakthrough in France, 1940," in *Historical Perspectives of the Operational Art,* ed. Michael Krause and Cody Phillips, 169-182 (Washington: Center of Military History, 2005), 168.

The gap between the planned defensive positions of the Allied manoeuvre armies along the Dyle and the fortifications of the Maginot line should have been just as obvious to the Allies as to the Germans. However, the gap was not as obvious as it would appear; the rugged Ardennes region that spanned East Belgium and North Luxemburg was both mountainous and characterized by dense forest, and the road network that was available was both twisted and narrow. Therefore, the Allies believed the region was unsuitable for tank forces, and thus left only a weak defense on this unexpected axis.[80] Manstein thought differently, however, and had confirmed his ideas by consulting the tank expert General Heinz Guderian, who confirmed that the region could be traversed by armoured forces. The Germans therefore massed seven of their 10 panzer divisions on this unexpected approach, and the launch date of 10 May 1940 was set.

The use of deception and an unexpected axis of approach enabled the Germans to enact the next principle of operational art; the favorable positioning of friendly forces relative to the enemy. With the Allies fixated on Army Group B in the north, the weak Meuse defenses were doomed when the German main effort went through the unexpected axis of the Ardennes. The German identified breakout point at Sedan on the Meuse was entrusted to the French 2nd Army under General Charles Huntziger. Consisting of just six divisions, two of which were *Serie B*, and only two of which were light cavalry, it was this army that was to face the elite formation of Panzer Group Kleist.[81] In the major operation of breaching the Meuse, the French were overmatched. Although Figure 3.2

---

[80]Dupuy, *A Genius for War*…, 66.

[81]Sheppard, *France 1940*..., 36. Série B divisions were reserve divisions without any modern weapons, and were designated for use for second line duty (security).

appears to show an even match, consider that a panzer division held 276 tanks, while a French light cavalry division contained just 30-35 (some of which were armored cars); this map therefore is actually showing a six to one armour advantage for the Germans at this decisive point.[82]

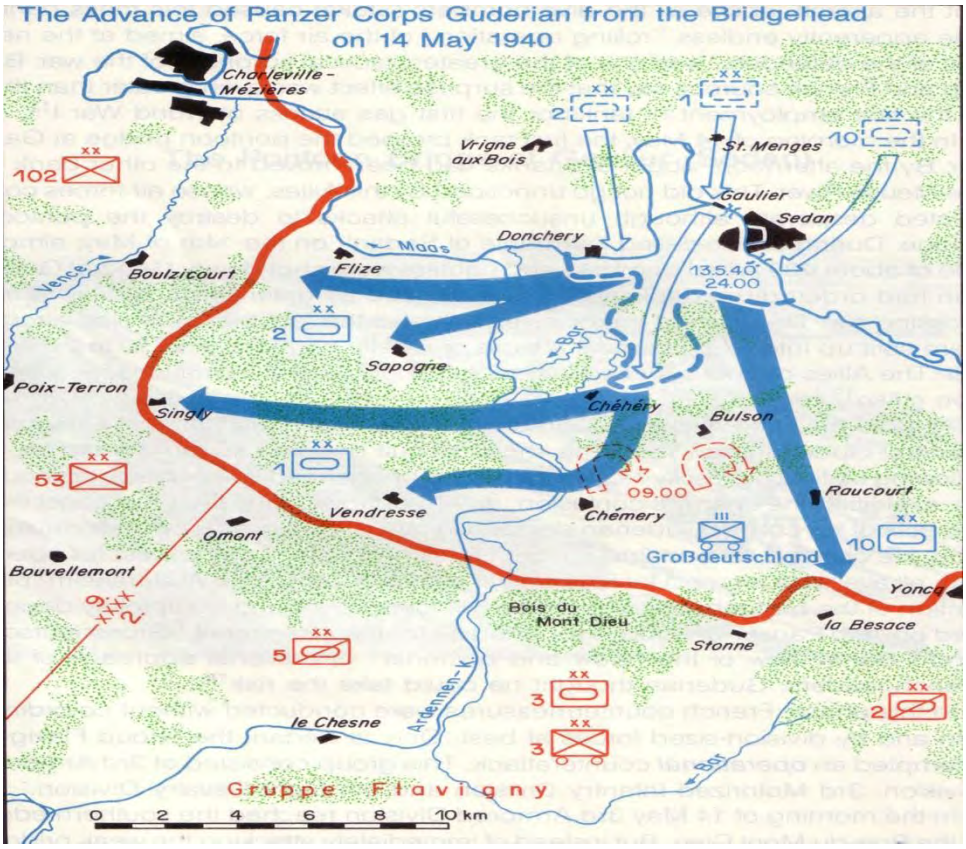

Figure 3.2 – German Breakthrough at the Meuse, May 1940

Source: Frieser, "The Execution of 'Case Yellow'…", 68.

---

[82]Ibid., 21. The reinforcing 3rd French Armoured division added to the 2nd Army tank strength. However, they held up for ten hours upon arrival at the critical point to service their tanks, then placed their tanks in 3 tank "cork" blocking positions instead of massing to fight the crossing. See Frieser, "Panzer Group Kleist and the Breakthrough in France…", 174.

What of the French artillery advantage on the Meuse? They held 350 artillery pieces compared to only 150 for the Germans, many of which were congested in the Ardennes.[83] Again the Germans pitted their strength against French weakness, and the German held a massive strength in aircraft, at 3,500 to 1,800.[84] German "Stuka" dive bombers more than compensated for the artillery disadvantage, with the "explosive force of heavy bombs literally turning batteries upside down, blinded by dust and smoke."[85] Overall, French resistance at the major operation at Sedan was "easily brushed aside" by the Germans due to their favorable force positioning.[86]

Once the breakthrough at Sedan was achieved, the Wehrmacht tanks rolled through a virtually open corridor through the ideal tank country of the rolling hills of Northern France, allowing them to rapidly reach the channel coast and thus flank the allied centre of gravity, who were held fixed by Army Group B.[87] At the operational level, favorable force positioning was therefore achieved; an envelopment from the flanks and rear. This was the genius of Manstein; the harder the Allied manoeuvre armies pushed against Army Group B, the more vulnerable the Allies were to Army Group A ; referred to by Liddell Hart as the "revolving door" manoeuvre.

The French did have counter-attack forces that could have hit the "sickle cut" in the flank, especially as the Germans were vulnerable while crossing the Meuse. It was

---

[83]Frieser, "Panzer Group Kleist and the Breakthrough in France…", 172.

[84]Sheppard, *France 1940…*, 17.

[85]Ibid., 53.

[86]Liddell Hart, *The Other Side of the Hill…,* 169.

[87]Ibid., 182.

here that that the Germans revealed the final aspect of their mastery of operational art; their superior understanding of time and space and its effects on the relative movement of friendly and enemy forces. The Germans had entered the war as the only force to have adapted its force structure to the realities of the internal combustion engine, and were thus operating under a different time scale then the Allies.[88] As well, German doctrine of dashing ahead in rapid exploitation through the use of mission tactics was designed to allow no time for an enemy to recover or shift reserves to block a gap.[89] All of this, combined with the genius of Manstein, who "had an excellent grasp of time and space considerations, vital for effective commander,"[90] resulted in the Germans outpacing the Allies.

Although the Allies had thought the Ardennes impassable, they did have credible reserves available to counter this unlikely contingency. The French, however, thought that it would take six days from the German start line in Luxemburg to reach the Meuse through the Ardennes, and several days to bridge the river and get across. Manstein and Guderian, however, assessed that the armour would arrive much quicker.[91] Instead of taking six days to reach the river and several days to cross, Panzer Group Kleist reached the river in two, and crossed on the third. From General Doumenc, Chief of Staff of French GHQ:

---

[88]Record, "Operational Brilliance, Strategic Incompetence: The Military Reformers and the German Model", 6.

[89]Dupuy, *A Genius for War*…, 257.

[90]Forczyk, *Erich von Manstein: Leadership, Strategy, Conflict*, 60.

[91]Dupuy, *A Genius for War*…, 266.

> Crediting our enemies with our own procedure, we had imagined that they would not attempt the passage of the Meuse until after they had brought up ample artillery: the five or six days necessary for that would have easily given us time to reinforce our own dispositions.[92]

When the Germans arrived, the Meuse defenses were therefore extremely weak. Although the few French machine guns firing at the armoured mass crossing exemplified French bravery, the effort was futile. The French reserves that could perhaps have thrown the Germans back across the river, arrived too late. From Liddell Hart: "in this case the conjunction of an infantry time-sense on the French side with a tank-time on the German side…produced the most startling result."[93]

As foreseen by Manstein, whose projected method of defeating French armoured counter-attacks into the flank of Army Group A was by "overrunning the deployment of every French counter-offensive,"[94] the German understanding of relative movement rates led them all the way to the channel coast. The Wehrmacht moved so fast that the few counter-attacks launched by the Allies were uncoordinated and "spasmodic"; as for the famous counter-attack of General Charles de Gaulle's 4th Armoured Division, it "did not put us in any such danger as later accounts have suggested – Guderian dealt with it himself."[95] The time and space disparity is best summed up by Winston Churchill: "I did not

---

[92]Liddell Hart, *The Other Side of the Hill…,* 181.

[93]Ibid., 174.

[94]Ibid., 153.

[95]Quote from Field Marshal Von Rundstedt, in Ibid., 182.

comprehend the violence of the revolution effected since the last war by the incursion of a mass of fast-moving heavy armour."[96]

German application of operational art resulted in a spectacular victory. In World War I the Germans tried in vain to break the front for four years; in May 1940 they succeeded after only four days.[97] The Wehrmacht crossed their start line on 10 May 1940, and following the breakout at Sedan on 15 May 1940 the result of the invasion was a foregone conclusion. French Prime Minister Reynaud called Churchill with the news, "we have been defeated; we have lost the battle."[98] Panzer Group Kleist reached the Channel coast on 20 May 1940, thus cutting off the allied manoeuvre armies and catching 1.7 million Allied troops in the "sickle cut" trap.[99] The defeat of these manoeuvre armies, the allied operational centre of gravity, led to the subsequent downfall of France; the Wehrmacht turned south to defeat the French reserves and Maginot line armies, and the French surrendered on 22 June 1940.[100]

---

[96]Dupuy, *A Genius for War*…, 269.

[97]Frieser, "Panzer Group Kleist and the Breakthrough in France…", 168.

[98]Dupuy, *A Genius for War*…, 269.

[99]Frieser, "Panzer Group Kleist and the Breakthrough in France…", 174.

[100]Strange, "Understanding Centers of Gravity and Critical Vulnerabilities. Part 2...", 3.

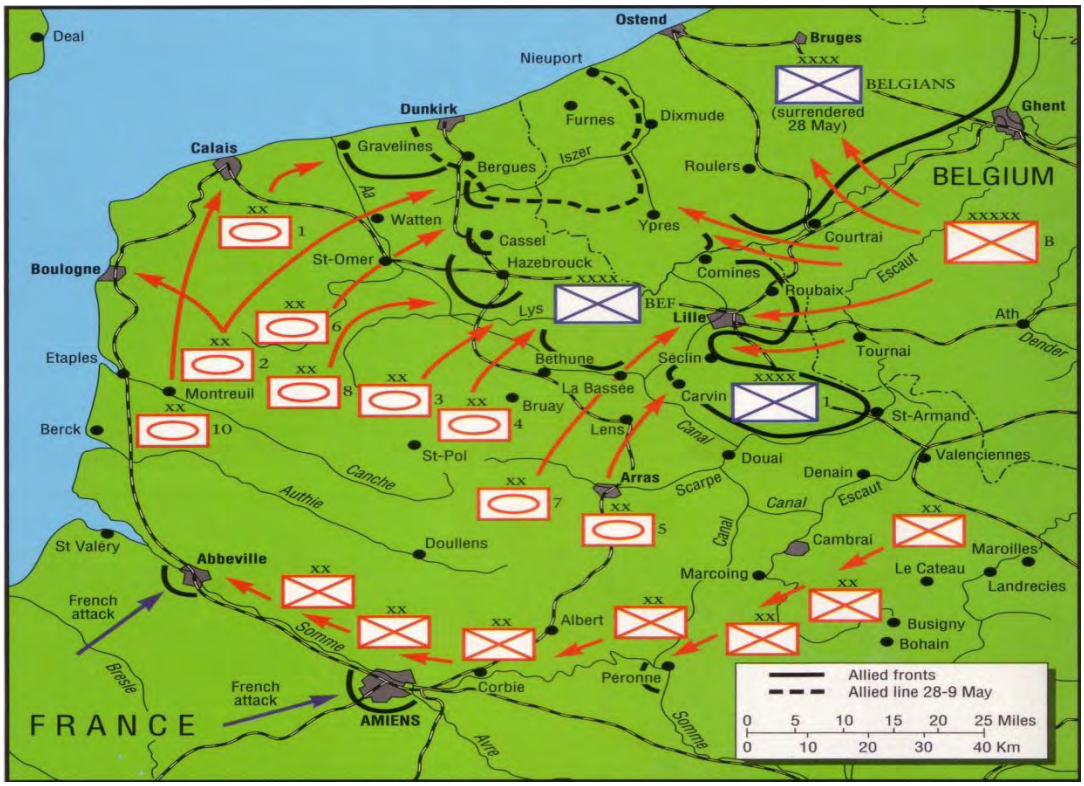

Figure 3.3 – German Envelopment of Allied Manoeuvre Armies, May 1940

Source: Sheppard, *France 1940…*, 87.

Table 3.1 shows how the Germans applied operational art in the French campaign;

Table 3.1 – Comparison of the German Invasion of France with Operational Art Criteria

Operational Art Criteria	Application in German Invasion of France
Identify the operational level centre of gravity and corresponding critical vulnerability.	-Germans correctly determined the operational centre of gravity as the Allied manoeuvre armies. -Derived that the Allied critical vulnerability was the weak Meuse defensive area.
Identify the campaign goal that will defeat the identified centre of gravity and thus fulfill assigned strategic goals.	-Recognizing overall Allied resource superiority, envisioned a campaign that would avoid the fortified Maginot line and attack the Allied centre of gravity in the rear and flanks, thus achieving rapid victory.
Create uncertainty in the enemy through the use of deception.	-Deception plan drew the Allied manoeuvre armies into Belgium and fixed the reserve and Maginot line forces.
Attack the enemy vulnerability by moving on unexpected axis.	-Unexpected approach through the Ardennes broke through the weak Meuse defenses, allowing the German main effort to manoeuvre to the flanks and rear of the Allied centre of gravity.
Create advantageous conditions for battle through favorable positioning of friendly forces relative to the enemy.	-Placed forces in relative superiority to break through the Meuse defenses and achieve breakout at Sedan. -At operational level, achieved envelopment of Allied manoeuvre armies by placing themselves to the flanks and rear.
Understand relative movement rates over time and space.	-Demonstrated a greater appreciation of time and space than the Allies, thus breaching the Meuse before French reserves could disrupt the bridgehead. -Consistently dislocated Allied counter-efforts by moving more quickly.
Overall Operational Result	-Enveloped and defeated the Allied manoeuvre armies; the operational centre of gravity. -Achieved the political goal of French surrender and the domination of mainland Western Europe.

There are several possible counter-arguments to the proposition that the Germans won due to their masterful application of operational art. First of all, it could be argued that the Germans won due to superiority of their armoured forces and mobility, which they applied in conjunction with dive-bombers in *Blitzkrieg* tactics. This is false; the Allies held a nearly three to two advantage in tank numbers, the majority superior in weight, armament and armour,[101] and the French also had assets such as dive bombers. The German army was not even fully motorized; just ten percent of the Wehrmacht was motorized in 1940, and most of the German logistical tail consisted of horse-drawn vehicles.

Second, it could be argued the invasion was in fact unsuccessful due to the escape of 340,000 Allied soldiers from Dunkirk, which could have contributed to the British decision not to surrender. However, this was a strategic level decision, as Hitler personally ordered Army Group A to halt in view of Dunkirk in order to "leave Dunkirk to the Luftwaffe."[102] Dunkirk was not due to a failing at the operational level.

In summary, the Germans applied operational art in the offensive in the French campaign. The application of operational art in this case commenced with what German General Hermann Hoth called "the guiding idea of the campaign…the creative deed of Manstein" – enveloping the Allied manoeuvre armies, the centre of gravity, to achieve strategic aims. Manstein recognized the critical vulnerability of the weak Meuse

---

[101]Roth. "The Campaign Plan 'Case Yellow'…", 42.

[102]Frieser, "Panzer Group Kleist and the Breakthrough in France…", 179. Although it will never be known for sure, there is some thought that Hitler was in fact applying shrewd strategic judgement, and that he could more likely come to peace terms with Britain if he didn't stain the honor of England by capturing the BEF.

defenses that when exploited through deception and the unexpected approach through the Ardennes, allowed the Germans to favorably position their forces to defeat the Allied centre of gravity. By demonstrating a greater understanding of relative movement rates, the Germans fulfilled all the requirements of conducting a campaign under operational art criteria. This chapter served to demonstrate how operational art was applied in a familiar offensive context; the next chapter will apply the same concept in a defensive scenario, where once again Erich Von Manstein and Adolph Hitler will feature as the main actors.

4. OPERATIONAL ART IN THE DEFENSIVE

"[Hitler's] way of thinking conformed more to a mental picture of masses of the enemy bleeding to death before our lines than to the conception of a subtle fencer who knows how to make an occasional step backwards in order to lunge for the decisive thrust. For the art of war he substituted brute force which, as he saw it, was guaranteed maximum effectiveness by the will-power behind it."

-Erich Von Manstein[103]

"The art of defense is to hasten the culmination of the attack, recognize its advent, and be prepared to go over to the offense when it arrives."

-FM 100-5 *Operations* (1986)[104]

The previous chapter demonstrated how the Wehrmacht successfully applied operational art theory in their 1940 invasion of France in an offensive context. Operational art historical examples are almost exclusively described in accordance with offensive campaigns such as that performed by the Germans in 1940. At some point, however, an operational commander may find himself on the defensive; understanding how operational art could be applied in a defensive context will be of considerable benefit. This chapter will argue that operational art is applicable in a defensive context. The case study that will be used to demonstrate this is Manstein's "Backhand Blow" at Kharkov on the Eastern Front in the winter of 1943; "Manstein's counterstroke proved a masterpiece of operational and logistic design, and in the integration of air and land

---

[103]Erich von Manstein, *Lost Victories* (Novato, California: Presidio Press, 1982), 280.

[104]United States, Department of the Army, *FM 100-5: Operations* (1986),181.

forces. There is hardly a better example of such a manoeuvre available in the Second World War."[105]

This chapter will outline the events that took place between the surrender of France and the German operations in the eastern theatre up to Stalingrad in order to provide context for Manstein's campaign. The German and Soviet military situations will be outlined, followed by the direction provided by Adolph Hitler. Manstein's use of operational art in his defensive campaign will then be described, comparing the campaign to the operational art criteria. The chapter will then conclude with a summary of key points that must be considered when utilizing operational art in a defensive context.

The surrender of France in June 1940 did not realize Hitler's goal of achieving a negotiated peace with Britain. The failure to defeat the Royal Air Force in the Battle of Britain meant that any German invasion attempt would not enjoy air superiority, leaving the German Army unable to cross the channel and thus undertake an invasion of England. As a result, Hitler adjusted his strategic aims; his new target was the Soviet Union. Hitler believed that England (perceived as his most dangerous enemy) could be brought to terms if the prospect of a British ally on the continent disappeared; and Hitler suspected the Soviet Union of being a British ally.[106] Hitler told his generals that it was essential to remove the Russian "menace" from their eastern flank, and that Germany would have to strike quickly before the Soviets become too strong and launched a planned offensive against Germany in 1941. It is unclear whether Hitler actually believed this or used it as

---

[105]Mungo Melvin, *Manstein: Hitler's Greatest General (*London:Weidenfeld & Nicolson, 2010), 321.

[106]Liddell Hart, *The Other Side of the Hill…,* 260.

a pretext for invasion; Manstein stated: "The Soviet deployment on the German, Hungarian and Romanian frontiers certainly looked menacing enough."[107]

In order to achieve the defeat of the Soviet Union, Hitler based everything on Stalin's overthrow by military means in a single decisive campaign. Field Marshal Paul von Kleist stated that "Hopes of victory were largely built on the prospect that the invasion would produce a political upheaval in Russia…built on the belief that Stalin would be overthrown by his own people if he suffered heavy defeats."[108] Hitler's specific objectives were primarily political and economic in nature. He first demanded the capture of Leningrad, which he viewed as the "cradle of Bolshevism," as well as the seizure of the economic areas of the Ukraine, Donetz basin, and the Caucasus, which would bring Germany wheat, industrial capacity, and energy respectively (as well as crippling the Russian war economy). The OKH, however, countered that capture and retention of these areas could only be achieved by defeating the Soviet forces themselves, which would be met on the road to Moscow.[109] Unfortunately for the Germans, Hitler made a compromise solution with his generals that aimed for all three objectives at once: three army groups, thrusting at Leningrad, Moscow and the Ukraine respectively.[110]

---

[107]Manstein, *Lost Victories*, 274.

[108]Liddell Hart, *The Other Side of the Hill…,* 259.

[109]Manstein, *Lost Victories*, 177. The terms "strategic" and "operational" have been omitted when referring to Hitler's direction. In December 1941, Hitler had named himself Commander-in-Chief of the army, which resulted in strategic and operational direction coming from the same person; more often than not, direction became a confusing amalgamation of strategic and operational direction.

[110]In this case, the military resources available to Germany were not enough to successfully accomplish all three Eastern Front aims, especially considering Great Britain had not been driven out of the war. See Record, "Operational Brilliance, Strategic Incompetence: The Military Reformers and the German Model", 6.

The plan, Operation BARBAROSSA, was launched on 22 June 1941. The German offensive, comprising 131 divisions, including 14 total Hungarian and Romanian divisions, crossed their start lines and quickly achieved a rapid incursion against the 132 Soviet divisions and achieved the destruction of hundreds of thousands of Soviet troopsd.[111] The Germans were within 30 kilometres of Moscow by late 1941, so close that "they could see the flashes of the Anti-Aircraft guns" within the city, but the Wehrmacht could not make into the capital.[112] Soviet counter-attacks during the winter were beaten back by the Germans, but the possibility of continuing further with the three-pronged assault was lost due to attrition. Hitler's strategy in 1942 was therefore to hold ground in the centre and north, and continue offensive operations towards Stalingrad and the Caucasus, which would achieve the economic objectives he desired. General Walter Walimont, who rose to Deputy Chief of the German Armed Forces Operations Staff during the war, stated that:

> Hitlers operational plan for 1942 still showed traces of his original idea, namely to push forward on both wings and to keep back the central part of the front. In contrast to the previous year he now shifted the centre of gravity to the southern wing…The underlying idea was certainly fostered by the prospect of economic gains in the South, especially of wheat, manganese and oil. But to Hitler's mind it was still more important to cut off the Russians from these goods, including coal from Donetz area. Thus he believed he could bring the Russian machine of war to a stand-still.[113]

---

[111]Dupuy, *A Genius for War*…, 269.

[112]Liddell Hart, *The Other Side of the Hill…,* 284.

[113]Ibid., 312.

The German army seized the Donetz basis, a major portion of the Caucasus, and had fought their way into Stalingrad by the end of 1942. Fortunes, however, now turned against the Germans. Major counter-attacks by the Soviets had surrounded the German 6th Army in Stalingrad, and the entire German Southern Wing (consisting of Army Group A and B) was under pressure. [114] The Soviets launched two major operations to cut off and destroy the German Southern Wing; Operations GALLOP and STAR. Three Soviet fronts were assigned to the operations.[115] If the Soviet offensive was successful, the entire Southern Wing of the German army would be cut off and destroyed, likely leading to the collapse of the whole German Eastern front.[116]

It is at this point that Manstein entered the picture once more. Manstein had proven himself an extremely competent commander in both France and the early stages of Barbarossa. During the initial stages of the eastern offensive, he led the 56th motorized corps that spearheaded the northern wing drive on Leningrad, and his success brought him command of 11th Army in the Southern wing. Manstein's conquest of the Crimea in the summer of 1942 earned him his promotion to Field Marshal and even greater prestige.[117] With the promotion came another increase in responsibility; promotion to Army Group Commander, placed in charge in November 1942 of the failing Stalingrad effort as the Commander of the newly formed Army Group Don. Army Group

---

[114]Forczyk, *Erich von Manstein: Leadership, Strategy, Conflict*, 33.

[115]A Soviet Front is equivalent to a German Army Group. Dana V. Sadarananda, "The Genius of Manstein: Field Marshal Erich von Manstein and the Pperations of Army Group Don, November 1942-March 1943" (doctoral thesis, Temple University,1989), 16.

[116]Manstein, *Lost Victories*, 367.

[117]Forczyk, *Erich von Manstein: Leadership, Strategy, Conflict*, 25.

Don, which would consist of the surrounded 6th Army, 4th Panzer Army, Army detachment Hollidt, and the 3rd and 4th Romanian armies, formed the centre of the German southern wing between Army Groups B and A (see Figure 4.1). Although the appointment to Army Group Commander was welcomed by Manstein, it also led to the misfortune of inheriting the "hopeless" task of saving the 6th Army at Stalingrad.[118]

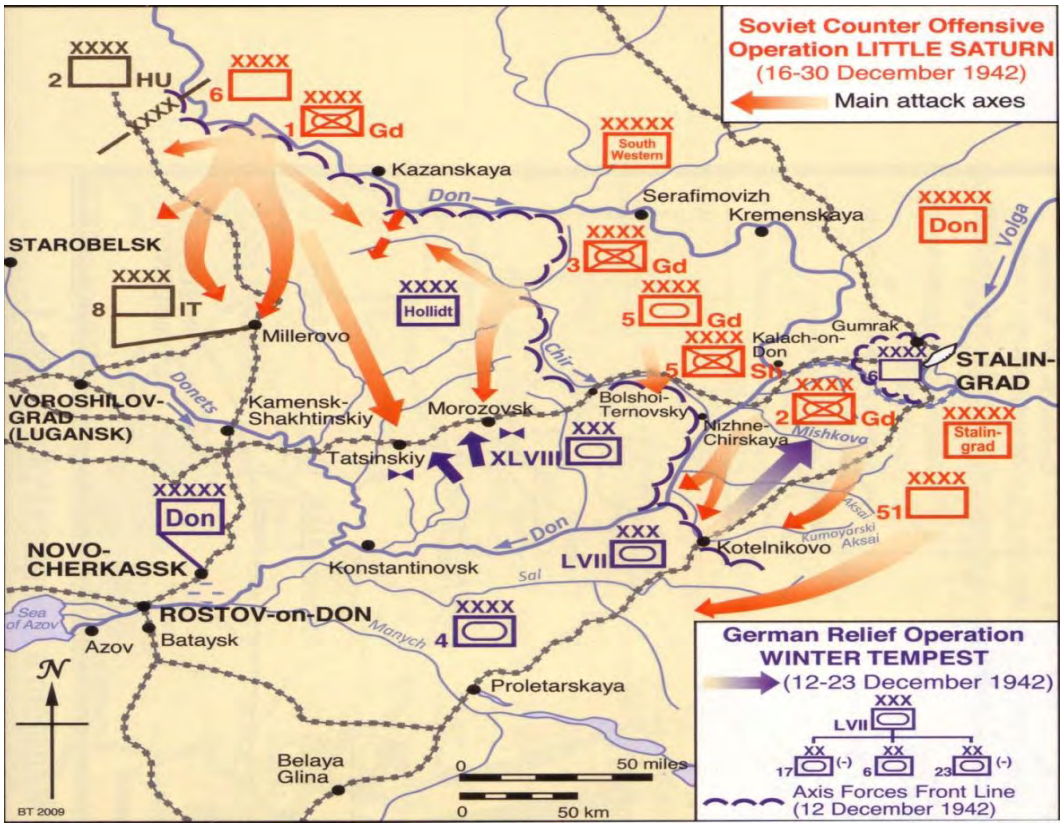

Figure 4.1 – Soviet Offensives against Army Group Don, January 1943[119]

Source: Melvin, *Manstein: Hitler's Greatest General*, Map Section.

---

[118]Melvin, *Manstein: Hitler's Greatest General*, 287. Army detachment Hollidt was a army-sized formation named after its commander, General Karl Hollidt.

[119]This map illustrates the location of Manstein's Army Group Don HQ, his main armies (Hoth's 4th Panzer and Hollidt's Infantry), as well as the doomed 6th Army surrounded at Stalingrad. The Army Group B boundary is marked in the northwest; Army Group A is located to the south of 4th Panzer Army in the Caucasus.

Manstein was once more thrust into a position where he was required to demonstrate his mastery of the operational art. This time, however, the operational art was required in a *defensive* context. Hitler's direction was as follows: "Bring the enemy attacks to a standstill and recapture the positions previously occupied by us."[120] Manstein first assessed the enemy facing him. Examining the direction of the Soviet thrusts, Manstein stated that "The operational plan for the Russians was obvious enough…his object had to be to amputate this wing from its communications zones and ultimately box it in on the sea-coast."[121] Such a manoeuver would have dire consequences for the entire German eastern front; from Manstein: "the southern wing, once cut off from its supplies, would be pushed back against the coast of the Sea of Azov or Black Sea and ultimately destroyed….after the destruction of Don Army Group and Army Group A, however, the fate of the entire Eastern front would have been sealed…"[122]

Having assessed the situation, Manstein needed to identify the Soviet operational centre of gravity, whose defeat would achieve Hitler's strategic objectives. As the Soviets were pushing forward their most mobile and powerful forces to cut off the German southern wing, Manstein built his campaign plan around the destruction of these "cut-off" forces; the Soviet 6th Army, 1st Guards Army, and the Popov Mobile Group, which consisted of four tank corps. Considering Army Group Don was facing a seven-

---

[120]Manstein, *Lost Victories*, 294.

[121]Manstein, *Lost Victories*, 371. Manstein is referring to the Sea of Azov.

[122]Ibid., 370.

to-one numerical disadvantage compared to the overall strength of the attacking Soviets, this would prove no simple task.

Manstein examined the critical vulnerabilities of the Soviet cut-off forces. First of all, feeling emboldened by their success at Stalingrad and perceived German weakness, the Soviets ordered their offensives "without any operational pause. The fronts, armies, corps and divisions received few if any replacements and had no time to re-equip or restock. A further limitation was that there were no significant reserves available..."[123] The Soviet offensive would therefore reveal the critical vulnerability of over-extended supply lines and lack of reserves; from Sadarananda: "Their forces were weakened and supplied by overextended supply lines, and they would have to attack in single echelon with no reserves."[124] Manstein would also exploit a second critical vulnerability in designing his campaign; the characteristics of the Russian soldiers themselves. Soviet forces were extremely rigid in their tactics, with little room for an alteration of plans in a changing situation. German General Kurt von Tippelskirch, an Eastern front corps commander, stated:

> It is not difficult to upset their plans, because they are very rigid. It takes them a lot of time to alter their plans, especially during an action. In my experience I always found that Russian attacks could be stopped and thrown back by resolute counter-strokes, even by far inferior forces – if made immediately- just because they took the Russians by surprise. [125]

---

[123]Melvin, *Manstein: Hitler's Greatest General*, 319.

[124]Sadarananda, "The Genius of Manstein… 169.

[125]Liddell Hart, *The Other Side of the Hill…,* 337.

Knowing the enemy operational centre of gravity and the critical vulnerabilities he could use to attack it, Manstein now applied his creativity to the problem to derive the basis of the "Backhand Blow" campaign.

Manstein had an operational idea to defeat the overwhelming Soviet forces attacking the German Southern Wing. The art of defense is to hasten the culmination of the attack, recognize its advent, and be prepared to go over to the offense when it arrives – thus regaining the initiative. Instead of holding firm in a frontal fixed defense, which the Soviets could break through with their superior numbers and then envelop the German defenses (as the Germans did to the French in 1940), Manstein decided to surrender territory to entice the Soviet forces to overextend themselves, and thus culminate, in an area of his choosing. The shortened defensive line gained through the surrender of territory would free up the German reserves that would be used in a counter-attack, thus going back on the offensive and re-gaining the initiative.[126] Mansteins campaign was designed as follows: He would first "leap-frog" formations to the rear to both check the Soviet drive to the Dnieper crossings, as well as assemble a strong counter-attack force in the vicinity of Kharkov. When the conditions were set, Manstein would then deliver the counter-blow that would defeat the Soviet centre of gravity and restore the German defensive front. The overall campaign plan is best described by Manstein himself:

---

[126]Melvin, *Manstein: Hitler's Greatest General*, 319. (look this up). A culminating point is that point where the strength of the attacker no longer exceeds that of the defender, and beyond which continued offensive operations therefore risk overextension, counterattack, and defeat. From United States, Department of the Army, *FM 100-5: Operations* (1986), 181.

> At the cost of surrendering the territory won in the summer campaign (which could not be held anyway), a grave crisis could have been turned into a victory! To this end it would have been necessary to withdraw the forces of Don and A from the front's eastern protuberance …in the meantime, and with forces that could possibly be made available – including those divisions of either army group which became disengaged through the shortening of the front – would have to be concentrated, let us say, somewhere around Kharkov. On them would have devolved the task of driving into the flank of the enemy as he pursued the retiring army groups or attempted to cut them off from the Dnieper crossings. In other words, the idea would have been to convert a large-scale withdrawal into an envelopment operation with the aim of pushing our pursuer back against the sea and destroying him there.[127]

With the outline of the campaign firmly in his mind, Manstein now applied the timeless principles of operational art to bring his campaign to fruition.

Manstein was able to apply the first timeless operational art principle of deceiving the enemy. From the time Operation GALLOP commenced on 29 January 1943 until Manstein's counter-stroke was launched on 19 February 1943, the Soviets were completely unaware of the intentions of Army Group Don, thus providing a tremendous advantage of surprise for the Germans. It was outside the scope of Soviet imagination that the Germans would give up ground voluntarily in order to gain advantage for a counter-stroke; the Soviets were fully aware of Hitler's "no withdrawal" policy that had been enacted on the eastern front to date. Therefore, when Manstein commenced leap-frogging his formations to the rear and shortening his lines, the Soviets assumed that the Germans were completely evacuating the area. Forczyk states:

---

[127]Manstein, *Lost Victories*, 372.

> Soviet intelligence detected Manstein concentrating Panzer units, but misinterpreted them as indicators of a German evacuation. [Soviet Front Commander General] Vatutin mistakenly concluded that the Germans were on the run and he pushed his forces past the culmination point where they were effective.[128]

Manstein then enacted the second timeless operational art principle. As the Soviets were deceived as to Manstein's actual intentions, Army Group Don was able to move on an unexpected axis and therefore attack the Soviet centre of gravity where it was vulnerable; in its flank, with stretched-out lines of communication, in the middle of what they thought was a successful offensive campaign. The Soviet forces had thrown the Germans back at Kharkov, and therefore did not expect a counter-offensive to come from this direction. Manstein also used a bold attack in an unexpected fashion to commence his counter-offensive; the Soviet 25th tank corps had nearly reached the German-held Dnieper crossings, and had seized the key rail junction at the town of Sinelnikov. To commence his counter-stroke, Manstein ordered the fresh reinforcements of the 15th Infantry Division from the Western front to detrain directly on the outskirts of Sinelnikov and attack the Soviets. The Soviets were caught completely off-guard and they withdrew from this key area. By utilizing an unexpected approach, an infantry division defeated a tank corps.[129]

The surprise and use of an unexpected approach enabled Manstein's utilization of the third timeless principle of operational art application, namely the

---

[128]Forczyk, *Erich von Manstein: Leadership, Strategy, Conflict*, 38.

[129]Forczyk, *Erich von Manstein: Leadership, Strategy, Conflict*, 40.

favourable positioning of friendly forces relative to the enemy. Manstein possessed both great intuition into enemy intentions, as well as a great capacity for taking risks to achieve the favourable force positioning required. This led Manstein to reject the conventional option of a fixed defence:

> In the case of any attempt to hold the Don-Donetz salient, moreover, the excessive length of the front virtually cancelled out the superiority in strength usually enjoyed by a defender over his attacker. In conditions of this kind the attacker has a chance to pierce the over-extended front at a spot of his own choosing, using relatively small forces and suffering no great losses. Since the defense lacks reserves, he is able to demolish the whole structure.[130]

As Army Group Don was inferior in numbers to the Soviets, Manstein knew he had to hit the Soviets in their flank to achieve their destruction. Manstein accepted risk in some areas, namely in allowing the Soviets to advance into a gap between his formations, created by enacting "hard shoulders" west of Kharkov and in the area of Stalino.[131]

Manstein accepted risk by having these "hard shoulders" reduced of forces in order to mass forces for his counterstroke, stating that all these forces could do was to "bar the way to the Dnieper…by putting up the toughest possible resistance. Should the enemy by any chance be aspiring to reach Kiev…we could only wish him a pleasant trip.[132] The Soviets pushed into the 100 kilometre gap between Army detachment Kempf and the 4th Panzer army, and made it to within 32 kilometres of the Dnieper River.

---

[130]Manstein, *Lost Victories*, 410.

[131]Melvin, *Manstein: Hitler's Greatest General*, 320.

[132]Manstein, *Lost Victories*, 431.

However, they were now out of fuel, spread out, exhausted, and psychologically unprepared for an unexpected counterattack on an exposed flank.[133]

On the morning of the 20th of February, 1943, Hoth's 4th Panzer army, consisting of the XLVIII and SS Panzer Corps, counterattacked into the flank of the Soviet "cut-off" forces; this "achieved the success for which we had been hoping. With that the initiative in this campaign at last passed back to the German side."[134] The Soviet leadership was caught completely by surprise, never ordered a shift to the defense, and the dispersed Soviet formations were thus destroyed when hit from their flanks (see Figure 4.2).[135]

---

[133]Forczyk, *Erich von Manstein: Leadership, Strategy, Conflict*, 40.

[134]Manstein, *Lost Victories*, 432.

[135]Forczyk, *Erich von Manstein: Leadership, Strategy, Conflict*, 9.

Figure 4.2 – Manstein's Counter-Offensive Phase 1, February 1943[136]

Source: Melvin, *Manstein: Hitler's Greatest General*, Map Section.

Manstein knew when he *no longer* was in a favourable force position; on the 16th of March 1943 in Belogorad, Army Group South ran into three full strength Soviet tank corps who had been brought in as reinforcements (which he would have had to attack in an non-advantageous frontal assault). Unlike the Soviets, Manstein realized his offensive had culminated and he halted the advance (see Figure 4.3).[137]

---

[136]This map illustrates the shortened defensive line of Manstein prior to his counterstroke. By his withdrawal, he was able to move Hoth's 4th Panzer off the defensive line, which in combination with the reinforcements from 1st Panzer and the SS Panzercorps, formed his offensive arm. Army Group Don was renamed Army Group South upon receipt of the reinforcements.

[137]Ibid., 41.

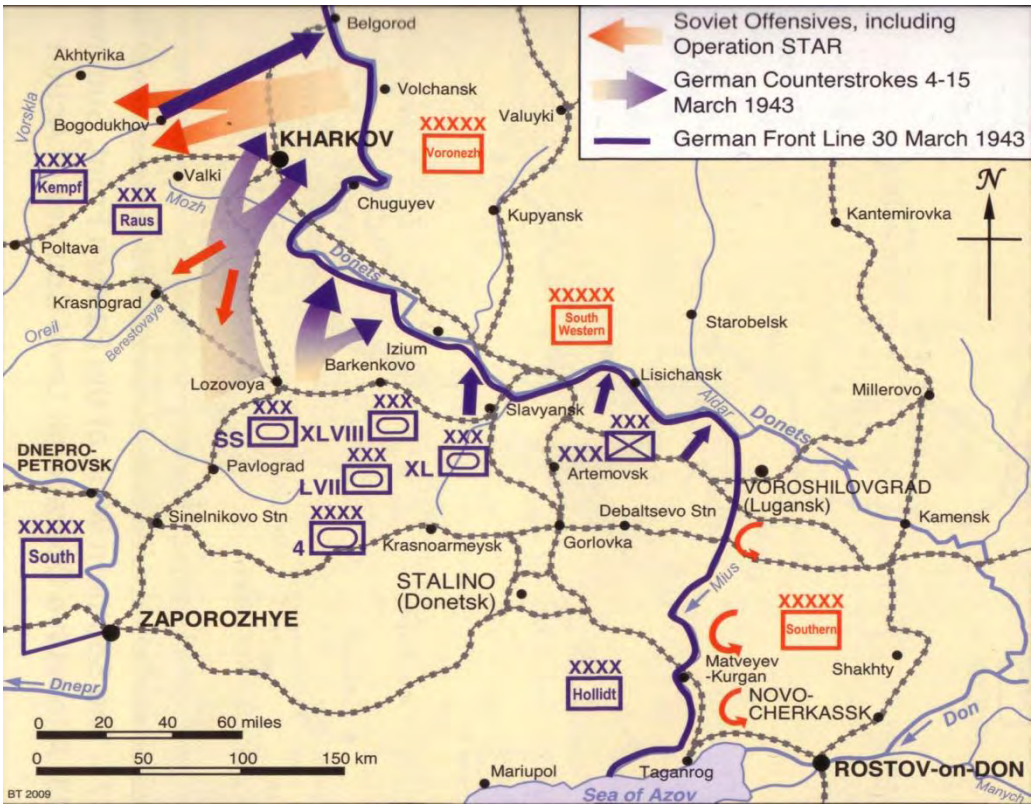

Figure 4.3 – Manstein's Counter-Offensive Phase 2, March 1943[138]

Source: Melvin, *Manstein: Hitler's Greatest General*, Map Section.

In order to conduct a movement battle in the defensive, Manstein needed to demonstrate the final aspect of his mastery of operational art; the mastery of time and space and understanding of relative movements. Manstein's area of operations was immense; Army Group Don possessed 700 kilometres of frontage from Kharkov to the Sea of Azov, and 400 kilometres of depth - in total, a 280,000 square kilometre area of combat zone (larger than the whole United Kingdom). [139] Manstein analysed the

[138]Using Army detachments Kempf and Hollidt to hold his left and right flanks respectively as the "hard shoulders", Manstein attacked into the South flank of both the Southwest and Voronezh Front and pushed the Soviets back across the Donets.

[139]Melvin, *Manstein: Hitler's Greatest General*, 320.

distances and knew the dangers he was facing; the Dnieper crossings at Zaporozhye and Dnepropetrovsk were only 260 miles from the enemy front, compared to 440 miles from the main Army Group Don concentration around Stalingrad.[140] Using his personal experience to drive his conclusions, Manstein was able to deduce the kind of time he required to have his forces in position: "I knew only too well from personal experience having in summer 1941 covered the odd 190 miles from Tilsit to Dvinsk in four days with 56 Panzer Corps."[141] Manstein applied the operational art to derive his detailed plan for intercepting the Soviets in time to conduct his flanking manoeuvre:

> The only course left to us was to gather in the eastern wing of the Army Group and throw the forces thus released over to the western wing. Everything depended, then, on our always thinking far enough ahead to switch forces from our eastern to our western wing in time to intercept the enemy's outflanking movements as the front gradually extended further and further west. [142]

The manoeuvre was timed perfectly; 1st Panzer army leapfrogged west through 4th Panzer army to intercept the Soviet attempt to cut off German lines of communication and form part of the "right shoulder." 4th Panzer then leapfrogged west through 1st Panzer and arrived nearly synchronous with the reinforcements of the SS Panzercorps to conduct the "Backhand Blow" counterattack. Manstein had foreseen this happening: "The battle being fought by the Southern wing and the deployment of the new forces must be so

---

[140]Manstein, *Lost Victories*, 369.

[141]Ibid., 370.

[142]Ibid., 373.

attuned to one another in a spatial sense as to become operationally coherent."[143] Manstein's mastery of time and space contributed to his victory: "Manstein's encirclement tactics did not require large armoured forces but instead relied on speed and efficient coordination to literally "run rings" around their stronger opponents."[144]

Field Marshal Erich von Manstein's application of the operational art led to a spectacular German victory; their last on the Eastern front. With only three armoured corps of his own, Army Group Don/South completely defeated both Soviet offensives, inflicted approximately 100,000 casualties on the Soviets, and "mauled 8 of 20 Soviet tank corps on the whole eastern front."[145] Manstein's acceptance of risk to expose the critical vulnerabilities worked out perfectly, and revealed the great confidence he held in his operational plan: "The fact that a not very powerful enemy tank force had thrust close up to Zaporozhye did not now imply any great danger. It ran out of petrol some 12 miles from the town and was duly destroyed piecemeal."[146] The Soviet forces driving towards the Dnieper, the Soviet 6th Army, 1st Guards Army, and the Popov Mobile Group, were decimated. The objective of halting the Soviet advance and restoring the German front had been achieved. From Liddell Hart: "The breathing space after Kharkov enabled the Germans to consolidate a firm position in the East, and to build up their strength afresh – sufficient to provide a good prospect of holding the Russians at bay."[147]

---

[143]Ibid., 400.

[144]Forczyk, *Erich von Manstein: Leadership, Strategy, Conflict*, 42.

[145]Ibid., 42.

[146]Manstein, *Lost Victories*, 431. Zaporozhye was one of the critical Dniepr crossings.

[147]Liddell Hart, *The Other Side of the Hill…,* 318.

Table 4.1 will summarize how Manstein's defensive campaign satisfied operational art criteria:

Table 4.1 – Comparison of the "Backhand Blow" with Operational Art Criteria

Operational Art Criteria	Application in "Backhand Blow"
Identify the operational level centre of gravity and corresponding critical vulnerability.	-The forces aiming to cut off the German southern wing. -Manstein derived that the critical vulnerabilities were their overstretched lines of communication, lack of reserves, and psychological inability to cope with switching from the offensive to defensive.
Identify the campaign goal that will defeat the identified centre of gravity and thus fulfill assigned strategic goals.	-Manstein envisioned a campaign that would trade space for time, giving up terrain in order to funnel the Soviets into an area where the reserves freed up by shortening the line could be brought to bear on the Soviet flank.
Create uncertainty in the enemy through the use of deception.	-The withdrawal of Army Group Don convinced the Soviets that the Donetz area was under evacuation, thus setting the conditions for surprise when the counterstroke launched.
Attack the enemy vulnerability by moving on an unexpected axis.	-Counterstroke was launched from unexpected directions west and south of Kharkov and into the Soviet flank. -Audacious manoeuvre of 15th Infantry Division at Sinelnikov to commence the counterblow.
Create advantageous conditions for battle through favorable positioning of friendly forces relative to the enemy.	-Pulling back and shortening his lines allowed Manstein to free up the counterattack forces he would require to achieve favourable force ratios. -Creating "hard shoulders" pushed the Soviets into a lane where the counterstroke could hit the Soviet flank.
Understand relative movement rates over time and space.	-Over vast distance in thawing conditions, synchronized the withdrawal, reset, and staging of his own and reinforcement forces in time to conduct his counterstroke.
Overall Operational Result	-Defeated the enemy centre of gravity through successful defensive campaign. -Achieved the strategic aim of stabilizing the German Southern Wing.

When applying the operational art in the defensive, Manstein required the freedom inherent in the position of an operational commander to create and execute his campaign; this was far from the case, however. Manstein was constantly wrangling with Hitler over the method to maintain the German front in the east. Hitler did not want to give up terrain that had been gained at great cost; he wanted to maintain a solid defensive line with no withdrawal. From Manstein: "Hitler was not the man to embark on a course which initially committed him to relinquish the conquests of the summer of 1942 and would unquestionably have entailed considerable operational hazards."[148]

Hitler's was against Manstein's plan to give up space in order to achieve the defeat of the Soviet centre of gravity. Hitler did not want to lose the prestige that would come with giving up holdings he possessed. Hitler also considered the economic benefits of maintaining control of the Donetz basin and the Caucasus of utmost importance, and lost sight of the fact the operational-level centre of gravity of the Soviet Union as a whole, their army, needed to be defeated in order to gain and maintain control over the territory and resources he desired:

> What Hitler overlooked was that the achievement and – most important of all – the retention of a territorial objective presupposes the defeat of the enemy's armed forces. So long as this military issue is undecided – and this may be seen from the struggle against the Soviet Union – the attainment of territorial aims in the form of economically valuable areas remains problematic and their long-term retention a sheer impossibility.[149]

It must also be considered that Hitler did not possess the military background to understand Manstein's campaign concept in general; having inserted himself into the

---

[148]Manstein, *Lost Victories*, 372.

[149]Ibid., 276.

operational chain of command, Hitler, who did not rise above the rank of Corporal, was out of his depth when discussing operational matters vice the strategic issues that should have rested in his domain as the national leader.

The resulting lack of consensus in method for pursuing the Hitler's objectives led to a series of disputes between Manstein and Hitler, which normally would have resulted in Manstein's dismissal: "Manstein was a source of irritation to Hitler by constantly prodding him to withdraw Army group A; had he not been one of Hitlers favourites, he would have been dismissed."[150] Manstein finally got his way after weeks of convincing Hitler, including the use of arguments normally used in the strategic domain; part of swaying Hitler included "Manstein telling Hitler that according to the president of the German coal cartel, the coal in the area was unsuitable for coking or locomotive combustion."[151] Due to the delays in approval for the campaign, and especially allocations of the reinforcements required to conduct the counterblow, "Manstein was forced to improvise operations rather than follow an elegant plan, much of what he decided was under extreme enemy and time pressure, and he had to prise decisions out of Hitler at the last safe moment."[152] The fact that he was able to maintain focus on his overall campaign concept under such constraints further speaks to Manstein's mastery of the operational art.

---

[150]Sadarananda, "The Genius of Manstein…", 150.

[151]Ibid., 184.

[152]Melvin, *Manstein: Hitler's Greatest General*, 320. By March 1944 Hitler had finally had enough of Manstein's arguments, and he was removed from his command and sent back to Germany. See Mellenthin, *German Generals of World War II: As I Saw Them,* 38.

What has been learned from this campaign that is specific to the application of operational art in the defensive, as opposed to the offensive? To be successful in either an offensive or defensive context, the operational art must be applied to seek out the centre of gravity. In the offensive, the attacker holds the initiative and can dictate the manner in which the enemy centre of gravity is pursued. In the defensive however, the defender must base their campaign plan around the expectation of how the attacker's centre of gravity will conduct itself, and thus open itself up for attack. In practical terms, this means that in order to apply operational art in the defensive, a commander must possess as much knowledge as possible of enemy intentions for their campaign, and apply their experience and intuition to judge when and how the centre of gravity might reveal it's critical vulnerabilities. This was demonstrated through Manstein's assessment of Soviet intentions during their STAR and GALLOP offensives; if Manstein had misjudged Soviet intentions, the actions of Army Group Don/South would have become irrelevant.

Manstein's ability to maintain focus on the foundations of his campaign design, under extreme enemy pressure and when the situation may have looked untenable, speaks to the great confidence that a commander must possess in their plan in order to see it through. The risk of allowing an enemy force to penetrate friendly lines was extremely high, yet Manstein remained firm in enacting his plan. Such confidence was based on the upbringing, training and experiences he has received in the German military system.

As for the subject of critical vulnerabilities, Manstein's assessment of Soviet critical vulnerabilities was correct, and such vulnerabilities are just as likely to be prevalent today; overstretched supply lines and the resultant loss of combat power

resulting in culmination, and the psychological disadvantage that comes with culmination. This issue has made its way into modern doctrine:

> Fighting a defensive battle after reaching a culminating point is extremely difficult for several reasons. Defensive preps are hasty and forces are not adequately disposed for defense. Re-org for defense requires more time than the enemy allows. Usually the attacking forces are dispersed, extended in depth, and weakened in condition. Moreover, the shift to defense requires a psychological adjustment. Soldiers who have become accustomed to advancing ("winning"), now must halt deep in enemy territory and fight defensively on new and often unfavorable terms. Attacks rarely culminate on ground ideally suited for defense.[153]

In terms of applying the timeless principles of operational art, they are all applicable in the defense. The ability to achieve deception is key, but centres around location and strength of counterattack forces, as well as the intent and composition of any fixed defensive forces in place. As for attacking on an unexpected axis, a fixed defense cannot achieve this, as the enemy is the adversary conducting the manoeuvre and thus controlling the direction of attack. It is the counterattack forces in the defensive that need to come from the unexpected direction, as Manstein's forces demonstrated at Kharkov.

The aspect of favourable force positioning in the defensive provides a dilemma for a commander. Historically the defender has held the advantage in terms of favourable force positioning by placing defensive positions so that the aggressor has to attack frontally, as well as gaining the advantage gained by defensive fortifications of the fixed line. The offense, however, possesses the initiative in terms of where and when they will decide to attack. Both the German triumph in France and the "Backhand Blow"

---

[153]United States, Department of the Army, *FM 100-5: Operations* (1986),182.

campaign demonstrate that in the age of mechanized mobility, the advantage of a fixed defense may be negated – amphibious, air assault, airborne, and independent modern mechanized forces have reduced the advantage to a fixed defender even more, and a numerical and resource advantage on the part of the attacker will further enhance the possibility that the enemy will break through defending lines. It is the maintenance of sufficient counter-attack forces to regain the initiative for the defender that will be key in terms of favorable force positioning in the defense.

Unless there is no chance that the aggressor will break through friendly fixed lines, including through neutral neighbours, a defense that trades space for time may be the only manner by which a commander is able to apply the timeless operational art principle of achieving favourable force positioning; counter-striking an attacker on an exposed flank. As for the understanding of relative movement rates, in order to time any counterstrike correctly, this final component of operational art is essential in a defensive context.

The case study of the "Backhand Blow" point to the following deductions:

1) The aim of the defense must be to regain the initiative;
2) The defender needs to force culmination upon the attacker as soon as possible in order to set conditions for the counter that will regain the initiative;
3) Sufficient forces must be present to conduct this counterattack; and
4) A mobile defense is more advantageous then the fixed defense to set the conditions for successful counter-attack under certain conditions;
5) Enacting such a plan, however, will require great confidence on the part of the commander in order to be able to accept the great risk involved in enacting a mobile defense.

The section on Hitler's interference, however, provides the final piece of this chapter: recall that operational art designs campaigns to achieve strategic goals. Giving up

territory – trading space for time to defeat an aggressor's centre of gravity – may be very difficult to push past the political authorities.

> [Hitler] began by dwelling on his understandable aversion to any voluntary surrender of hard-won territory so long as it could not be proved – as he thought – that no alternative measure existed. It was a viewpoint which every soldier will appreciate…But it is a well-known maxim in war that whoever tries to hold on to everything at once, finishes up by holding nothing at all.[154]

Hitler's aversion to giving up territory was great, and it was not even German soil; giving up actual home territory would prove even more difficult to achieve for an operational commander.

Field Marshal Erich von Manstein applied the operational art in his "Backhand Blow" campaign, thus demonstrating that the operational art is applicable in a defensive context. Manstein applied his creativity to the problem of defeating the Soviet centre of gravity of the forces aiming to cut off the German Southern Wing by envisioning a campaign that would trade space for time, freeing up the forces that could exploit the Soviet critical vulnerabilities and then attack them. Manstein exploited the deception created by his withdrawal to attack from an unexpected direction and counterattack into the Soviet flank, thus achieving favourable relative force positioning. Finally, Manstein demonstrated mastery of time and space and relative movement rates through the complex "leapfrogging" to the rear of multiple Panzer Armies in conjunction with reinforcements to attack the Soviet centre of gravity at the moment of their culmination. Key deductions regarding the application of the operational art in the defensive vice the

---

[154]Ibid., 410.

offensive have been drawn out; it is with this knowledge that an examination of the suitability of the application of operational art in a defensive context in the modern, nuclear era will now be conducted.

5. DEFENSIVE OPERATIONAL ART: MODERN CONSIDERATIONS

"By conducting a comprehensive analysis of past wars, it is possible to construct some hypotheses about future war."

-Milan Vego[155]

The previous chapter provided a case study in how operational art could be applied in a defensive context, and drew out the key lessons that make the defensive unique in terms of factors that a commander must consider in conducting this type of campaign. Advances in weaponry and geopolitical changes since World War II, however, mean that defensive operational art in a modern context must be examined to determine if the lessons drawn from Manstein's campaign are still valid. This chapter will examine defensive operational art in a modern context.

The Cold War did not devolve into World War III, leaving no modern operational-level defensive campaigns by the major powers to examine. In order to provide a framework for analysis, the major Cold War defensive doctrine of the North Atlantic Treaty Organisation (NATO), that of "Forward Defense", will be analysed utilising the operational art criteria and lessons drawn from the "Backhand Blow" case study. This is a valid pursuit; as Vego states, "History can be studied to derive lessons that prove or negate the validity of tactical and operational tenets and ways of using ones military sources of power."[156] In terms of methodology, this chapter will outline the context in which Forward Defense and its principles were conceived, and how this

---

[155]Milan Vego, "On Military Theory," *Joint Force Quarterly* Issue 62, 3rd quarter (2011): 64.

[156]Milan Vego, "Military History and the Study of Operational Art", 126.

doctrine compares with operational art theory. The effect on defensive campaigns of nuclear weapons and other modern circumstances will be examined, and the chapter will conclude with the key factors that a commander must consider in a defensive context in order to best apply the operational art.

The context in which Forward Defense arose will first be examined. The German defeat at the hands of the Soviet Union and the Western Allies had turned the course of geopolitics; it was now the democratic Western powers that found themselves locked in an adversarial stance versus the Soviet Union and their communist "Warsaw Pact" Allies that defined wold conflict in the forty-five years following the end of the Second World War. As both sides leveraged for advantage in spreading and containing each other's contradictory ideologies, the threat of the Cold War breaking out into World War III was ever present.

The Soviet military threat facing NATO from the Eastern side of divided Germany was formidable. Soviet aims: "to exploit any weakness to their own advantage, within as well as outside the NATO area, in order to strengthen their position as a world power."[157] The Warsaw Pact held a tremendous resource advantage over NATO; in the European theatre, the Warsaw Pact held 183 divisions, 42,500 Main Battle Tanks, 78,800 Armoured Personnel Carriers, and 7,240 Combat Aircraft. NATO land forces in Europe only numbered 85 divisions, 13,000 Main Battle Tanks, 30,000 Armoured Personnel

---

[157]NATO Military Committee, *MC 14/3: Overall Strategic Concept for the Defense of the North Atlantic Treaty Organization Area*, 16 January 1968, 4.

Carriers, and 2,975 Combat Aircraft.[158] Although NATO started the Cold War with a technological advantage which could have compensated somewhat for numbers, as the Cold War progressed, they "lost much of the technological advantage which permitted NATO to rely on the view that quality could compensate for quantity.[159] The Soviet announcement in 1949 that they had detonated an atomic device meant that both sides possessed nuclear capability.

In terms of doctrine, the Soviet Union built their massive force structure to conduct highly aggressive, mobile combined arms offensive operations over long distances against their NATO adversary. Their doctrine is best summarized by Soviet expert David Glantz:

> Through the means of focused operational and tactical maneuver, Soviet forces will attempt to pre-empt, disrupt, or crush forward enemy defenses; penetrate rapidly into the depths of the enemy's defenses along numerous axes; and, by immediately intermingling their own and the enemy's forces and by other direct actions, deprive the enemy of the ability to respond effectively with nuclear or high precision weapons. As Soviet maneuver unfolds into the depths, consequent paralysis of enemy command and control will ultimately produce paralysis of his will to resist and, hence, his final defeat.[160]

This doctrine is highly reminiscent of the German *Blitzkrieg* methods that were so effectively used to the defeat French fixed defenses in 1940, as well as the tactics used by

---

[158]NATO, *NATO and the Warsaw Pact: Force Comparisons*, NATO Information Service, 1984, 7-17.

[159]Ibid., Foreword.

[160]David M. Glantz, *Operational Art and Tactics* (Fort Leavenworth: Soviet Army Studies Office, U.S. Army Combined Arms Center, 1988), 5.

the Soviets to eventually defeat the Germans; so what was NATO's response to counter this Soviet threat?

The answer was the NATO doctrine of Forward Defense. The essence of Forward Defense was that the NATO forces would be deployed as close as possible to the Inter-German border, with combat operations against the Soviets starting "as soon as possible, with a maximum of combat power, close to the border and maintaining the continuity of defense."[161] On the critical 800 kilometre-long Central Front, where the majority of forces were to be positioned, individual nations were responsible for the eight corps sectors in a linear defense that would meet the Soviet threat from prepared defensive positions (see Figure 5.1); the overall aim of forward defense was that "NATO will meet and attempt to thwart a [Warsaw] Pact attempt at the inter-German border. The aim is to prevent the Pact from penetrating into West Germany by stopping an offensive before it makes any headway."[162]

---

[161]Carl-Friedrich Dwinger, *Warning Time and Forward Defence*, (Kingston: Queen's University, 1984), 35.

[162]John J. Mearsheimer, "Maneuver, Mobile Defense, and the NATO Central Front," *International Security* Vol. 6, No. 3 (Winter 1981/82): 105.

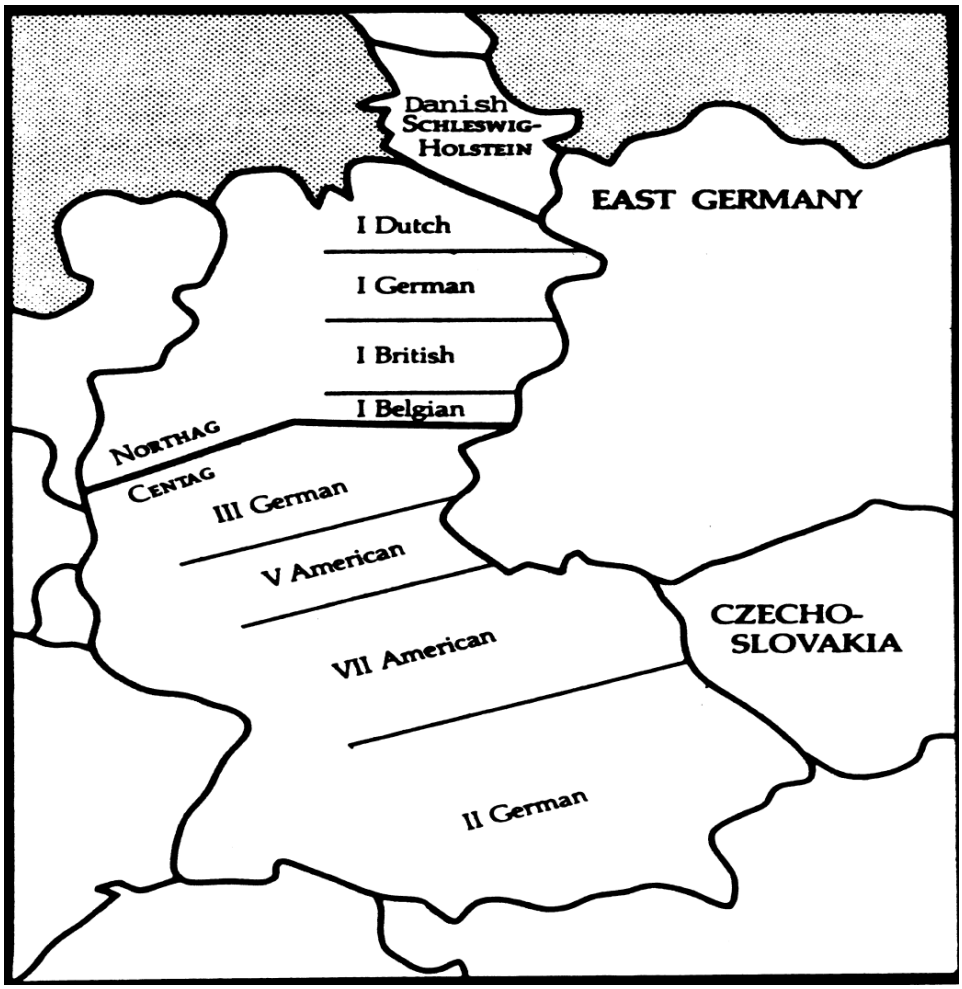

Figure 5.1 - NATO Corps Sectors in the Forward Defence

Source: Dwinger, *Warning Time and Forward Defence*, 34.

Reserves not in the forward line were minimal, for example the only reserves available in the South sector was the Canadian Brigade (consider the value of one Brigade in reserve against a Soviet main effort that could contain 100 divisions). Room for manoeuvre was minimal, as "The NATO Corps themselves, at least those in Central Army Group protected by huge barrier minefields, would not have maneuvered as corps,

since ground and size would have precluded them from doing so efficiently."[163] Overall, the mobile, powerful Soviet forces whose doctrine was based on breakthrough and exploitation versus NATO, basing themselves in a linear fixed defense with limited mobility and reserves, is highly reminiscent of Germany versus France in 1940 – and Chapter two described that outcome.

It will never be known how the Forward Defense concept would have held up in the face of a Soviet attack, as the battle was never fought. Some analysis, however, can be conducted on the doctrine based on past lessons. The doctrine of Forward Defense elicited great debate during the Cold War regarding the utility of the concept, with numerous articles in academic journals positing "for" or "against" the Forward Defense. On the "against" side, the main argument was that "since the Allies have constructed a layered scheme of national corps sectors across the inter-German border from north to south, NATO plans to fight a *hopelessly linear* forward defense."[164]

Drawing on the lessons from previous chapters, it would have been very difficult for the operational commander to apply the operational art in this style of defense and achieve the aims of defense – achieving culmination and going back on the offensive. As the Soviets would have attacked on a wide frontage, it would have been very difficult to identify the actual centre of gravity. Should the forward defense have been breached, Soviet doctrine was to reinforce success by pushing multiple echelons through the breach; these forces would reveal the critical vulnerabilities that had been exposed in

---

[163]English, "The Operational Art…", 10.

[164]James A. Blackwell Jr., "In the Laps of the Gods: The Origins of NATO Forward Defense," Parameters Vol XV, No. 4 (1985): 64.

chapter three, namely exposed supply lines and psychological exposure to counter-attack. Should the centre of gravity have revealed itself as those Soviet forces conducting the exploitation through a breach, however, NATO would not have had the reserves available to attack these Soviet forces. From defense analyst Steven Canby: "after covering its front in "layer cake' fashion…few reserves exist to provide the flexibility required to counter Warsaw Pact moves."[165]

In terms of achieving surprise and moving on an unexpected axis, it was the Soviets who held the initiative, it thus would have held the advantage in this aspect. As for the defender, Manstein demonstrated how a mobile defense could achieve surprise through the launch of unexpected counter-attack, and the Forward Defense concept would have been unable to do this due to lack of counter-attack forces. As for favorable force positioning, the prepared defensive positions provided NATO with some advantage, but the massive numerical superiority of the Soviet forces could very well have achieved a breakthrough at some point, and then would have exploited this success to attack NATO weakness; the rear areas and command and control networks. As for understanding of relative time and space considerations, it was the Soviets who built their forces to achieve a faster operational tempo, and there was no space available for NATO to manoeuvre even if they could have.

---

[165]Steven Canby, "NATO: Reassessing the Conventional Wisdoms," *Survival: Global Politics and Strategy* Vol XIX, No. 4 (July/August 1977): 165.

The only option for the forward defense was to be so strong that it forced culmination on the Soviet forces before a breakthrough, and this would have been difficult; according to defense analyst Edward Luttwak:

> In the Central European theatre of NATO, [NATO] forces are still deployed to implement pure attrition tactics which presume a net material superiority (or more precisely, a net superiority in firepower production). The expected enemy, however, is in fact superior in firepower capacity overall, and would most likely achieve even greater superiorities at the actual points of contact, where its column thrusts would collide with the elongated NATO frontage. Current tactics must virtually guarantee defeat against a materially superior enemy, since strength is to be applied against strength…Forward Defense precludes the adoption of the only operational methods that would offer some opportunity to prevail over a materially more powerful enemy.[166]

Overall, it would have been difficult for the operational commander to apply the operational art in the defensive to achieve the culmination of the enemy and regain the offensive.

The ideas of these critics would be in line with the lessons drawn from Mansteins "Backhand Blow", in which Army Group Don used the massive amount of space available to allow the numerically superior Soviets to culminate through the distance travelled, followed by the use of the cohesive Wehrmacht reserves made available by shortening the defensive line. Not all circumstances are identical, however. First of all, the space available for a NATO defensive requires examination. Manstein had 400 kilometres of depth over the conducive tank country of the Ukraine on which to conduct his manoeuvre, with only two understrength Armies at his disposal. West Germany at its

---

[166]Edward N. Luttwak, "The Operational Level of War," *International Security* Vol. 5, No. 3 (Winter, 1980-1981): 79.

smallest distance from eastern to western border is only 225 kilometres, is filled with man-made and natural obstacles, and the forces on both sides would have been far greater than those on both sides during the Kharkov campaign. Manstein had none of his own population to protect during the Kharkov campaign; yet in West Germay, 30 percent of the population lived within 100 km of the inter-German border, along with 25 percent of their industrial base.[167] Unlike in the Ukraine, NATO would have had to deal millions of refugees, which would have impeded the manoeuvre of a mobile defense battle. Overall, conducive space was lacking for NATO to conduct a mobile defense with.

The forces of NATO must also be compared to the forces of Manstein. The World War II Wehrmacht is considered one of the pre-eminent military forces in world history, built and schooled in the common doctrine of manoeuvre and mission tactics, and led by arguably the finest collection of general officer talent in any war. The forces Manstein conducted his campaign with were all German (once the Romanians and Italians had collapsed), and the common language, doctrine and intent were a pre-requisite to conduct the kind of complex mobile manoeuvres that formed the basis of the "Backhand Blow". Now consider the forces of NATO. Comprising of six countries speaking multiple languages, varying in equipment quality, training standards and overall national intent, these factors that characterize Alliance warfare would likely have precluded the use of a mobile defense. Large-scale exercises could perhaps have rectified

---

[167]John Reed, *Germany and NATO* (Washington D.C.: National Defense University Press Publications, 1987), 82.

the problem, but there was not enough space in industrialized West Germany to conduct such manoeuvres, even if the will had been present to do so.[168]

Finally, consider the doctrine of the Soviets themselves. Their doctrine was built to attack and achieve success against unprepared defensive positions and other mobile forces –they wanted to encounter NATO mobile forces in meeting engagements. Drawn straight out of Soviet doctrine, "The Soviets strongly believe requisite offensive success can be achieved only against an unprepared or partially prepared defense."[169] The whole NATO posture was based on deterrence, and with the forward defense being built around formidable prepared positions, covered by extensive minefields and pre-stocked supplies, the forward defense may have been in fact the best methodology to deter Soviet attack. Mearsheimer (check spelling) stated that "It is the [Warsaw] Pact that must be deterred, and the best way to achieve that end is to convince its military leaders that an offensive would lead to a lengthy war of attrition."[170]

From an operational perspective, Forward Defense may have been the best prospect NATO had for achieving success against the Soviets. Such mobile defense versus fixed defense arguments, although interesting, were moot however in the end. Recall that the operational commander begins applying the operational art by considering the strategic direction, including constraints, that he has been provided. Even if a mobile defense may have been the best operational methodology to have defeated the Soviet

---

[168]John J. Mearsheimer, "Maneuver, Mobile Defense, and the NATO Central Front," *International Security* Vol. 6, No. 3 (Winter 1981/82): 114.

[169]Glantz, *Operational Art and Tactics,* 12.

[170]Mearsheimer, "Maneuver, Mobile Defense, and the NATO Central Front", 120.

offensive, it was not politically feasible. NATO required the resources of West Germany in its force structure, and therefore had to consider their political interests in formulating an operational plan.

The arguments between the mobile versus forward defense supporters focussed on the operational methodology, but left out the strategic piece. West Germany had no interest in allowing their territory to turn into a mobile-defense battlefield, a memory especially vivid for those who had lived through the latter stages of World War II and its corresponding destruction of German territory.[171] This was so strongly felt in West Germany that it appeared in official government policy; from the 1983 German white paper:

> Density of population, economic infrastructure, and the great range of the attacker's weapons, prohibits any such [mobile defense] strategy. A concept, under which only part of our population, namely, that in the more westernly regions, is defended, while the border area is relinquished right from the beginning and its population are expected to bear the brunt of the war, even to endure occupation by the aggressor, is contradictory to reason, to the responsibility of the State, and to national German interests.[172]

When these political factors were added to the equation, NATO really had no other option but to pursue the doctrine of Forward Defense.

Looking historically at what the Germans inflicted on the French in 1940, and providing the Soviets a triple advantage in force ratios, and it would appear likely that NATO would have lost the battle over West Germany. There was a new factor not at play in Manstein's time, however. Forward Defense was only a *part* of the overall

---

[171]Reed, *Germany and NATO*, 81.

[172]Dwinger, *Warning Time and Forward Defence*, 42.

NATO strategic concept, known as "Flexible Response". The overall NATO strategic deterrent consisted of a "triad"; the strategic nuclear forces, the intermediate and short range nuclear forces, and the conventional forces.[173] It was evident to military planners that the Soviet massive resource superiority would likely breach the NATO lines, and nuclear weapons were the last-resort guarantee that would defeat Soviet aggression.

The strategy was no secret; in September 1952, General J. Lawton Collins, US Army Chief of Staff, told a NATO press conference that atomic weapons "will result ultimately in the ability to do the job with a smaller number of divisions."[174] The reasoning behind the term "Flexible Response" was pure deterrence; response to Soviet aggression could range from the conventional Forward Defense, to strategic nuclear attack on Soviet population centres. Since the Soviets could not calculate the actual risk they would incur through conventional aggression, deterrence was more likely.[175] So in essence, nuclear weapons replaced the forces required both to force the culmination of the Soviets and regain the offensive; nuclear weapons could force immediate culmination. This idea appears in modern doctrine; "Today another cause of culmination can be added. If the defender possesses nuclear weapons, he may at some point be pressed into using them in spite of the risk of retaliation."[176]

---

[173]NATO. *NATO and the Warsaw Pact: Force Comparisons*, 2.

[174]Blackwell, "In the Laps of the Gods: The Origins of NATO Forward Defense", 73.

[175]Dwinger, *Warning Time and Forward Defence*, 28.

[176]United States, Department of the Army, *FM 100-5: Operations* (1986), 181.

The use of nuclear weapons in a defensive context is, of course, fraught with risk. The West Germans were not supportive of tactical nuclear weapons destroying Soviet armoured concentrations on West German soil. Soviet nuclear parity, especially the ability to reach the United States, would have made authorization to use nuclear weapons very difficult for political leadership.[177] The Soviets also built their doctrine around avoiding nuclear war; "…the Soviets would attempt to exploit NATO vulnerabilities without escalation to nuclear war. Such actions would be aimed at achieving a quick response with limited objectives, followed by a prompt call for negotiations to exploit a fait accompli."[178] The Soviets certainly aimed to avoid nuclear conflict, Marshal V.N. Ogarkov, who became Chief of the Soviet General Staff in 1977, was convinced that nuclear parity had negated the utility of atomic weapons. Ogarkov suggested in 1979 that "a world war might begin and end conventionally."[179] So perhaps the conventional portion of the NATO "triad" was in fact the most important, and therefore raises the question of how to best apply operational art in the defensive to the utmost importance.

Overall, the best operational methodology for a commander to conduct a defensive campaign in the Cold War was never resolved. The Soviet attack never occurred, and the breakup of the Soviet Union has made the threat of conventional attack against NATO territory low.[180] The last ten years have been focussed around counter-

---

[177]Dwinger, *Warning Time and Forward Defence*, 30.

[178]NATO Military Committee. *MC 14/3*..., 5.

[179]English, "The Operational Art…", 18.

[180]NATO. "Active Engagement, Modern Defence," http://www.nato.int/cps/en/natolive/official_texts_68580.htm; Internet; accessed 4 March 2012.

insurgency operations, with corresponding loss of focus on large-scale conventional operations, particularly defensive operations. With Iraq complete and Afghanistan winding down, however, a focus on conventional operations is re-establishing itself. The NATO 2010 Strategic Concept "Active Engagement, Modern Defense" outlines NATO's values and strategic objectives for the next decade. The strategy states: "the conventional threat cannot be ignored. Many regions and countries around the world are witnessing the acquisition of substantial, modern military capabilities with consequence for international stability and Euro-Atlantic stability that are difficult to predict."[181] Although home soil may be unlikely to be attacked, NATO may be forced to intervene against an aggressor on the territory of an ally; the Korean peninsula stands out as a possibility. Sure to be outnumbered at the outset, "deployed forces, light in Korea… may have to fight sustained defensive campaigns before taking offensive."[182] The use of nuclear weapons is still likely to be a political constraint. A focus on large-scale, conventional defensive operations merits consideration by the modern operational commander.

What, therefore, has been gleaned from doctrinal theory, the German defeat of the French, the German defeat of the Soviets, and the debates surrounding Forward Defense that will best place the commander in a position to utilize the operational art in the unique circumstances of the defensive? Overall, these factors group themselves into space, forces, and time. These factors are expanded upon in the paragraphs below.

---

[181]Ibid.

[182]Don Holder, "Training for the Operational Level," *Parameters* Vol XVI, No.1 (1986): 6.

The space a commander has available is key to application of operational art. It is evident that more space available, the more able the commander is to utilize the mobile defense concept, which will allow for greater use of surprise and favorable force positioning. There are multiple factors at play here, however. The political arena will dominate in this realm. As demonstrated in the Manstein case study, if operating in adversary territory, it will be much more feasible politically to give up territory in order to conduct a mobile defense. If assisting an ally in defending their home territory, or even more constraining, if defending home territory, it will be much more difficult politically to justify the voluntary surrender of territory with the destruction and occupation that this would entail.

The actual geographic space of a state must also be taken into account; even if politically feasible, if a state is relatively small, in the fast-moving modern mobile era there may simply not be enough space available to conduct a mobile defense. As well, some territory is topographically more conducive to manoeuvre than others. A territory rife with natural and man-made obstacles will make a fixed defense more feasible than one with the type of wide-open, generally flat terrain conducive to mobile operations.

Force considerations are subdivided into *quality* and *quantity*. Manstein showed how a smaller force could defeat a larger one in the defensive by giving up space to force enemy culmination, than used his high-quality armoured forces to counter-attack and regain the advantage. Army Group Don had the advantage of being a homogenous, high-quality force brought up on common doctrine, language, ethos, and overall political aspirations. A force of higher quality will be more apt to succeed in mobile operations than one of lower quality. Modern coalition operations, with their mix of languages,

quality of training and equipment, national caveats, and overall disparity of commitment may make the more simple doctrinal concept of fixed defense more feasible for a coalition situation.

The quantity of forces is also important. A fixed defense implies that there are enough forces to cover all adversary avenues of approach, and apply enough firepower to cause culmination of the enemy at the front lines. Enough of a reserve force is required to block any gaps that may arise due to an enemy breach. In the mobile defense, since the distance the enemy is enticed to travel contributes to culmination, and the counter-attack forces will attack using the advantages of surprise and favorable force positioning on a flank, fewer forces are required.

A final major factor to be considered is the time available for the commander to prepare his defensive. Should ample time be available, formidable fixed fortifications can be constructed that will both provide a force multiplier to a defender, as well as providing a deterrent effect. There must also be enough time to mobilize forces to actually bring them into these fixed positions and get any reserves into position. If time is limited, however, bringing hasty mobilized forces into a non-prepared linear defense negates much of the fortification advantages gained, and a more mobile concept may therefore be more advantageous. The mobile defense can also provide delay to a superior attacker, and this time can be used to prepare fixed defenses in a rear area in the event of unexpected aggression.

The final point of consideration concerns weapons of mass destruction (WMD). As was previously mentioned, WMD can cause immediate culmination of an enemy offensive and the complete cessation of hostilities. Such use, however, is fraught with

risk, as it opens up the possibility of reciprocal use against friendly forces or civilian populations by the aggressor. The use of WMD will also bring forth international abhorrence and censure. Authorization for WMD use will remain at the political level, and the operational commander therefore needs to construct the defensive construct with conventional forces as best as possible within means available, and if the political level imposes WMD use, then so be it.

This chapter examined the modern context in order to analyse the application of operational art in a defensive scenario under modern conditions. The NATO Forward Defense concept was examined, with the conclusion that although it would have been difficult to apply the operational art, it may have been the best solution to Soviet aggression due to the political, geographical and military factors present. The use of nuclear weapons was examined, with the conclusion that it is not a panacea to the dilemmas of defensive operations, and its use is fraught with risk. The key factors of space, forces and time were then outlined as the key considerations an operational commander must consider when designing his defensive campaign using the operational art in a modern context. As with all things military, this chapter reveals that there are no firm answers when creating military plans; there are only considerations that must be taken into account by the commander so that he may apply his creativity to arrive at a solution to the unique, complex problems of designing a defensive campaign.

7. CONCLUSION

The operational art developed as a tool used by commanders to achieve success in the design and execution of campaigns to achieve strategic objectives. Chapter one outlined how the theory of operational art developed, with the main contributions coming from 19th century Prussia, the early 20th century Soviet Union, and the later 20th century United States. Seen as the most effective method to control warfare at the operational level – that level between strategy and tactics that takes strategic direction and forms the theatre campaign that drives tactical engagements – operational art has developed into a modern body of theory with key tenets, that if followed, increases the likelihood of success. Specifically, the commander needs to successfully define the operational level center of gravity, the defeat of which will lead to the achievement of the higher end state, as well as determine the campaign goals that will achieve the defeat of that center of gravity. Historically, commanders that have utilized the principles of surprise, attacking vulnerabilities on an unexpected axis, creating advantageous conditions for battle through favorable positioning of friendly forces relative to the enemy, and possession of a high level of understanding of relative friendly and enemy movement rates over time and space have been more successful operational artists.

Chapter two demonstrated the operational art practically applied in the highly successful offensive campaign conceived of by Manstein; the invasion of France in 1940. The driving factor behind the successful campaign was the creativity of Manstein to overcome time and resource constraints to achieve a rapid, overwhelming victory; by enveloping the Allied manoeuvre armies, the centre of gravity, the Wehrmacht achieved the strategic objectives provided. Manstein recognized the critical vulnerability of the

weak Meuse defenses that when exploited through deception and the unexpected approach through the Ardennes, allowed the Germans to favorably position their forces to defeat the Allied centre of gravity. By demonstrating a greater understanding of relative movement rates, the Germans fulfilled all the requirements of conducting a campaign under operational art criteria.

Chapter three demonstrated how Manstein applied the operational art in his "Backhand Blow" campaign, thus demonstrating that the operational art is applicable in a defensive context. Manstein applied his creativity to the problem of defeating the Soviet centre of gravity by envisioning a campaign that would trade space for time, freeing up the reserves that could exploit the Soviet critical vulnerabilities and then attack them. Manstein exploited the deception created by his withdrawal to attack from an unexpected direction and counterattack into the Soviet flank, thus achieving favourable relative force positioning. Finally, Manstein demonstrated mastery of time and space and relative movement rates through the complex "leapfrogging" to the rear of multiple Panzer Armies in conjunction with reinforcements to attack the Soviet centre of gravity at the moment of their culmination. Key deductions regarding the application of the operational art in the defensive vice the offensive were drawn out, which were as follows:

1) The aim of the defense must be to regain the initiative;
2) The defender needs to force culmination upon the attacker as soon as possible in order to set conditions for the counter that will regain the initiative;
3) Sufficient forces must be present to conduct this counterattack; and
4) A mobile defense is more advantageous then the fixed defense to set the conditions for successful counter-attack under certain conditions;
5) Enacting such a plan, however, will require great confidence on the part of the commander in order to be able to accept the great risk involved in enacting a mobile defense.

This knowledge provided the basis for the examination of the suitability of the application of operational art in a defensive context in the modern, nuclear era.

Chapter four examined the modern context in order to analyse the application of operational art in a defensive scenario under current conditions. The NATO Forward Defense concept was examined, with the conclusion that although it would have been difficult to apply the operational art, it may have been the best solution to Soviet aggression due to the political, geographical and military factors present. The use of nuclear weapons was examined, with the conclusion that nuclear weapons are not the panacea to the dilemmas of defensive operations, and their use is fraught with risk. The factors of space, forces and time were then outlined as the key considerations an operational commander must consider when designing a defensive campaign using the operational art in a modern context.

It was demonstrated that the operational art is applicable in a defensive context, and that there are unique considerations a commander must consider when applying the operational art to successfully design and execute a defensive campaign; these factors grouped themselves into space, forces and time. As with all things military, this paper revealed that there are no firm answers when creating such defensive campaigns. There are only considerations that must be taken into account by the commander so that he may apply his creativity to arrive at a solution to the unique, complex problems of designing a successful defensive campaign.

Conflict is alive and well in the modern era, and the signs are that there is still a possibility that a large-scale conventional conflict could draw in the Western nations, and

the price in blood and treasure will be steep if the theatre commander is unprepared. Considering the cutbacks to standing Western forces around the world and corresponding increase in military capability of possible competitors, the possibility exists that Western nations will at some point be on the defensive against one of these potential aggressors.

This paper has utilized the case study method to draw out the lessons that an operational commander can utilize to successfully apply the operational art in a defensive context; yet in general, historical study is lacking for the modern Western officer, what historical study there is generally focusses on the offensive, and the planning and practical exercises utilized to supplement (or replace) historical study generally focus on an offensive context. In light of the strong possibility that a knowledge of the defensive considerations will be required for an operational commander to be successful in future operations, these deficiencies require rectification.

The onus is on the military officer to conduct the professional development required to gain the knowledge required so that when the time comes, they will be in a position to successfully apply the lessons they have learned to arrive a suitable solution to a military problem. The best method of acquiring this knowledge short of actual combat is through in-depth historical study. Although it is beyond the scope of this paper to provide instructions on how to specifically do this, interested readers are directed to Milan Vego's "Military History and the Study of Operational Art" and John E. Turlington's "Truly Learning the Operational Art" for an in-depth analysis on how to

conduct this personal development. [183] As a supplement to these instructions, spending time analysing defensive campaigns, not just offensive ones, is a necessity for the officer conducting this professional development.

Whether or not the recommendation above is accepted, the chance of large-scale conventional combat is extant. Modern geopolitics have set conditions indicating that Western nations have a strong likelihood of spending time on the defensive in a future military campaign, at least in the opening phases. It therefore behooves the aspiring operational commander to learn the unique considerations of defensive campaigning that will allow for the most successful possible application of operational art in the defensive.

---

[183]See Milan Vego's "Military History and the Study of Operational Art," *Joint Force Quarterly* Issue 57, 2nd quarter (2010): 124-129, and John E.Turlington's "Truly Learning the Operational Art," *Parameters* (Spring 1987): 57.

BIBLIOGRAPHY

Allen, Ralph. "Piercing the Veil of Operational Art." *Parameters* Vol XVI, No.4 (1986): 23-29.

Blackwell, James A. Jr. "In the Laps of the Gods: The Origins of NATO Forward Defense." Parameters Vol XV, No. 4 (1985): 64-75.

Boyd, John. "Patterns of Conflict." Presentation, 1986. Provided by Dr. Angelo N. Caravaggio, 1 February 2003.

Canada. Department of National Defense. B-GJ-005-500/FP-000 *The Canadian Forces Operational Planning Process (OPP)*. Ottawa: DND Canada, 2008.

Canby, Steven. "NATO: Reassessing the Conventional Wisdoms." *Survival: Global Politics and Strategy* Vol XIX, No. 4 (July/August 1977): 164-168.

Caravaggio, Dr. Angelo N. "The Historical Evolution of Operational Art and Operational Command," Lecture, Canadian Forces College, Toronto, ON, November 16, 2011, with permission.

Clausewitz, Carl von. *On War*. Edited and translated by Michael Howard and Peter Paret. Princeton: Princeton University Press, 1984.

Craig, Gordon. "The Political Leader as Strategist." In *Makers of Modern Strategy from Machiavelli to the Nuclear Age*, edited by Peter Paret, 481-509. Princeton: Princeton University Press, 1986.

Dupuy, T.N. *A Genius for War: The German Army and General Staff, 1807-1845*. Macdonald and Janes: London, 1977.

Dwinger, Carl-Friedrich. *Warning Time and Forward Defence*. Kingston: Queen's University, 1984.

Echevarria II, Antulio J. "American Operational Art, 1917-2008." In *The Evolution of Operational Art*, edited by John Andreas Olsen and Martin Van Crevald. . 137-165. Oxford: Oxford University Press, 2011.

Echevarria II, Antulio J. "Clausewitz's Centre of Gravity: Changing our Warfighting Doctrine – Again!" Strategic Studies Institute, U.S. Army War College, September 2002.

Eikmeier, Dale. "Center of Gravity Analysis." *Military Review* July-August (2004); 2-5.

English, John. "The Operational Art: Developments in the Theories of War." In *The Operational Art: Developments in the Theories of War,* edited by Michael Hennessy and B.J.C. McKercher, 7-27. Westport, Conn: Praeger, 1996.

Forczyk, Robert. *Erich von Manstein: Leadership, Strategy, Conflict*. Oxford: Osprey Publishing, 2010.

Frieser, Karl-Heinz. "Panzer Group Kleist and the Breakthrough in France, 1940." In *Historical Perspectives of the Operational Art*, edited by Michael Krause and Cody Phillips, 169-182. Washington, DC: Center of Military History, United States Army, 2005.

Frieser, Karl-Heinz. "The Execution of 'Case Yellow' (Sickle Cut) Exemplified by Panzer Group Kleist (10-21 May 1940)." In *Development, Planning and Realization of Operational Conceptions in World Wars I and II*, edited by Militärgeschichtliches Forschungsamt, 57-82. Bonn: Verlag E.S. Mittler & Sohn, 1989.

Glantz, David M. "The Intellectual Dimension of Soviet (Russian) Operational Art." In *The Operational Art: Developments in the Theories of War,* edited by Michael Hennessy and B.J.C. McKercher, 125-146. Westport, Conn: Praeger, 1996.

Glantz, David M. *Operational Art and Tactics.* Fort Leavenworth: Soviet Army Studies Office, U.S. Army Combined Arms Center, 1988.

Hennessy, M, and B. McKercher. "Introduction." In *The Operational Art: Developments in the Theories of War,* edited by Michael A. Hennessy and B.J.C. McKercher, 1-5. Westport, Conn: Praeger, 1996.

Holder, Don. "Training for the Operational Level." *Parameters* Vol XVI, No.1 (1986): 7-13.

Jablonsky, David. "Strategy and the Operational Level of War: Part I." *Parameters* Spring (1987): 65 – 76.

Jurusik, Peter. "NATO's Forward 'Layer Cake' Defense – An Outdated Concept." Newport: Naval War College Paper, 1991.

Kipp, Jacob. "Two Views of Warsaw: The Russian Civil War and Soviet Operational Art, 1920-1932." In *The Operational Art: Developments in the Theories of War,* edited by Michael A. Hennessy and B.J.C. McKercher, 51-86. Westport, Conn: Praeger, 1996.

Liddell Hart, B.H. *The Other Side of the Hill: Germany's Generals, Their Rise and Fall, With their own Account of Military Events 1939-1945*. Cassell and Company Ltd: London, 1951.

Luttwak, Edward N. "The Operational Level of War." *International Security* Vol. 5, No. 3 (Winter, 1980-1981): 61-79.

Luuvas, Jay. "Thinking at the Operational Level." *Parameters* Vol XVI, No 1 (1986): 2-6.

Madsen, Dr. Chris. "Emergence of Operational Art," Lecture, Canadian Forces College, Toronto, ON, December 12, 2011, with permission.

Manstein, Erich von. *Lost Victories*. Novato, California: Presidio Press, 1982.

Mearsheimer, John J. "Maneuver, Mobile Defense, and the NATO Central Front." *International Security* Vol. 6, No. 3 (Winter 1981/82): 104-122.

Mellenthin, F. W. von. *German Generals of World War II: As I Saw Them*. Norman: University of Oklahoma Press, 1977.

Mellenthin, F. W. von. *Panzer Battles: A Study of the Employment of Armor in the Second World War***.** Norman: University of Oklahoma Press, 1956.

Melvin, Mungo. *Manstein: Hitler's Greatest General.* London: Weidenfeld & Nicolson, 2010.

Moltke, Graf Helmuth Karl Bernhad von. "Aufsatz vom 16. September 1865 'Ueber Marschtiefen,'" *Taktisch-strategische Aufsaetze*, 237. Quoted in Bradley J. Meyer, "The Operational Art: The Elder Moltke's Campaign Plan for the Franco-Prussian War." In *The Operational Art: Developments in the Theories of War,* edited by Michael Hennessy and B.J.C. McKercher, 29-50. (Westport, Conn: Praeger, 1996), 45.

NATO. "Active Engagement, Modern Defence." http://www.nato.int/cps/en/natolive/official_texts_68580.htm; Internet; accessed 4 March 2012.

NATO. *NATO and the Warsaw Pact: Force Comparisons*. NATO Information Service, 1984.

NATO Military Committee. *MC 14/3: Overall Strategic Concept for the Defense of the North Atlantic Treaty Organization Area*. 16 January 1968.

Paget, Reginald Thomas. *Manstein, His Campaigns and his Trial.* London: Collins,1951.

Record, Jeffrey. "Operational Brilliance, Strategic Incompetence: The Military Reformers and the German Model." *Parameters* Vol XVI, No.3 (1986): 2-8.

Reed, John. *Germany and NATO*. Washington D.C.: National Defense University Press Publications, 1987.

Roth, Gunter. "Operational Thinking in Schlieffen and Manstein." In *Development, Planning and Realization of Operational Conceptions in World Wars I and II*, edited by Militärgeschichtliches Forschungsamt, 7-44. Bonn: Verlag E.S. Mittler & Sohn, 1989.

Roth, Gunter. "The Campaign Plan 'Case Yellow' for the German Offensive in the West in 1940." In *Operational thinking in Clausewitz, Moltke, Schlieffen and Manstein*, edited by Roland G. Foerster, 41-56. Bonn: Verlag E.S. Mittler & Sohn, 1989.

Sadarananda, Dana V. "The Genius of Manstein: Field Marshal Erich von Manstein and the Operations of Army Group Don, November 1942-March 1943," Doctoral Thesis, Temple University,1989.

Simms, James. "Keeping the Operational Art Relevant for Canada: A Functional Approach." *In The Operational Art: Canadian Perspectives. Context and Concepts*. Edited by Allan English, Daniel Gosselin, Howard Coombs, and Laurence M. Hickey. 293-312. Kingston: Canadian Defence Academy Press, 2005.

Sheppard, Gilbert. *France 1940: Blitzkrieg in the West*. London: Osprey, 1990.

Showalter, Dennis E. "Prussian-German Operational Art, 1740-1943." In *The Evolution of Operational Art*, edited by John Andreas Olsen and Martin Van Crevald. 35-63. Oxford: Oxford University Press, 2011.

Strange, Joe. "Understanding Centers of Gravity and Critical Vulnerabilities. Part 1: What Clausewitz Really Meant by Centre of Gravity." http://www.au.af.mil/au/awc/awcgate/usmc/cog2.pdf; Internet: accessed 14 Dec 2011.

Strange, Joe. "Understanding Centers of Gravity and Critical Vulnerabilities. Part 2: The CG-CC-CR-CV Construct: A Useful Tool to Understand and Analyzed the Relationship between Centers of Gravity and their Critical Vulnerabilities." http://www.au.af.mil/au/awc/awcgate/usmc/cog2.pdf; Internet: accessed 14 Dec 2011.

Swain, Richard M. "Filling the Void: The Operational Art and the U.S. Army." In *The Operational Art: Developments in the Theories of War,* edited by Michael A. Hennessy and B.J.C. McKercher, 147-172. Westport, Conn: Praeger, 1996.

Turlington, John E. "Truly Learning the Operational Art." *Parameters* (Spring 1987): 51-64.

Vego, Milan. "Military History and the Study of Operational Art." *Joint Force Quarterly* Issue 57, 2nd quarter (2010): 124-129.

Vego, Milan. "On Military Theory." *Joint Force Quarterly* Issue 62, 3rd quarter (2011): 59-67.

United States. Department of the Army. *FM 100-5: Operations*. Washington, DC: Headquarters, Dept. of the Army, 1986.

United States. Headquarters, Department of the Army. *FM 100-5: Operations*. Washington, DC: Headquarters, Dept. of the Army, 1976.