United States Marine Corps
Command and Staff College
Marine Corps University
2076 South Street
Marine Corps Combat Development Command
Quantico, Virginia 22134 –5068

MASTERS OF MILITARY STUDIES

Schwerpunkt: *Fall Gelb* and the German Example

SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENT FOR THE DEGREE OF
MASTER OF MILITARY STUDIES

MAJOR DAVID J. FURNESS, USMC

AY 01-02

Mentor: Dr. John P. Cann, Ph.D.
Approved: _____
Date: _____

Mentor: LtCol David A. Kelley, USMC
Approved: _____
Date: _____

REPORT DOCUMENTATION PAGE

FORM APPROVED - - - OMB NO. 0704-0188

1. AGENCY USE ONLY (*LEAVE BLANK*)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED STUDENT RESEARCH PAPER

4. TITLE AND SUBTITLE

SCHWERPUNKT: FALL GELB AND THE GERMAN EXAMPLE

5. FUNDING NUMBERS

N/A

6. AUTHOR(S)

MAJOR DAVID J. FURNESS

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

USMC COMMAND AND STAFF COLLEGE
2076 SOUTH STREET, MCCDC, QUANTICO, VA 22134-5068

8. PERFORMING ORGANIZATION REPORT NUMBER

NONE

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

SAME AS #7.

10. SPONSORING/MONITORING AGENCY REPORT NUMBER:

NONE

11. SUPPLEMENTARY NOTES

NONE

12A. DISTRIBUTION/AVAILABILITY STATEMENT

NO RESTRICTIONS

12B. DISTRIBUTION CODE

N/A

ABSTRACT *(MAXIMUM 200 WORDS)*

"*Schwerpunkt*: *Fall Gelb* and the German example" is a title chosen with deliberate care. The central argument offered in this paper is that the German concept of *Schwerpunkt* forms the foundation of Maneuver Warfare theory. Therefore, since Maneuver Warfare is Marine Corps doctrine this concept must be clearly understood and properly employed if Marines are to conduct decisive operations in accordance with our doctrine. This paper will define the key doctrinal concepts of Maneuver Warfare, describe how they interrelate, and examine their historical development in classic German military thought. Furthermore, this author believes that Operation *Fall Gelb*, the German invasion of France in May 1940, provides an excellent lens through which to view Maneuver Warfare theory and more particularly the concept of *Schwerpunkt*. A campaign study of Operation *Fall Gelb* will illustrate how the proper employment of the *Schwerpunkt* at the strategic, operational, and tactical level of war produces a decisive result. Finally, this paper will examine the doctrinal inconsistencies in Marine Corps Doctrinal Publication 1, and assess whether Marines understand their doctrine well enough to execute it in the 21st century.

14. SUBJECT TERMS (KEY WORDS ON WHICH TO PERFORM SEARCH)
MANEUVER WARFARE, GERMAN MILITARY THEORY, BATTLE OF FRANCE, MAY 1940, MARINE CORPS DOCTRINE.

15. NUMBER OF PAGES: 71

16. PRICE CODE: N/A

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE:	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	

DISCLAIMER

THE OPINIONS AND CONCLUSIONS EXPRESSED HEREIN ARE THOSE OF THE INDIVDUAL STUDENT AUTHOR AND DO NOT NECESSARILY REPRESENT THE VIEWS OF EITHER THE MARINE CORPS COMMAND AND STAFF COLLEGE OR ANY OTHER GOVERNMENTAL AGENCY. REFERENCES TO THIS STUDY SHOULD INCLUDE THE FOREGOING STATEMENT.

TABLE OF CONTENTS

Foreword

"*Schwerpunkt*: *Fall Gelb* and the German example" is a title chosen with deliberate care. The central argument offered in this paper is that the German concept of *Schwerpunkt* forms the foundation of Maneuver Warfare theory. Therefore, since Maneuver Warfare is Marine Corps doctrine this concept must be clearly understood and properly employed if Marines are to conduct decisive operations in accordance with our doctrine. This paper will define the key doctrinal concepts of Maneuver Warfare, describe how they interrelate, and examine their historical development in classic German military thought. Furthermore, this author believes that Operation *Fall Gelb*, the German invasion of France in May 1940, provides an excellent lens through which to view Maneuver Warfare theory and more particularly the concept of *Schwerpunkt*. A campaign study of Operation *Fall Gelb* will illustrate how the proper employment of the *Schwerpunkt* at the strategic, operational, and tactical level of war produces a decisive result. Finally, this paper will examine the doctrinal inconsistencies in Marine Corps Doctrinal Publication 1, and assess whether Marines understand their doctrine well enough to execute it in the 21st century.

Chapter 1
Defining *Schwerpunkt*

In the first chapter of the *United States Marine Corps Warfighting Concepts for the 21st Century* decisive action is defined as action "which leads directly to the imposition of our will upon the enemy. In situations where a great deal is at stake, this will often require depriving the enemy of all his means of effective resistance."[1] In Marine Corps Doctrinal Publication (MCDP) 1-0 *Marine Corps Operations* decisive action is further defined as follows: "Decisive action creates an environment where the enemy has either lost the physical capability or his will to resist."[2] While these two documents describe concepts that are meant to define the way the Marine Corps views warfare in the 21st Century, these ideas are not new. In the 19th Century, Carl von Clausewitz, in his classic work *On War,* described war in this manner: " War is thus an act of force to compel our enemy to do our will...to secure that object we must render the enemy powerless, and that, in theory, is the true aim of warfare."[3] This example is cited to illustrate a point – warfare while ever changing remains fundamentally unaltered in the result that it seeks. For all the advances in technology, warfare still seeks to " compel the enemy to do our will" while seeking a decisive result.

Decisiveness is a pillar of our warfighting doctrine – Maneuver Warfare. MCDP-1 *Warfighting* asserts the following: "To win, we must focus combat power towards a decisive aim."[4] Naval Doctrine Publication (NDP) 1, a U.S. Navy doctrinal publication signed by both the Chief of Naval Operations and the Commandant of the Marine Corps, addresses decisive action in this manner: " Success in war is the result of decisive action that destroys the enemy's will or capacity to resist."[5] Maneuver Warfare requires the

proper understanding and integration of several key concepts to achieve decisive results. The fundamental concepts of maneuver warfare are – center of gravity, critical vulnerability, focus of effort, and main effort. These concepts are articulated using a mechanism called the commander's intent, which is an expression of the commander's integration of these four concepts aimed at decisive action.

To understand how these concepts are employed we must first define them, and then illustrate how they relate to each other. The term center of gravity refers to a source of strength, something the enemy must retain in order to remain a threat. MCDP-1 describes a center of gravity as "fundamental sources of capability."[6] Clausewitz describes the term as "the hub of all power and movement, on which everything depends. That is the point against which all of our energies should be directed."[7] Since this entity is a source of strength, the enemy will protect it and make it resilient to our actions. We must therefore look for an advantage, either positional or spatial to attack this source of strength. We gain this advantage through the exploitation of a critical vulnerability.

A critical vulnerability is a relative enemy weakness that we can exploit to destroy the enemy's center of gravity. NDP-1 describes this relationship in the following manner: " Opportunities to access and destroy a center of gravity are called critical vulnerabilities. To deliver a decisive blow to the enemy's center of gravity, we must strike at objectives affecting the center of gravity that are both critical to the enemy's ability to fight and vulnerable to our offensive actions."[8] While there may be several vulnerabilities that endanger the enemy's center of gravity, we need to focus on only one. This enhances both unity of effort and simplicity, and allows our forces to avoid strength, exploit weakness, and direct overwhelming combat power at a vulnerability that is the

'most critical' in order to destroy the enemy's center of gravity.[9] The destruction of the enemy's center of gravity is decisive, and to accomplish this aim we must utilize the twin concepts of the focus of effort and main effort.

The focus of effort is the overall aim of the operation – the primary objective. This concept harmonizes battlefield activities by concentrating all our resources and energy on that primary objective. Consistent with our doctrine, our focus is always on "the critical vulnerability that will expose the enemy's center of gravity" to destruction.[10] The focus of effort not only provides a common object for the entire force it also helps harmonize the myriad of activities that occur in modern war. Every action and battlefield activity now has a focus. This focus facilitates overall command and control as well as coordination between subordinate units. Further unity of effort is achieved by assigning an element of the force the responsibility of accomplishing this primary objective – this unit is the main effort.

The main effort is the unit whose action will lead directly to the destruction of the enemy's center of gravity. It is a focal point for the concentration of combat power. NDP-1 states that "there is only one main effort at a time and it is always directed against the focus of effort."[11] The main effort receives overwhelming support from every combat, combat support, and combat service support unit on the field. Faced with a changing situation adjustments may be made in method, but every unit is still obligated to support the main effort because its success is central to the overall success of the entire operation. Therefore, the concept of the main effort increases implicit coordination between units further facilitating initiative and positive command and control.

To achieve decisive action a commander must integrate these four concepts into his operational design. According to MCDP 1-0 he does this through the use of the Commander's Battlespace Area Evaluation (CBAE). The "CBAE is the commander's personal vision based on his understanding of the mission, the battlespace, and the enemy." [12] The CBAE analyzes the battlespace, friendly and enemy centers of gravity and critical vulnerabilities, the commander's critical information requirements, and describes his intent. The most important element of CBAE is the commander's intent – a verbal expression of how he will achieve a decision that leads to the desired endstate for the operation. [13] MCDP-1 states that " a clear expression and understanding of intent is essential to unity of effort."[14] While Marine Corps doctrine agrees that the commander's intent needs to be "clear, concise, and easily understood" there is little agreement on the precise content of commander's intent.[15] MCDP 1 stresses that intent describes "the purpose" of the operation – the *why*, while MCDP 1-0 focuses on "how the commander envisions achieving a decision as well as the end state, conditions or effects that, when satisfied or achieved, accomplish the purpose."[16] If intent is to describe 'how the commander envisions achieving a decision" then it must place the purpose into the larger context of the operation. Therefore, a commander's intent should identify the enemy's center of gravity and the critical vulnerability that will expose it. It should then describe the overall focus of effort, designate a main effort, and articulate the desired endstate for the entire force. The integration of these four concepts places the purpose of the operation into a larger context thereby enhancing unity of effort.

The commander's intent is fundamental to our philosophy of decentralized command and control – mission orders. For any plan to survive contact with the enemy,

subordinate leaders must exercise initiative in the form of battlefield adjustments. These adjustments are made by subordinate leaders and allow a plan to remain relevant in the face of a rapidly changing and chaotic environment. The commander's intent harmonizes and coordinates subordinate initiative by establishing a context for its use. All decisions are viewed through the prism of the commander's intent, and the main effort. These two concepts provide the glue that holds our decentralized command and control system together.

Now that we have described these concepts and how they relate with one another the question arises – why the German example? The answer is quite simple – Germany was the only nation to institutionalize the concepts of maneuver warfare as modern military doctrine.[17] The above-mentioned concepts evolved from the Prussian military reform movement following the disasters at Jena and Auerstadt in 1806. Napoleon's annihilation of the Prussian Army furnished the impetus for internal analysis and reform. Gerhard Johann David von Scharnhorst was at the center of this reform movement, which advocated significant improvements in Prussian military education, training, and doctrine designed to meet the challenge of Napoleon's nation-in-arms. Prussia, surrounded by hostile neighbors, needed a tactical doctrine that produced decisive results, but more importantly quick results. Scharnhorst combined the tactical concepts found in Fredrick the Great's famous *Instructions to His Generals* with a devotion to educational enlightenment called *Bildungsprinzip* to improve German tactical doctrine and develop the modern concept of military professionalism. [18]

Carl von Clausewitz, who served under Scharnhorst, refined these ideas into the most complete theory of warfare in his classic dissertation *On War.* Clausewitz first

explained the concept of Schwerpunkt, or center of gravity, in *On War*. This concept was continually refined throughout the mid -19th and early 20th centuries by German military theorists and eventually encompassed the four terms we defined earlier – center of gravity, critical vulnerability, focus of effort, and the main effort.[19] This concept, S*chwerpunkt*, was the key to German decisive operations for more than 100 years, and was borrowed during our own military reform movement in the early 1980s and became a central element of our maneuver warfare theory.

In *Doctrine and Dogma*, Martin Samuels discusses the danger of adopting a foreign approach to war without understanding the value system in which the doctrine was based. In addition to the nuances of language and culture, this value system includes command relationships, training, and other activities that affect a military force, but which may not be discernable when translating a tactical doctrine. The danger involved in adopting doctrinal concepts without a complete understanding of this value system is an approach to war that is a flawed hybrid.[20] MCDP-1 describes doctrine as a "particular way of thinking about war and a way of fighting. It also provides a philosophy for leading Marines in combat, a mandate for professionalism, and a common language."[21] To apply Maneuver Warfare properly, a theory of war that borrowed liberally from the German example, all Marines need to understand the historical development of the concept of *Schwerpunkt* from a German perspective. This will facilitate a better understanding of this fundamental concept, which is the key to decisive action, as well as the execution of a decentralized command and control philosophy.

On 10 May 1940, three German Army Groups, divided into 27 Corps with 112 divisions, crossed the Belgian, Dutch, and French borders launching Operation *Fall*

Gelb.[22] In six weeks, the German Wehrmacht defeated a numerically and materially superior Allied force by concentrating overwhelming combat power against a critical vulnerability (Boundary between French 9th and 2d Armies at Sedan), and attacking through a decisive point (Sedan) to destroy the enemy's center of gravity (French First Army Group). This campaign brilliantly illustrates the proper employment and integration of the German concept of *Schwerpunkt*. Additionally, this campaign illustrates all the elements of the Marine Corps concept of Single Battle. Present in this operation are the use of shaping operations to set conditions for success, a multi-axis attack to increase the operational tempo and preserve freedom of action, and the combination of simultaneous and sequential operations throughout the depth of the battle space. For these reasons, this campaign will be used to demonstrate the proper application of the concept of *Schwerpunkt* at the strategic, operational, and tactical levels of war, as well as illustrating the deficiencies in the Marine Corps' understanding of this important Maneuver Warfare concept.

Finally, we will examine how these four fundamental concepts – center of gravity, critical vulnerability, focus of effort and main effort – are understood and employed in the operating forces of the Marine Corps. This paper will illustrate how a poor understanding of the relationship between these fundamental Maneuver Warfare concepts contribute to the failure to apply our doctrine properly. The failure to concentrate overwhelming combat power in a main effort that is aimed at the enemy's center of gravity through exploiting the critical vulnerability endangers our ability to achieve decisive action in battle. This paper will add clarity to Marine Corps doctrine, and

increase the overall understanding of these concepts throughout the Corps, thereby improving the Marine Corps ability to achieve decisive action.

---

[1] United States Marine Corps, *United States Marine Corps Warfighting Concepts for the 21st Century* (Washington, D.C.: Department of the Navy, 2001), I-9. Cited hereafter as USMC, *Warfighting Concepts.*
[2] United States Marine Corps, *MCDP1-0: Marine Corps Operations* (Washington, D.C.: Department of the Navy, 2001), 6-17. Cited hereafter as USMC, *Operations.*
[3] Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), 75.
[4] United States Marine Corps, *MCDP-1: Warfighting* (Washington, D.C.: Department of the Navy, 1997), 45. Cited hereafter as USMC, *Warfighting.*
[5] Department of the Navy, *Naval Doctrinal Publication 1: Naval Warfare* (Washington, D.C.: Department of the Navy, 1994), 35. Cited hereafter as DoN, *Naval Warfare.*
[6] USMC, *Warfighting*, 45.
[7] Clausewitz, 596.
[8] DoN, *Naval Warfare*, 35.
[9] DoN, *Naval Warfare*, 37.
[10] DoN, *Naval Warfare*, 37.
[11] DoN, *Naval Warfare*, 38.
[12] USMC, *Operations,* 6-10.
[13] USMC, *Operations,* 6-12.
[14] USMC, *Warfighting*, 90.
[15] USMC, *Operations, 6-12.*
[16] USMC, *Operations,* 6-12.
[17] William s. Lind, *Why the German Example?*, *Marine Corps Gazette*, June 1982, 60.
[18] Charles Edward White, *The Enlightened Soldier: Scharnhorst and the Militarische Gesellschaft in Berlin, 1801-1805*, (New York: Praeger, 1989), xiii.
[19] Bruce I. Gudmundsson, *Military Concepts: The Main Effort, Tactical Notebook*, March 1993, 1.
[20] Martin Samuels, *Doctrine and Dogma: German and British Infantry Tactics in the First World War* (New York: Greenwood Press, 1992), 5.
[21] USMC, *Warfighting*, 56.
[22] Ernest R. May, *Strange Victory: Hitler's Conquest of France* (New York: Hill and Wang, 2000), 474-475.

Chapter 2
SCHWERPUNKT - Its Historical Development

The central concept in German operational and tactical doctrine was this idea of a *Schwerpunkt* – a focus for decisive action. This chapter presents the evolution of this complex concept from the embryonic ideas expressed by Fredrick the Great in his *Instructions for his Generals* in 1748 to the formalized armored doctrine of *The Instruction for the Employment of the Panzer Division* in 1938. For almost two hundred years, German doctrine sought rapid decision in battle. In the pursuit of this aim, Germany developed a concept that focused overwhelming combat power on an objective that would achieve a decisive result as quickly as possible.

Fredrick the Great

Napoleon, while reflecting upon the success of his military career, often cited the campaigns of Alexander, Hannibal, Caesar, Turenne, and Fredrick the Great as influential examples of the operational art. "The history of their campaigns," he contended, "would be a complete treatise on the art of war." He also argued that no one could hope "to master the higher branches of the art of war except through experience and the knowledge of the campaigns of the Great Captains."[1] While Caesar and Turenne wrote of their experiences in war, Fredrick was the only Great Captain that was a prolific and analytical writer. He wrote on nearly every aspect of military activity, which along with his superb record on the field of battle makes him a very influential commentator on war in the eighteenth century.[2] David Chandler makes the point that Napoleon "drew much of his philosophy from the precepts of Fredrick the Great's realistic, brutal and calculating approach to warfare." [3] Additionally, Clausewitz, who was trying to explain

the genius of Napoleon's style of warfare in his classic *On War*, frequently used examples of Frederick's campaigns while explaining a particular element of his theory of war. For these reasons an examination of the historical lineage of *Schwerpunkt* must begin with the ideas of Fredrick the Great.

Eighteenth century warfare was not designed to be decisive. The cost of raising an army and the time required to train it were significant. As a result, battle was usually not a commander's first option and maneuver was seen as a very desirable alternative to the "bloody decision" of battle. However, Frederick's concept was much more aggressive than the prevailing view of his contemporaries, and he routinely sought decision in battle.[4] In his *Instructions for his Generals* Fredrick II states: "Battles decide the fate of a nation. In war it is absolutely necessary to come to decisive actions either to get out of the distress of war or to place the enemy in that position... a general will never give battle if it does not serve some important purpose."[5] Later in his *Instructions* Fredrick adds: "You must compel the enemy to do that which is contrary to his wishes and best interests... our wars must be short and lively, since a prolonged conflict is not in our interest."[6]

In these previously cited examples, Fredrick begins to express the idea of decisive battle. Furthermore, he links this decisive result to an "important purpose" which we can surmise is the overall objective of the campaign. Here we begin to see the linkage between the military and political goals that would become the foundation of Clausewitz's theory eighty years later. In the chapter entitled " The Anatomy of Battle", Fredrick begins to describe how to achieve this decisive result. He states: "As a matter of prime importance in the attack, it must be pointed out that the entire line fall upon the

enemy's throat with its united power, not piecemeal or with one regiment after the other, so that the entire line drives into the enemy all at once. When the great wall closes in this manner and simultaneously approaches the enemy with impetuosity, it is impossible to withstand it."[7] This passage may be the first description of the concept of *Schwerpunkt* in German military literature. Fredrick describes a concentrated or "united" attack aimed at the "throat" or a critical vulnerability in order to destroy the center of gravity of the enemy force – his main body. He then alludes to coordination and timing issues by using the terms "simultaneously" and "not piecemeal". Later in the chapter, Fredrick describes how fires will support the decisive attack: "A prudent general will be sure to provide the attack wing with a great preponderance of artillery to bombard the portion of the position under attack and pave the way for his troops to victory."[8] Here we have the concept of providing overwhelming support for the *Schwerpunkt* described as the way to ensure "victory". The modern construct of this concept was formulated by Fredrick and would be further developed and refined by Napoleon during the next century.

Napoleon

In the prosecution of war, Napoleon followed no closely ruled patterns - each campaign was unique. However, he did believe in certain fundamental ideas that guided his conduct during every campaign.[9] Napoleon expressed five principles for opening a campaign, and they parallel several of the tenets of the *Schwerpunkt* concept. First: " An army must have only a single line of operation; that is to say, the target must be clearly defined and every possible formation directed toward it. The ultimate objective must be clear from the start, and men must not be wasted on unnecessary secondary operations." Second: "The main enemy army should always be the objective; only by destroying an

opponent's field forces could he be induced to give up the struggle." Third: "The French Army must move to place itself on the enemy's flank and rear." Fourth: "The French Army must always strive to turn the enemy's most exposed flank – that is to say, cut him off from his depots, neighboring friendly forces, or his capital." Fifth: " The Emperor stressed the need to keep the French Army's own lines of communication both safe and open."[10]

These five principles describe a concentrated attack against the flank or rear of the enemy main body to cut him off from his base of operations and annihilate him. All the elements of *Schwerpunkt* are present in these five principles. Napoleon always focused on the enemy's main body as a center of gravity. He also consistently concentrated his combat power on the enemy's flank or rear by employing his famous *"manoeuvre sur les derrieres"* no less than thirty times between 1796 and 1815.[11] This was his focus of effort. The enemy's flank or line of communication was the critical vulnerability he used to unhinge the force so he could destroy it, and a reinforced *Corps de Armee* was his main effort and provided his *le coup de force* or master stroke.[12] The decisive results achieved with these particular maneuvers influenced generations of military theorists especially in Germany where the decisive battle became inextricably linked to a strategic envelopment. Clausewitz, whose analysis of Napoleon's method of warfare gave birth to the term *Schwerpunkt*, contributed more than any other eighteenth century military theorist to the concept of decisive battle and its development.

Clausewitz

In Chapter Twenty-seven, Book Six of *On War*, Clausewitz begins a description of *Schwerpunkt*:

> For this reason, the blow from which the broadest and most favorable repercussions can be expected will be aimed against that area where the greatest concentration of enemy troops can be found; the larger the force with which the blow is struck, the surer its effect will be. A center of gravity is always found where the mass is concentrated most densely. It presents the most effective target for a blow; furthermore, the heaviest blow is that struck by the center of gravity.[13]

This passage describes *Schwerpunkt* as the "greatest concentration of enemy troops," or as Napoleon would say, the enemy's main body. It also describes the force concentrated to attack the enemy's main body as the friendly center of gravity. Therefore, Clausewitz gives this term a dual meaning with respect to both colliding forces – each possesses and employs a center of gravity. In Chapter Twenty-eight of Book Six, he again stresses the need to concentrate as much force as possible in *our center of gravity* or what today we would call *our main effort*. "A major battle in a theater of operation is a collision between two centers of gravity; the more forces we can concentrate on our center of gravity, the more certain and massive the effect will be."[14] Here Clausewitz links the ruthless concentration of assets in the "main effort" as a precondition to "massive" or decisive results.

Later in Chapter Twenty-eight, Clausewitz states that an enemy's lines of communication are not a center of gravity but merely a means through which a commander attacks the enemy's center of gravity from a position of advantage – a vulnerability. In the context of a defensive battle he states: " In most cases, therefore, an action [by the defender] against lines of communication will be totally ineffective if the

enemy is bent on gaining a decision – nor will it help bring about a decision for the defender."[15] Clausewitz believed that a defender who concentrated his entire force in a determined attack on the flank of the enemy's main body stood the best chance of achieving decisive results. In Chapter Four of Book Eight, Clausewitz reaffirmed the importance of focusing energy on a decisive objective, which he concludes is the enemy's main body. He states: "Blow after blow must be aimed in the same direction: the victor, in other words, must strike with all his strength and not just against a fraction of the enemy. Not by taking things the easy way...but by constantly seeking out the center of his power."[16] While combat power may be concentrated on a vulnerability its destruction is not the principal objective of that action, but only a tactic used to gain leverage vis-a-vis the enemy's center of gravity. The vulnerability's importance or criticality is based only on its relationship to the center of gravity. Therefore, a center of gravity may be surrounded by several vulnerabilities, but only one is critical. The location of this vulnerability in relation to the center of gravity and its importance to the enemy's source of strength makes it decisive – a decisive point.

Jomini and the Decisive Point

Clausewitz and Jomini were peers, and while their description of warfare is very different, both their theories of war contributed to the maturation of the *Schwerpunkt* concept. Jomini developed the concept of the decisive point and its relationship to the concentration of force and decisive action. In Jomini's *The Art of War,* he describes the following maxims:

1) To throw by strategic movements the mass of an army, successively, upon the decisive points of a theater of war, and also upon the communications of the enemy as much as possible without compromising one's own.

2) To maneuver to engage fractions of the hostile army with the bulk of one's forces.

3) On the battlefield, to throw the mass of the forces upon the decisive point, or upon that portion of the hostile line which it is of the first importance to overthrow.

4) To so arrange that these masses shall not be only thrown upon the decisive point, but that they shall engage at the proper time and with ample energy. [17]

Jomini defines a decisive point as an enemy flank or terrain feature the destruction or seizure of which is "capable of exercising a marked influence either upon the result of the campaign or upon a single enterprise."[18] His second maxim clearly stresses the importance of attacking strength through weakness or at least from a position of advantage, while Clausewitz continually emphasized that the destruction of the enemy's center of gravity must remain the principal aim of any campaign. He acknowledged that the application of concentrated combat power from a positional advantage vis-a-vis this "hub of all power " was the primary method of achieving this aim, and also a decisive point. Clausewitz describes the decisive point in the following manner:

> Strategy decides the time when, the place where, and the forces with which the engagement is to be fought, and through this threefold activity exerts considerable influence on its outcome...It thus follows that as many troops as possible should be brought into the engagement at the decisive point...
>
> To achieve strength at the decisive point depends on the strength of the army and on the skill with which this strength is employed...Consequently, the forces available must be employed with such skill that even in the absence of absolute superiority, relative superiority is attained at the decisive point.
>
> The best strategy is always to be very strong: first in general, and then at the decisive point.[19]

Jomini and Clausewitz both described a decisive point that was positioned relative to the enemy center of gravity so that its destruction or seizure would facilitate the destruction of the center of gravity. This point was a vulnerability critical or decisive only in its relation to the center of gravity. While not specifically an element of the concept of *Schwerpunkt* the decisive point is consistent with the modern description of a critical vulnerability, and therefore an implied element of this vital construct.

The historical development of the *Schwerpunkt* was continued during the modern era in every German Army doctrinal publication. This concept was clearly understood by everyone in the force as the traditional German approach to war, and provided clarity and consistency to their planning process, as well as in their prosecution of war. We will now examine how this traditional concept was embraced by German doctrine from 1917 to 1945.

German Doctrine 1917-1945

On 1 January 1918 the Imperial German Army High Command published *The Attack in Positional Warfare.* This document emphasized the changes in German tactical doctrine as a result of the "new" conditions present on the western front.[20] This manual focused specifically on the "attack in position warfare with a limited objective and the offensive battle leading ...to the breakthrough."[21] In the first section of the manual addressing offensive action, the importance of the *Schwerpunkt* to the success of every attack was stressed:

> ***Every attack must have a center of gravity.*** (Emphasis in the original) On this must be calculated the grouping of the forces, the breadth of the front, the concentration of artillery, trench mortars and other means of warfare, and the assembly and engagement of reserves.[22]

The importance of concentrating all available resources, especially firepower and reserve forces, is unmistakable. A breakthrough battle on the western front was difficult and required the coordination of all arms to sufficiently weight the *Schwerpunkt* (Main Effort) and ensure success. This coordination is stressed throughout the manual and is the first example of modern combined arms doctrine. Here are some passages that illustrate the need to concentrate and coordinate in support of the *Schwerpunkt*:

> The attack ...requires that the troops should be really commanded and that careful and detailed instructions are given to ensure the co-operation of all arms.[23]
>
> The stronger the resistance, the more the *concentrated fire* (emphasis in the original) of numerous pieces [of artillery and mortars], heavy ones, is required.[24]
>
> Numerous machine guns must be attached from the very first to the troops leading the assault.[25]
>
> The assaulting infantry must be in the enemy's position simultaneously with the last rounds from their artillery and trench mortars.[26]
>
> All flights (of aircraft) which are available during the infantry battle, and also reconnaissance flights which are not being used to support the *Schwerpunkt* should be put in as battle flights to engage ground targets. [27]

The conditions on the western front required focused and coordinated fires in support of the *Schwerpunkt* to break in, then through, the position. The focus of the attack was the enemy rear area. Martin Samuels, in *Doctrine and Dogma*, describes the aim of this new attack in the following manner: " While the growth in firepower had made frontal attacks all but impossible, the greater expenditure of ammunition had made an army's lines of communication more critical. Following the concept of the *Schwerpunkt,* all attacks should therefore be aimed at enveloping the flanks and rear of

the enemy." [28] The essence of these tactical concepts is really consistent with the maxims expounded by Fredrick the Great and Napoleon. The Imperial General Staff simply modified a time tested and internalized concept to fit local conditions – the underlying understanding of the concept never changed. The local conditions of the western front may have required greater coordination between different arms than was previously the case, but the concept of aiming the *Schwerpunkt* (main effort) at the enemy's center of gravity and ruthlessly concentrating combat power in support of it remained valid. The doctrinal concepts expressed in *The Attack in Positional Warfare* allowed the Imperial German Army to bequeath a modern combined arms doctrine to its inter-war successor, while modernizing its concept for decisive action - the *Schwerpunkt.*

The primary doctrinal publication of the Reichswehr during the inter-war period was Army Regulation 487, *Fuhrung und Gefect der verbundenen Waffen,* or *Leadership in Battle with Combined Arms.*[29] This document reflected, both the wartime experiences of the German Army during the World War, as articulated in *The Attack in Positional Warfare*, and the strong traditions of Moltke and Schlieffen. Hans von Seeckt, Chief of Staff of the Reichswehr, oversaw the writing of this manual and ensured that it possessed a strong offensive spirit. In his book, *Thoughts of a Soldier*, von Seekt describes the *Schwerpunkt* in the following manner:

> The destruction of the enemy is the goal of war, but there are many roads to this goal. Every operation must be dominated by one simple clear idea. Everybody and everything must be subordinated to this idea. Decisive force must be thrown in at the decisive point; success is to be purchased only with sacrifice.[30]

Unlike the French and British armies of the inter-war period, German doctrine viewed the defensive struggles of the western front, not as a military revolution, but as an

aberration. While other European armies focused their doctrine on defensive operations the Germans remained oriented on the offense and decisive action. *Leadership in Battle with Combined Arms* stressed the *Schwerpunkt* concept in the following manner:

> The majority of the force must be employed at the decisive point. From the outset, the units must be distributed accordingly so every attack contains its *Schwerpunkt*. The attack alone brings the decision...Especially effective is the envelopment of one or both flanks and to attack the enemy's rear. In this way, the enemy can be destroyed.[31]

Once again this document retained the traditional view of the *Schwerpunkt* concept and its method of employment. The focus on combined arms was evident from its title, and it devoted countless pages explaining the co-operation between the primary arm of decision, the infantry, and the multitude of arms now organic to these units, such as artillery, mortars, machine guns, and flame throwers. Additionally, the tactical use of both aircraft and tanks was stressed. [32] *Leadership in Battle with Combined Arms* also stressed the role of the leader in developing the *Schwerpunkt* and its employment. " It is a special art of leadership to unite all available force at the point of decision. Our own inferiority of numbers must often be equalized by superior employment." [33] One can see the development of a doctrine that emphasized the concentration and co-operation of all arms to generate overwhelming combat power vis-à-vis the enemy's center of gravity. This overwhelming power, *Schwerpunkt (main effort)*, was then directed through a decisive point, an enemy vulnerability, in order to destroy the enemy's *Schwerpunkt (center of gravity)*. German doctrine places the responsibility for this action with the commander. Leadership is the key, and the decisiveness of the commander is continually stressed. These doctrinal concepts remained the foundation of the German way of war during the early 1930s, and provided a well-documented and uniform body of operational

thought as they embarked on their own military revolution – the development of a combined arms armored doctrine.

The basic German doctrinal manual of the Second World War, *Truppenfuhrung*, discussed the concept of the *Schwerpunkt* in paragraph 323, under the general heading of "attack." The concept is explained as follows:

> Every attack requires coordinated direction; it is not permitted to fall down in individual attacks. The main force (*Schwerpunkt*) and the mass of the munitions are employed in the decisive area. In an envelopment these forces are placed on the enveloping flank, that is, ordinarily there, where, according to the intention, the situation and the terrain, the effect of all arms can be utilized for the success of the action. In this area the attack is decisively executed. The decisive attack is distinguished by: 1) narrow zones, 2) provisions for the unified fire of all arms, including that of neighboring zones, 3) the reinforcement of fires by means of especially allotted heavy infantry weapons and artillery. During the execution of the attack fires are increased, tanks and reserves are employed. The choice of the area for decisive action is influenced by the artillery, and suitability of the terrain for continued tank operations.[34]

This paragraph captures the essence both of Clausewitz's definition and the traditional German use of the concept. It stresses the requirement for coordination of overwhelming fires from organic assets and those of adjacent units supporting the attack. It also refers to the massing of men and logistics at the decisive area, which is described as the exposed flank of the enemy main body. This reinforces the idea expressed in both *Leadership in Battle with Combined Arms* and *Attack in Positional Warfare* that the *Schwerpunkt* is directed at the enemy's center of gravity through a critical vulnerability that was referred to as the decisive point. Thus the German understanding of the concept of the *Schwerpunkt* remains remarkably clear and consistent from its inception during the reign of Fredrick the Great, through the upheavals of the World War, and the revolutionary change of the inter-war period. The speed and shock of the German Panzer

forces of the Second World War would alter the method but not the meaning of these important concepts.

The birth of Germany's Panzer forces was seen by many as a revolution in military affairs. While advances in technology certainly affected armored doctrine, the ideas expressed in *The Instruction for the Employment of the Panzer Division,* dated 1 June 1938, remain remarkably consistent to those expressed in *Truppenfuhrung*. In paragraphs 41 to 43 the *Schwerpunkt* is defined in terms of armored warfare:

> The Tank attack by the Panzer Division brings about the decision in battle. The division's combat is therefore decisively influenced by the possibilities for action of the Panzer Brigade, whose great attack strength and mobility is surprising, and is to be used in deep thrusts at sensitive enemy positions. The employment and action of the Panzer Division's remaining troops must be determined by this basic principal...to support the Panzer attack - when necessary to secure the flanks – and to use their success through close coordination of all arms. The assault of the Panzer Division requires uniform execution; it can not be allowed to degenerate into single attacks. The objective of the attack, which is to rapidly obtain the combination of all weapons in the decisive area, is to be defined clearly. In the regulations, the Schwerpunkt is to be formed in the decisive area, where the Panzers find favorable terrain and combat conditions.[35]

Once again the term *Schwerpunkt* refers to an overwhelming concentration of combat power (Panzer Brigade) supported by all "remaining troops" against a clearly defined decisive area. The Panzer forces allowed the "decisive attack" to occur rapidly and in greater depth, but the underlying doctrinal concepts remain unchanged. Technological advances did not alter the fundamental principals of German doctrine to any large degree. It simply made it more decisive.

However, the speed of these forces increased the tempo of operations, which required a decentralized command and control philosophy. The benefit of a doctrine that

focused "all energy" on decisive action was that it provided built in decision-making guidance that helped coordinate initiative. The German orders process, referred to as *Auftragstaktik,* was built on preexisting command and control procedures. The concept of the *Schwerpunkt*, vital to the concentration and focus of combat power was even more important in providing direction and guidance for these decentralized command and control procedures. The next chapter will examine how these four fundamental concepts embodied in the *Schwerpunkt* provided the glue that prevented mission-type-orders from unraveling under the pressure of combat.

---

[1] Fredrick II, *Fredrick the Great and the Art of War*, Edited and Translated Jay Luvaas (New York: The Free Press, 1966), 1.
[2] Fredrick II, 2.
[3] David G. Chandler, *The Campaigns of Napoleon: The Mind and Method of History's Greatest Soldier* (New York: Macmillan Publishing Company, 1966), 141.
[4] Fredrick II, 139.
[5] Fredrick II, 139.
[6] Fredrick II, 140-141.
[7] Fredrick II, 153.
[8] Fredrick II, 157.
[9] Chandler, 161.
[10] Chandler, 162.
[11] Chandler, 163.
[12] Chandler, 184.
[13] Carl von Clausewitz, *On War*, edited and translated Michael Howard and Peter Paret (Princeton: Princeton University Press, 1984), 485-486.
[14] Clausewitz, 488.
[15] Clausewitz, 491.
[16] Clausewitz, 596.
[17] Antoine-Henri Jomini, *The Art of War*, trans. H.H. Mendell and W.P. Craighill (1862; rpt. Westport, Conn.: Greenwood Press, 1971), 63.
[18] Jomini, 78.
[19] Clausewitz, 194-97, 204.
[20] Timothy T. Lupfer, *The Dynamics of Doctrine: The Changes in German Tactical Doctrine During the First World War* (Fort Leavenworth, Kansas: Combat Studies Institute, 1981), 41.
[21] German General Staff, *The Attack in Positional Warfare*, 1 January 1918, trans. BEF Intelligence (GHQ, 1918), 1. Hereafter cited as *Attack.*
[22] *Attack*, 2.
[23] *Attack*, 1.
[24] *Attack*, 3.
[25] *Attack*, 58.
[26] *Attack*, 60.
[27] *Attack*, 95.

[28] Martin Samuels, *Doctrine and Dogma: German and British Infantry Tactics in the First World War* (New York: Greenwood Press, 1992), 62.
[29] James S. Corum, *The Roots of Blitzkrieg: Hans von Seeckt and German Military Reform* (Lawrence, Kansas: University Press of Kansas, 1992), 39.
[30] General Hans von Seeckt, *Thoughts of A Soldier,* trans. Gilbert Waterhouse (London: Ernest Benn Limited, 1930), 24.
[31] Truppenamt T-4[Training Section], Heeresdienstvorschrift 487, *Fuhrung und Gefect der verbundenen Waffen*, (Berlin: 1923), trans. BEF Intelligence (GHQ, 1928), Part 1, 226-228. Hereafter cited as *Fuhrung und Gefect.*
[32] Corum, 42.
[33] *Fuhrung und Gefect, 12.*
[34] Chef der Heeresleitung, Heeresdienstvorschrift 300/1/2, *Truppenfuhrung,* (Berlin: 1933), trans. U.S. Army Command and General Staff School (CGSS, 1936), para. 323. Hereafter cited as *Truppenfuhrung.*
[35] Chef der Heeresleitung, *The Instruction for the Employment of the Panzer Division*, (Berlin: 1938), trans. R.L. DiNardo, para. 41-43.

Chapter 3
Schwerpunkt and Commander's Intent: The Glue of Decentralized Command and Control

MCDP-1 states that "Maneuver warfare is a warfighting philosophy that seeks to shatter the enemy's cohesion through a variety of rapid, focused, and unexpected actions..." [1] Later in the same chapter, MCDP-1 describes the command and control philosophy that facilitates the execution of "rapid, focused, and unexpected actions." MCDP-1 states that: " First and foremost, in order to generate the tempo of operations we desire and to best cope with the uncertainty, disorder, and fluidity of combat, command and control must be decentralized."[2] Before we can address the critical influence of the *Schwerpunkt* and the commander's intent on decentralized command and control, we must first ask ourselves - What is command and control?

MCDP-6 *Command and Control* states: "Command and control describes a system - an arrangement of different elements that interact to produce effective and harmonious actions."[3] It describes the basic elements of a command and control system as people, information, and a command and control support structure. Information enhances situational awareness, which forms the basis for a decision, people (commanders) make the decision, and a support structure (the orders process and distribution means) facilitates the dissemination of that decision. In *Fighting Power,* Martin Van Creveld states: "From the point of view of a command system, modern war is distinguished above all by its speed and by the need for close cooperation between many kinds of specialized troops. This means that, other factors being equal, a command

system that allows for initiative on the lowest level, and for the intelligent cooperation between subordinate commanders, is likely to be superior to one that does not."[4] The authorization and coordination of initiative at its lowest level is the essence of decentralized command and control. This chapter will focus on the decentralized command support structure created by the German Army in the early 20th century to deal with the increased tempo of modern combat operations and the role that the *Schwerpunkt* and commander's intent played in this system.

Historical Development

The Prussian army discovered during both the Austro-Prussian War (1866) and the Franco-Prussian War (1870-1871) that the increased lethality of modern weapons forced greater dispersion across the battlefield. Greater dispersion precluded the type of direct control senior commanders had previously enjoyed and forced captains and lieutenants to employ their units in the absence of detailed instructions. In its doctrinal manual, *Instructions for Large Unit Commanders of 24 June 1869*, the Prussian army concluded:

> The higher the authority, the shorter and more general will the orders be. The next lower command adds what further precision appears necessary. The detail of the execution is left to the verbal order, to the (subordinate) command. Each thereby retains freedom of action and decision within his authority. Every command position should communicate only as much of the high command's intention as is necessary for the attainment of the goal. It is indispensable that the subordinate authorities recognize the object of the one who gave the orders in order to strive for the goal when the circumstances demand that they act other than as was ordered.[5]

The above passage stresses the need for "general" orders, accompanied by a higher "commander's intention," which allows the subordinate commander to accomplish the "object" when the circumstances have changed. While this document was intended

for use by regimental commanders or higher, it addresses the basic assumptions of decentralized command and control. The German Army's *Infantry Regulations of 29 May 1906* sanctioned initiative to even lower levels:

> For combat there are required leaders who are accustomed to thinking and who are trained in initiative, and the **riflemen who know how to act by themselves**. In each case the commander must make decisions that meet the situation and not change them thereafter without strong reasons. It is forbidden for the higher commanders to meddle with details, the **subordinate leaders should have the choice of means**. All leaders should always be imbued with the principal that inaction and negligence are more serious faults than an error in the choice of means. The leader should never wait for orders and should seize responsibility with joy. In doubtful cases, let him act upon this principal.[6]

These regulations pushed decision-making responsibility and initiative down to the company level and made repeated references to the common soldier taking action in the absence of orders. The German army formulated a command and control philosophy that was consistent with Clausewitz's understanding of the battlefield - fog, friction, uncertainty, and chaos. As Moltke said, "No operation plan extends with any certainty beyond the first encounter with the main body of the enemy."[7] Since war was viewed as a "clash of wills," enemy action would seldom conform to expectations, and therefore the plan would need to be adjusted. The 1908 regulations linked independent action to the generation of maximum combat power "from the **youngest soldier upwards**, the total *independent* [emphasis in the original] commitment of all physical and mental forces is to be demanded. Only thus can the full power of the troops be brought into action."[8]

As with the concept of the *Schwerpunkt*, the German's were looking for their command and control system to facilitate decisive action. Because speed was considered an imperative for decisive action, rapid decision-making was considered essential to seize

the fleeting opportunities that modern war presented. During World War I speed meant the employment of mortars, machine guns, and flame-throwers on an exposed enemy flank. These actions were only relevant if executed immediately, which meant that a team or section leader was most likely making the decision to act. The previously cited *Attack in Positional Warfare* stated the following:

> For military success the influence of commanders of all ranks and all arms is the decisive factor. It is properly used when scope for independent action and initiative is left even to the private soldier...This is one of the basic principals of this manual.[9]

The dramatic success that this philosophy enjoyed during the 1918 German Spring Offensives illustrates the benefit of this approach. This decentralized command and control philosophy would evolve during the inter-war years and provide the German Army with a mature doctrine for leadership and command in battle during the Second World War.

Truppenfuhrung, the 1933 German Field Service Regulations, clearly articulates the decentralized command and control philosophy commonly referred to as *Auftragstaktik:*

> The basis for command is formed by the mission and situation. On the basis of mission and situation a decision is formed. When the mission is overtaken by events the decision must take changed circumstances into account. He is ever to act within the framework of the whole. The decision must state a clear purpose, to be pursued with all available forces. It must be carried by the commander's strong will. Often the stronger will wins. The art of leadership consists of timely recognition of circumstances and moment demanding a new decision. To the extent that his purpose is not endangered thereby a commander must leave freedom of action to his subordinate commanders.[10]

This manual goes on to describe the orders process, a critical process of any command and control system:

> An order should contain everything a subordinate must know to carry out his assignment independently, and only that. Accordingly, an order must be brief and clear, definite and complete, tailored to the understanding of the recipient and, under certain circumstances, to his nature. Clarity which excludes doubt is more important than correct form. In case of operational situations involving orders for several days in advance this problem is to be taken into account. In such cases the overall objective gains overriding importance; an order should accordingly lay special emphasis on the purpose at hand.[11]

***Schwerpunkt* and Commander's Intent**

Thus the German command and control system required junior leaders to operate independently and take appropriate action in the face of the enemy with incomplete, inaccurate, or conflicting information. Senior commanders were required to provide clear, concise instructions that told subordinate leaders what tasks to accomplish, but not how to accomplish them. Additionally, the senior commander was required to provide his overall vision of the operation and its endstate – the commander's intent. This was the most important element of the German orders process. The intent fused the "mission and situation" with the key doctrinal concepts of center of gravity, critical vulnerabilities (decisive point), focus of effort, and main effort into one statement that provided direction and focus during the chaotic and changing circumstances of battle. The intent was virtually sacrosanct. Subordinates using initiative in response to an unexpected circumstance conformed, as much as possible, to the intent. Under exceptional circumstances a subordinate could modify or completely change the task, if he could still comply with the commander's intent. This was a very serious matter, and required prior approval from the senior commander. If that was not possible, the subordinate leader assumed responsibility for his actions. Regardless, he was required to take relevant action. *Truppenfuhrung* stressed the following: "Thus decisive action remains the first

prerequisite for success in war. Everybody, from the highest commander to the youngest soldiers, must be conscious of the fact that inactivity and lost opportunities weigh heavier than do errors in choice of means."[12]

Thus the commander's intent promoted unity of effort, or more precisely coordinated initiative, for the entire force within the construct of the mission, situation, the S*chwerpunkt* and intent. Of these unifying forces the S*chwerpunkt,* focus of effort, and the intent were the most important, and the most permanent. When faced with a decision, a junior leader asked himself two questions: How can I support the S*chwerpunkt?* and Does this new action conform to the commander's intent? Answering these two questions provided a subordinate leader with enough information and guidance to coordinate his actions with the actions of other leaders on the battlefield without the need to communicate with them. Thus the S*chwerpunkt* and the commander's intent worked in harmony to provide the German Army with a much faster and operationally hardened command and control system. This system allowed the Germans to consistently operate faster than their enemy, creating a huge advantage in operational tempo. This advantage would become very apparent during the Battle of France, Operation *Fall Gelb.*

---

[1] United States Marine Corps, *MCDP-1: Warfighting* (Washington, D.C.: Department of the Navy, 1997), 73. Hereafter cited as *Warfighting.*
[2] *Warfighting*, 78.
[3] United States Marine Corps, *MCDP-6: Command and Control* (Washington, D.C.: Department of the Navy, 1996), 47.
[4] Martin van Creveld, *Fighting Power: German and U.S. Army Performance, 1939-1945* (Westport, Connecticut: Greenwood Press, 1982), 35.
[5] Helmuth Graf von Moltke, *Moltke on The Art of War: Selected Writings*, ed. Daniel J. Hughes, trans. Harry Bell and Daniel J. Hughes (Novato, Ca.: Presidio Press, 1993), 185.
[6] Major De Pardieu, *A Critical Study of German Tactics and of The New German Regulations*, trans. Captain Charles F. Martin (Fort Leavenworth, Kansas: United States Cavalry Association, 1912), 65-66.
[7] Moltke, 230.
[8] Van Creveld, 36.

[9] German General Staff, *The Attack in Positional Warfare*, 1 January 1918, trans. BEF Intelligence (GHQ, 1918), 3. Hereafter cited as *Attack.*
[10] Chef der Heeresleitung, Heeresdienstvorschrift 300/1/2, *Truppenfuhrung,* (Berlin: 1933), trans. U.S. Army Command and General Staff School (CGSS, 1936), para. 36-37. Hereafter cited as *Truppenfuhrung.*
[11] *Truppenfuhrung,* 73-76.
[12] *Truppenfuhrung,* 36.

Chapter 4
Fall Gelb

In MCDP 1-0 *Marine Corps Operations,* the concept of "Single Battle" is described as effectively focusing the efforts of every element of the MAGTF to accomplish the mission. Single Battle requires the integration of every Battlefield Operating System throughout the depth of the battlespace while employing the concepts of main effort, focus of effort, center of gravity, and critical vulnerabilities to generate the synergy necessary to achieve a decisive result. The concept of Single Battle is quite similar to much of the doctrine expressed in *Truppenfuhrung,* and the German concept of *Schwerpunkt.* It is therefore necessary to examine the concepts of *Schwerpunkt* in the construct of a modern campaign.

During *Fall Gelb* the German Army executed what today would be called the concept of Single Battle to perfection. On 10 May 1940, three German Army Groups, sub-divided into twenty-seven Corps with one hundred and twelve divisions, crossed the Belgian, Dutch, and French borders launching *Fall Gelb,* better known as The Battle of France.[1] In six weeks, the German Wehrmacht defeated a numerically and materially superior Allied force by focusing every element of the force against a critical vulnerability, and attacking through this decisive point to destroy the enemy's center of gravity. This chapter illustrates how the German Army properly employed the concept of *Schwerpunkt* during the planning, preparation, and execution of *Fall Gelb,* achieving exceptional synergy with every Battlefield Operating System throughout the battlespace and unity of effort at the strategic, operational, and tactical levels of war. To understand

how this occurred, we need to examine the planning and preparation for the campaign as well as how each Battlefield Operating System was utilized to support the *Schwerpunkt.*

Planning

On 27 September 1939, Adolf Hitler met with his three service chiefs and informed them that, if the western powers rejected his current peace initiative, he had decided "to attack in the West as soon as possible, since the Franco-British Army is not yet prepared."[2] Twelve days later, Hitler issued Directive No. 6 for the Conduct of the War. This directive outlined both his rationale for an immediate offensive in the west and his objectives for the upcoming campaign. Directive 6 stated:

> Offensive operations are to be planned along the Western Front in the north, to attack through Belgium, Holland, and Luxembourg. This attack must be carried out with the strongest possible forces at the earliest opportunity. The goal of this offensive operation is to defeat large elements of the French Army and her Allies. To secure as much ground as possible in Belgium, Holland, and northern France for the purpose of establishing Luftwaffe and Navy bases to conduct an air and sea war against England, and the establishment of a protective buffer for the war material producing Ruhr. The date of the offensive depends on the availability of tanks, motorized units, and weather. All efforts must be made to harness the mobile forces as quickly as possible.[3]

Accompanying this directive was a personal memorandum from Hitler detailing critical timing issues that supported his desire for an immediate offensive, as well as his intent for the upcoming campaign. In this memorandum, Hitler exhorted his generals to:

> Keep firmly in their minds that the destruction of the Anglo-French forces is the main objective, the attainment of which will enable suitable conditions to obtain for the later and successful employment of the Luftwaffe. The brutal employment of the Luftwaffe against the heart of the British will-to-resist can and will follow at the given moment."[4]

It is clear from this memorandum that Hitler wanted an immediate campaign whose operational aim was the destruction of the French army for the purpose of establishing forward operating bases along the Channel Coast for use by German air and naval forces in a subsequent campaign against Britain.

The only problem with Hitler's operational guidance was that his senior military advisors didn't believe they could achieve the stated objective during winter. There was no existing Operation Plan (OPLAN) for an invasion of France like the famous Schlieffen Plan, which the Imperial German Army possessed prior to the First World War. Additionally, over fifty percent of the Wehrmacht's armored vehicles were undergoing maintenance during October-November 1939 and would have been unavailable for an immediate campaign.[5] Additionally, many German leaders were openly critical of the performance of their own troops, especially the infantry, during the previous campaign and desperately wanted time to train the force. Almost every general officer believed that if the Wehrmacht fought a more suitably prepared foe, such as the French and British Armies, these deficiencies would lead to failure. The aforementioned factors, combined with the poor winter weather caused both Oberkommando des Heeres (OKH, Headquarters German Army) and Oberkommando des Wehrmacht (OKW, Headquarters German Armed Forces) to argue for the postponement of the western offensive until the spring of 1940. They believed that the newly expanded Wehrmacht needed time to rest, refit, rearm, and train after its campaign in Poland.[6]

Regardless of their misgivings about an immediate offensive against France, the General Staff began to formulate a campaign plan. By 19 October 1939, the initial version of *Fall Gelb* (See Map 1) was issued to the field forces. It directed an offensive

using only the existing force structure on the western front, which consisted of eighty-four divisions with nine divisions held in reserve by OKH. A force composed of three divisions from the X Corps and controlled exclusively by OKH would attack from an area north of the Rhine and seize the Netherlands on an operational line of Utrecht to Amsterdam, to Rotterdam. Army Group B, commanded by General Fedor von Bock, was comprised of the Second, Sixth, and Fourth Armies numbering thirty-nine divisions. It was designated the main effort or *Schwerpunkt* in the initial plan. The Second Army was to cross the Maas River just north of Nijmegen and attack across Holland and northern Belgium, screening the right flank of the Sixth Army, which was Army Group B's main effort. The Sixth Army, reinforced with three panzer divisions, was to attack north of Liege on an operational line of Brussels to Antwerp. The Fourth Army, also reinforced with three panzer divisions, was to attack south of Liege and north of Namur protecting the left flank of the Sixth Army on an operational line from Gembloux to Ghent, to Bruges. Luftflotte 2, reinforced with an airborne division, supported Army Group B with aviation reconnaissance, screening, fires, and special operations. [7]

Army Group A commanded by General Gerd von Rundstedt, was comprised of the Twelfth and Sixteenth Armies with twenty-seven divisions. Its mission was to protect the left flank of Army Group B against a French counterattack from the southwest. Rundstedt's force was composed principally of infantry divisions with horse drawn transportation, and it was to advance through the restrictive terrain of the Ardennes in the direction of southeastern Belgium and Luxembourg. Luftflotte 3 supported Army Group A with aviation reconnaissance, screening, and fires. [8]

Army Group C, commanded by General Ritter Wilhelm von Leeb, was composed of the Seventh and First Armies with nineteen divisions. Its mission was to fix the French forces along the Maginot Line to deny them the ability to move north and reinforce the French forces engaged by Army Group B. Army Group C was an all infantry force with horse drawn transportation and received no dedicated aviation units.[9]

This plan had a short shelf life. The General Staff saw no purpose for Second Army's operation in northern Holland, the focus of effort was unclear and indecisive, the panzer forces were not concentrated as they had been in Poland, and the Sixth Army was not allocated enough motorized forces to exploit any initial success. The initial *Fall Gelb* plan was thrown together hastily and reluctantly to satisfy Hitler's desire for an immediate offensive, and the General Staff used its inherent faults as an excuse to postpone its execution.

All these problems were discussed in meetings with Hitler on October 27 and 28, and resulted in the first revision of the plan. The principal changes to the plan were the elimination of the Second Army's supporting attack, and an increased concentration of armored forces in the *Schwerpunkt*. Army Group B was enlarged to forty-three divisions, which included an additional army, the Eighteenth, and it now possessed nine panzer and four motorized divisions, which was almost the entire German mechanized force. A concentrated armored spearhead had been achieved, but the orientation of the main attack was still frontal (See Map 2). [10]

After these changes were complete, there was still significant opposition to a winter offensive in general, and this plan in particular, within the headquarters of OKH, and the Field Army. However, it was the failure to secure advanced air bases in Holland

that brought immediate Luftwaffe opposition to this version of *Fall Gelb* and forced yet another revision. The third version of *Fall Gelb* blended several alternatives then under consideration: an operation to seize forward air bases in Holland, a strong multi-axis armored thrust north and south of Liege, and a new twist, the addition of an armored corps to Army Group A.

Throughout October and November 1939, as the debate within OKH raged concerning the basic concept for *Fall Gelb*, von Rundstedt relentlessly lobbied OKH for changes to the plan. He eventually wrote OKH six memoranda outlining his ideas for improving the campaign plan. General Erich von Manstein, Rundstedt's Chief of Staff, believed that the key to success lay in annihilating the entire French Army north of the Somme River, and not throwing them back frontally as the current version of *Fall Gelb* intended.[11] He believed that Army Group A should possess concentrated armored forces for a multi-axis attack across the Meuse River south of Namur, with the operational aim in the general direction of the Somme estuary. This line of advance would achieve decisive results, because it would cut the enemy's lines of communication, encircle his main body, and destroy it. Manstein believed that if Germany was to risk a war with France, "it should be on the basis of a plan that offered some hope of victory."[12]

Manstein's concept intrigued Hitler, who in October had asked OKH about the possibilities of moving armored forces through the Ardennes to Sedan.[13] Hitler suggested a compromise solution that allocated three armored and two motorized divisions to Army Group A, thereby creating Guderian's Nineteenth Panzer Corps. Additionally, preparations were to be made so that, if success were achieved in the south, additional armored forces could be moved from Army Group B to reinforce the Sedan

thrust (See Map 3). [14] These changes were approved by OKH without addressing the fundamental flaw in *Fall Gelb*, which was an operational concept that propelled the German Army into a frontal encounter with the main body of the Franco-British Army.[15]

As good fortune would have it, this "play-by-ear" version of *Fall Gelb* fell into the hands of the Belgian authorities during the Mechelen incident, which along with the horrible weather necessitated the cancellation of the western offensive until the spring.[16] Once OKH knew that the date for the offensive was postponed until spring, they took full ownership of *Fall Gelb* and began the meticulous staff work necessary to produce an acceptable campaign plan. Immediately OKH conducted a war game to evaluate the plan's concept, allocate forces, and consider the placement of the main effort, against several enemy courses of action. The war game concluded that shifting the main effort from one army group to another once the battle had commenced would lead "to confusion and loss of time."[17] Furthermore, OKH believed that "a German attack through the Ardennes would offer the best prospects to achieve a breakthrough in open territory and to catch the whole enemy force at its hinge." [18]

During February 1940, OKH conducted two more war games that solidified the final concept of the plan. Prior to the 7 February war game, German intelligence located the French Seventh Army near the English Channel. The Seventh Army was one of France's few armored formations and its location and disposition indicated that it was poised to move quickly into Belgium. Additionally, a radio intercept discovered that the French Second Cavalry Division, a unit predominately outfitted with horse cavalry, was operating in the Ardennes west of Sedan and was executing a covering force mission.[19] This information was used during the OKH war game as the basis for selecting the most

likely enemy course of action.[20] This allowed the planners at the General Staff to fine-tune the campaign plan, reallocate forces, and designate Army Group A as the main effort.

On 24 February 1940, OKH issued *Fall Gelb* to the Field Army. The final version was much more audacious than even Manstein had envisioned. Army Group A was designated the main effort and would attack along a sixty-mile front with three armies comprised of forty-five divisions. These armies would be led through the Ardennes by Panzer Group Kleist, an independent armored force under Army Group control that was comprised of five panzer and three motorized divisions. Panzer Group Kleist along with an armored corps from the Fourth Army would force a crossing of the Meuse River at Dinant, Montherme, and Sedan and continue the attack to the Channel Coast.[21] Special forces, infiltrated by foot and small aircraft, would precede the armored phalanx and seize critical bridges and chokepoints. Luftwaffe reconnaissance planes would screen forward and on the flanks of the armored forces to provide advanced warning of any French troop movements that would threaten this force. [22]

Army Group B was now a supporting effort, and was allocated twenty-nine divisions to fulfill its vital mission. The Eighteenth Army was allocated nine divisions, six infantry, one motorized, one panzer, and one cavalry, to seize Holland. The Sixth Army was comprised of twenty divisions and would attack north of Liege on an operational line toward Ostend and Calais. Once contact was gained, it was to be maintained at all costs. Sixth Army's role was to deceive the French into believing that it was the German main attack, draw the enemy into central Belgium, and decisively engage the enemy main body along Dyle River. The Luftwaffe would concentrate

aviation fires in Holland and Belgium for the first three days of the offensive to give credence to this deception. Additionally, airborne and glider-borne infantry would seize bridges and fortresses over the Albert Canal to facilitate the movement of the Sixth Army into central Belgium and further reinforce the perception that this was in fact the main attack.[23] Army Group C, with nineteen infantry divisions and no air support, would attack Longwy at the northern extension of the Maginot line to fix French forces south of Sedan in order to prevent a counterattack on the southern flank of Army Group A (See Map 4).[24]

The final version of *Fall Gelb* accepted significant risk in order to achieve a decisive result. It attacked the French simultaneously and sequentially, along multiple axes, and throughout the depth of their battlespace. It deliberately focused special operations forces, signal intelligence assets, and massed aviation reconnaissance and fires in support of the main effort.[25] The General Staff continued to refine the plan with the aid of several more war games until all the support and timing issues were resolved. In the end *Fall Gelb* rivaled the famed " Schlieffen Plan" in its scope, detail and operational brilliance.

Preparation

Towards the conclusion of the Polish Campaign, the German General Staff began to evaluate the battlefield performance of the Army. OKH immediately began collecting official after-action reports from every level of the German Army in order to identify weaknesses. These reports were brutally honest and concluded that while Army doctrine and structure were fundamentally sound, its combat performance left much to be desired. The General Staff believed that the accelerated build up of the Wehrmacht from 1934 to

1939 had actually degraded its combat efficiency.[26] In Poland, the motorized divisions proved to be too large and cumbersome, while the light divisions lacked the firepower to be effective. Infantry units were judged to be quite inferior to those of the Imperial German Army during the World War I, particularly in their willingness to attack, overall discipline, and the leadership and initiative displayed by junior officers and NCOs. The individual soldiers possessed the necessary spirit, however they were generally in poor physical condition and lacked the "hardness required for battle."[27] Traffic control was so abysmal that it necessitated the immediate formation of a military staff position to plan and control motorized movement, and special military police units for the sole purpose of enforcing march discipline and traffic control. [28]

On 13 October 1939, General von Brauchitsch, Commander and Chief of the German Army, issued a directive titled *The Training of the Field Army.* In this directive he tasked commanders at every level to use this operational pause prior to the campaign in the West "to perfect the Field Army's performance, discipline, and cohesion."[29] Brauchitsch stressed realistic training, professional education for all leaders, and a toughening of the individual solider to prepare him for "the highest demands of war."[30] This directive further stated that improvements were expected in reconnaissance and security, march and fire discipline, foot mobility and stamina, cooperation between arms, and small unit offensive and defensive tactics, techniques and procedures.[31]

Next, OKH turned its attention to correcting the deficiencies noted during the Polish Campaign in its armored force structure. The light divisions lacked firepower, the panzer divisions were deficient in the number of infantry battalions, and the motorized divisions were hard to maneuver. A major reorganization of the armored force was

required. The light divisions were immediately converted to panzer divisions with the addition of armored and infantry units. One infantry regiment was removed from each of the six motorized infantry divisions in order to streamline its organization and increase its maneuverability. The extracted infantry regiments were then broken up to increase the number of infantry battalions in both the panzer and light divisions from three to four. These changes increased the number of panzer divisions available for the western offensive from six to ten, improved their combined arms balance, and increased the maneuverability of the six motorized infantry divisions. After testing its armored doctrine in Poland, the German Army made subtle organizational changes that increased both its agility and lethality. Thus the world's premier combined arms force comprehensively analyzed itself and conducted a massive reorganization in less than six months. This was a significant accomplishment by any standard of measure.

Throughout the winter of 1939-1940, the German Army focused on educating its leaders and training its combat units for the upcoming campaign. OKH established and supervised a combat leadership training program for all officers. Decision-making exercises were conducted under the tutelage of combat veterans. These exercises were conducted under physical and mental stress to identify weak leaders and reinforce common doctrinal concepts. A similar two-week NCO course that focused on battle drill and leadership was established for every junior leader in the western theater. The primary purpose of these courses was to instill in junior officers and NCOs the need for aggressive leadership and initiative under fire. German small unit leaders were taught that failure to display initiative was equivalent to disobeying orders. They were required

to lead from the front and take decisive action under fire and not to manage a battle from a comfortable command post.

Infantry units practiced attacks on fortified positions, close cooperation with armored and aviation units, as well as waterborne assault on the Rhine and Moselle rivers. Infantry commanders were taught to control close air support aircraft. Engineer units cross-trained with all infantry units in assault bridging and mine clearing techniques. Division sized units were rotated out of the line to conduct large scale combined arms operations at the Army's training centers in central and southern Germany.[32] The movement of large units to the training centers was conducted primarily by motor vehicle and allowed the new military police units to practice the traffic control techniques they would employ during the offensive.[33] The OKH went to great lengths to train the force and instill an offensive spirit prior to the commencement of *Fall Gelb.* The subsequent performance of the Army during the western offensive would prove that it was time and effort well spent.[34]

The French Strategic Setting (The Dyle Plan)

Geography, resources, and manpower considerations decisively influenced French military strategy. The scars of the World War I deeply effected French decision making and contributed to the adoption of a purely defensive strategy. Almost sixty-five percent of France's natural resources, industrial capacity, and population lie within 50 miles of the German or Belgium border. If this frontier area were lost, as was the case in the First World War, France's mobilization plans and its ability to wage modern war would be significantly disrupted.[35] Operationally, this led to the development of strong prepared fortifications along the German border and a forward defense in Belgium.

The Maginot Line became the positional element of French strategy. This series of interconnected and deeply entrenched forts along the Franco-German border served as centers of resistance to repel an attack from Germany. However, the expense and maintenance of these fortifications required a compromise in the extent of the border covered. Construction began in 1929, and consumed six percent of the annual Army budget. Due to the cost, a compromise was made along the border of the Ardennes Forest, an area considered impassable to mechanized forces by Field Marshal Philippe Petain and therefore "not dangerous", that was not fortified.[36]

Additionally, the cost of these fortifications was so high that a reduction in French force structure was needed to pay for a reduced version of the original plan. Throughout the 1930s, the initial length of active service was reduced from two years to eighteen months and then to one year in order to cut defense expenditures. The shorter initial active duty requirement contributed to a reduction in the active duty end strength of the French Army from 700,000 in 1920 to a low of 350,000 in 1935. Fiscal constraints also reduced the number of training days reservists were required to attend to a low of twenty-one days per year by the late 1930s.[37] These factors made the French extremely dependent on a total mobilization to compete with German manpower resources. When the French mobilized for war they subdivided each active duty division and mixed it with reservists to create three new divisions. The French classified these mobilized divisions as "Active", "Series A", and "Series B" based on the percentage of active duty personnel assigned to them.[38] An "Active" division was staffed with fifty-five percent active duty soldiers with the balance being reservist. The Series B divisions were made up entirely of mobilized reservists and were only suitable for defensive missions. A third of all

French ground forces were made up of units suitable only for defensive combat, which placed significant constraints on the disposition of their forces. The French placed these Series B divisions in sectors that were considered " not dangerous," like the Maginot Line or the Ardennes.[39] Under the aforementioned geographical and manpower constraints the French operational response to the German invasion seems logical.

The Dyle Plan was the expression of French defensive strategy in 1940. The French First Army Group, comprised of four French Armies and the British Expeditionary Force, would move thirty-six divisions into Belgium and occupy defensive positions behind the Dyle and Meuse Rivers.[40] The French Second Army, consisting mainly of reservists, remained in concrete fortifications along the Meuse River at Sedan and acted as the pivot for the rest of the army group's movement into Belgium. Once along the Dyle River, this army group defended a 200-kilometer front that extended from Antwerp, across the Gembloux Gap to Namur, and was anchored at Givet along the Meuse River (See Map 5). The Dyle Plan provided the French with a significant water obstacle to break the momentum of the German attack, and concentrated French motorized forces at the Gembloux Gap, then considered the most dangerous invasion route into France. It also allowed them to fight a defensive battle on Belgium soil, the ultimate French objective. Finally, French forces were to avoid an encounter battle at all costs and fight from previously prepared positions thereby capitalizing on the inherent strength of the defense and their enormous advantage in artillery. The French assumed that the Belgium forces would delay the German advance for at least four days along the Albert Canal, giving them ample opportunity to move into their defensive positions. While the speed of the German advance surprised the French, they were able to execute

this plan and occupied their defensive line along the Dyle River on the second day of the war.

If Holland were invaded, the French could execute the Breda Variant to the Dyle Plan. The French Seventh Army, then considered one of its best formations, would move sixty kilometers north and occupy a defensive line along the Albert Canal in Holland in order to deny the Germans the Escaut Estuary, and to gain the addition of ten Dutch divisions to the Allied cause. This option became known as the Breda Variant. However, the execution of the Breda Variant removed the French Seventh Army from the French operational reserves and left it with very few mobile forces to deal with an unexpected penetration to its center.[41] French GHQ committed themselves to this option prior to the commencement of hostilities, and without conducting any staff talks with the Dutch and Belgian armed forces. Additionally, this movement was based on the assumptions that the Belgians would hold the Germans along the Albert Canal for four days, and that the hinge of the army group located at Sedan was safe. Sedan was defended by the French Tenth Corps, which was comprised of two poor Series B divisions and some horse cavalry units, and the Belgian Army was ill-equipped to delay even the German supporting effort for four days.[42] The use of the Seventh Army to execute the Breda Variant and the occupation of the Dyle line made the French extremely vulnerable to envelopment from the rear.

Command and Control

During Operation *Fall Gelb*, the German Army exercised efficient command and control procedures, which allowed them effectively to coordinate intelligence, maneuver, and fire support throughout the entire operation. While command and control is normally

associated with a unified chain of command or effective communication hardware and architecture, that is only a very small part of this Battlefield Operating System. A well-developed and thoroughly war-gamed campaign plan is truly the foundation of good command and control, for it focuses combat power and provides essential guidance during the execution phase of the campaign. The German General Staff used a deliberate staff planning process to develop an operation plan that integrated each Battlefield Operating System throughout the depth of the battlespace while consistently supporting the *Schwerpunkt.* This plan sought to focus overwhelming combat power through a critical vulnerability, which was the decisive point in order to destroy the enemy center of gravity. *Fall Gelb* was a superb plan that was supported by unified chain of command and state of the art signals equipment. However, enemy action, chance and uncertainty create a friction that impacts the original plan in a negative manner. Therefore, in order for a plan to remain coordinated it must be continually adjusted during its execution. The actual decisions that alter and adjust these plans are the essence of command and control.

The two command and control procedures used most effectively by the Germans during *Fall Gelb* were the mutually supporting concepts of commander's intent and the *Schwerpunkt* or main effort. The *Schwerpunkt* describes both the assignment and weighting of a subordinate unit to accomplish the principal objective, and in a wider sense as the aiming point or focus of the operation. All other units base their actions on how effectively they support the main effort. Therefore, the *Schwerpunkt* adds clarity to a rapidly changing combat environment by focusing the energy of the entire force towards decisive action. This is the glue that allows the commander's intent to remain relevant in the fog and friction of war and ensures that the initiative of junior leaders

remains coordinated. The French Army possessed no equivalent concept in its doctrine, nor had it imbued its commanders and junior officers with any such philosophy of war, and was thus consistently unable to adjust to the rapidly changing situation that the Germans thrust upon them.

The mission statement of Panzer Group Kleist clearly expresses the operational goal of the campaign, but not the purpose:

> Panzer Group von Kleist, as the lead echelon of Army Group A, advancing in front of the 12th and 16th Armies (Vianden-Echternach), attacks in deep echelonment through Luxembourg-southern Belgium. Employing surprise and rapid movement, the Panzer Group, with the main effort on both sides of Charleville-Mezieres, secures the west bank of the Meuse River between the Semois River (where it feeds into the Meuse) and Sedan. Subsequently, Panzer Group von Kleist continues its attack to Abbeville and the Channel Coast[43]

Von Kleist's intent statement describes how the operational goal will be achieved:

> It is imperative to break through rapidly to the enemy's rear. To accomplish this, we must disregard left and right flank security and employ every available means to cross quickly or to bypass his barriers and obstacles. Surprise him continuously.[44]

While this intent statement is rather concise by today's standards, one must remember that it was developed through a process of multiple war games that lasted for over four months, and was therefore well known by his entire force. Finally, it must be judged in the context of how it was used by subordinate commanders during the campaign.

On 11 May 1940, Von Kleist ordered the XIX Panzer Corps to halt the westward movement of the Tenth Panzer Division, orient it south, and position it between Etalle and Arlon to protect the southern flank of Panzer Group Kleist. General Guderian disregarded this order because it violated both his mission and the intent. Guderian

insisted that the rapid movement to the Meuse River must remain the focus, and that von Kleist's own intent statement warned that his units " must disregard left and right flank security."[45] After a heated discussion, von Kleist agreed with Guderian's assessment and rescinded the order. [46]

During the evening of 14 May 1940, Guderian issued an order for the westward pivot of the Second and First Panzer Divisions towards Rethel. XIX Panzer Corps had experienced strong French armored counterattacks from the south all day, but had soundly defeated them. By 2200 hours the XIX Panzer Corps had most of its armored force across the Meuse and was in a much stronger position to deal with any future attacks. With this in mind, Guderian ordered the Tenth Panzer Division and the Grossdeutschland Infantry Regiment to "stand fast" and protect the southern flank of the bridgehead until relieved by the Twelfth Army. [47] This was a planned movement, and considered the minimum force required to protect the bridgehead. Once again von Kleist objected to the fulfillment of his intent. He ordered Guderian to halt the other two divisions and consolidate the bridgehead with his three panzer divisions. Guderian protested vigorously on the grounds that a breakthrough to the rear of the enemy was now possible and this opportunity must be seized. Speed was critical. Once again after consideration, von Kleist rescinded the order. These are two examples of how these concepts guided the operational decisions of the XIX Panzer Corps, and allowed the German Army to exercise effective command and control throughout this campaign.

Intelligence

The German General Staff received information from a variety of intelligence sources that allowed it to develop an accurate picture of the enemy forces and their

disposition. The Germans employed three different collection methods in their intelligence preparation of the battlefield: communication intercept, aerial reconnaissance, and human intelligence. After the Polish campaign, the collection and analysis of communication intercepts was expanded and streamlined. In 1939, the Germans possessed fixed intercept stations located at Munster, which focused on the central Netherlands; at Euskirchen, which concentrated on Liege; at Stuttgart, which monitored the Maginot Line; and near Tier, which listened to signals traffic in the Ardennes.[48] These stations were augmented with mobile stations controlled at the Army group headquarters, which possessed a small evaluation staff that made collection and distribution much quicker. By February 1940, these fixed and mobile stations were reading ninety percent of French Army radio traffic and breaking its encoded messages.[49] While communication traffic provided only a portion of the overall intelligence picture, it did locate the French Second Calvary Division at Sedan and outlined its operational mission. This information was helpful in developing an accurate enemy most-probable-course-of-action prior to the OKH war game held in January 1940. The OKH war game was used to determine the location and force ratios for the German main effort, and to refine critical timing issues for the campaign.

In addition to communication intercepts, aerial photographic reconnaissance was also extremely useful in pinpointing units along the forward edge of the battle area. The Luftwaffe's Strategic Reconnaissance Group flew five to six missions a day over the border regions of France, Belgium, and Holland to provide the most timely and accurate information possible. Additionally, each Air Fleet had special trailers located at its forward airfields for quick photographic processing, interpretation, and dissemination of

intelligence. Army liaison officers attached to each reconnaissance squadron identified and selected specific information that would be of vital interest to the ground forces and sent it to OKH Headquarters at Zossen for analysis.[50] This close coordination between photographic reconnaissance and ground forces provided a vital and accurate picture of the disposition and composition of French forces poised to reinforce Belgium. The OKH staff used these photos in conjunction with other intelligence to determine the most likely threat courses of action during the frequent war games used to develop and refine the concept of *Fall Gelb*.

While technical intelligence sources provided essential information on the French order of battle, the use of human sources is where the German intelligence services really contributed to the success of the campaign. General Tippelskirch, the G-2 at OKH, and his deputy, Colonel Liss, possessed a keen insight into the French way of war. Both were fluent in French and had spent years studying French Army doctrine and tactics. This understanding was developed during the 1920s and 1930s, when intelligence agents had provided text books, professional journals, and curriculum from the French War College at St. Cyr as well as other professional schools.[51] Agents had also provided the engineering plans for the fortress Eben Emael, which guarded the key bridges over the Albert Canal that Army Group B would use in its supporting attack. These plans contained essential data that exposed several weaknesses in its defenses, which German commandos exploited during the raid that secured it. As the invasion neared, German intelligence agents provided essential information on the Ardennes road and rail network, terrain, and the Belgium obstacle plan. This allowed the staff planners at OKH to craft a very detailed and accurate movement and logistics plan. All this information created a

superior intelligence picture of the French forces that Tippelskirch and Liss used to fight the French forces during the OKH war game in January 1939. The analysis of the French military's most likely course of action for a war in the west was quite prophetic, as reflected in this statement from the Foreign Armies West Guidebook:

> In every strategic or tactical action, the leadership will always allow concern for security to take precedence over the possibility of achieving success by rash or bold measures...This cautious attitude will have been strengthened by the impression of the successful German campaign in Poland and easily could become excessive.[52]

Colonel Liss predicted that the French Army would remain stationary until Germany invaded Belgium, and that a mobile force of approximately 40 divisions would occupy a line from Antwerp through the Dyle River Valley to the town of Namur on the Meuse.[53] This course of action was essentially identical to the French Dyle Plan with the Breda Variant. This intelligence allowed the General Staff to craft a scheme of maneuver that took advantage of all the weaknesses inherit in the French plan. Additionally, their analysis of the French capability to respond to the proposed Ardennes axis of attack was once again extremely accurate: " The French Army has a naturally slow action or response rate...a comparatively long period required for the preparation or conduct of an attack."[54] This remarkably accurate intelligence picture, developed through the use of mutually supporting collection sources and expert analysis, allowed OKH planners to craft a plan that accepted a fair amount of risk in order to gain a significant advantage. This was definitely a case in which intelligence drove operations and was organized and employed to support the main effort.

Maneuver

Maneuver is defined as placing the enemy in a positional disadvantage through the flexible application of combat power. The German Army accomplished this during the execution of *Fall Gelb* in a variety of ways. First, the Germans concentrated overwhelming combat power in Army Group A and consistently supported it throughout the operation. Army Group A possessed seventy percent of the Wehrmacht's armored and motorized forces, a concentration of combat power entirely consistent with the Germans doctrinal understanding of the concept of *Schwerpunkt*. In order to support the movement of this immense concentration of armored vehicles, OKH implemented strict traffic control procedures that facilitated the movement of Army Group A on every major east-west road in the Ardennes. They also created several special military police companies to control all the feeder roads into the traffic movement routes of Army Group A. In turn, Army Group A provided the same service for Guderian's XIX Panzer Corps, ensuring that its movement would not be impeded by internal traffic problems. Special operations forces preceded the armored advance, seized key bridges, and reduced obstacles to ensure rapid movement through Belgium and Luxembourg. Army Group A also provided armed aerial reconnaissance along Guderian's front and flanks. Aerial reconnaissance acted as cavalry, destroying enemy security forces while providing Guderian with constant information on the enemy location, activities, and strength.

These actions facilitated the movement of the XIX Panzer Corps to Sedan, where it was able to mass 180,000 soldiers and 900 armored vehicles against two French Series B divisions, all on a twelve kilometer front. This force was supported by 284 artillery pieces and over 1,500 aircraft attacking ground targets in waves of twenty to thirty planes all aimed at the French tactical center of gravity – the French artillery. [55] Once the French

artillery was defeated and four German infantry regiments had secured the western bank of the Meuse River, four assault engineering battalions emplaced three pontoon bridges and operated several ferries to move 900 armored vehicles across the Meuse in less than twenty-four hours. The crossing of the Meuse River by the XIX Panzer Corps was a well planned, well rehearsed, and superbly executed operation. This operation facilitated the mobility that Army Group A needed to destroy the defensive cohesion of the French Second and Ninth Armies. Once the French defensive positions were destroyed it allowed the unimpeded movement of Panzer Group Kleist to the channel coast, which cut the lines of communication of the French First Army Group, thereby facilitating the destruction of the French Army in less than six weeks.

This was a classic example of "symmetrical overmatch". Symmetrical overmatch occurs when a force generates and applies combat power similar to that of the enemy, but at a level and in a manner which he can not match. It is a form of "asymmetry." The Army Group A concentration of forces in deep echelonment enabled it to sustain its advance while simultaneously protecting its flanks with follow-on forces. By attacking through an enemy weakness with overwhelming strength, Army Group A protected its combat power and delayed its inevitable culminating point until the enemy was defeated. A multiple axis attack kept the French off balance and delayed their reaction to the main attack until it was too late. The consistent and overwhelming support of the main effort, at every level, through application of massed aviation and artillery fires created maneuver space that facilitated the breakthrough of the French main line of resistance at Sedan. This breakthrough created an enormous positional advantage for the Germans via the Allied forces in Belgium that ultimately led to the encirclement of the French First Army

Group. These actions, the result of superior planning and battlefield adjustments, were ultimately decisive and led to victory.

Fires

Aviation and artillery fire support was used with great skill and effect during this operation. The Luftwaffe began the campaign with massive air raids on Dutch and Belgian airbases. The Dutch lost fifty percent of their air force in these raids, while the Belgians lost twenty-five percent. This was done to deceive the Allies as to the location of the German main attack, and to provide air support for the massive airborne and commando operations in Holland and Belgium. For three days, the Luftwaffe surged sixty percent of its attack assets in support of Army Group B. The preponderance of air support, coupled with the operations of airborne and armored forces, convinced the French that the German main effort was aimed at central Belgium. Initially, aviation fires were used to gain air superiority over the Low Countries and to draw the French main effort into central Belgium so that Army Group B could decisively engage it.[56]

However, it was in the Army Group A zone that aviation and artillery fires were integrated with devastating effect. As the lead elements of Army Group A reached Sedan, and deployed to their attack positions, the Luftwaffe shifted its priority of fires and began to reposition several thousand aircraft for support of the XIX Panzer Corps river crossing operation. Artillery was also massed for the crossing operation with 284 artillery pieces placed under the centralized control of Brigadier General Wilhelm Berlin,

the XIX Panzer Corps' Artillery Commander. Berlin placed 236 tubes in support of the First Panzer Division, the XIX Panzer Corps main effort, and positioned all artillery and observation posts to support the First Panzer Division, if needed.[57] The fire support plan called for the Luftwaffe to begin its support at 1000 hours and initially focus fires in engagement sectors CI, BI, and AI adjacent to the Meuse River (See Figure 2). The Luftwaffe maintained 250 sorties over this area all day with waves of twenty to thirty aircraft relentlessly attacking French positions.[58] At 1400, the Luftwaffe massed over 1,000 aircraft over Sedan as they focused every available asset on the thirteen French artillery battalions located near Sedan. Under the cover of this intense bombardment the infantry moved boats and engineering assets to positions adjacent to the river. At 1600, the air support was shifted to engagement sectors BII and CII and German artillery began to fire at bunkers, and obstacles near the riverbank (See Figure 2). At 1630, artillery fires were also shifted to the counter-battery fight, and four German infantry regiments, supported by hundreds of direct fire weapons, crossed the Meuse in assault boats.

The fires that supported this operation were massed on a front of only five kilometers. Luftwaffe liaison teams attached to the panzer divisions controlled all aviation fires. They had special fire support coordination measures called engagement sectors, special close air support maps, and a newly created five-line CAS brief that allowed the Germans to shift and distribute aviation fires across the depth of the French defensive position. Artillery fires were also controlled with these engagement sectors, as well as the use of the more traditional centralized observation posts manned by artillery battalion forward observer (FO) teams. [59] Until the infantry was established across the Meuse River all fire support was under centralized control. However, as the infantry

battalions began to fight through the French defensive position beyond the observation of the artillery battalion observation posts, control was decentralized, and FO teams began to bring fire down on targets of opportunity. The massing and centralized control of aviation and artillery fires facilitated the seizure of a bridgehead by the infantry, while the decentralization of control allowed the German infantry to expand the bridgehead. Aviation and artillery fires consistently supported the main effort throughout the operation. Fires were massed, shifted, and distributed with skill and precision, and were instrumental in creating another example of asymmetric overmatch that the French forces were unable to effectively counter. Fires were instrumental in creating the conditions for a successful river crossing operation, a breakthrough of a fortified defensive position, and eventually the pursuit of a defeated enemy.

Conclusion

Fall Gelb was a well-conceived, thoroughly planned and brilliantly executed campaign plan. It succeeded primarily because of its campaign design. Through superb use of a focused intelligence collection effort, the Germans correctly identified the French operational center of gravity as the motorized divisions that occupied the Dyle line on 11 May 1940. They then identified the critical vulnerability in the French defense, the boundary between the Ninth and Second French Armies at Sedan, and designed a campaign that concentrated overwhelming combat power against that decisive point. They used a substantial supporting effort, Army Group B, to fix and deceive the French forces in Belgium. They supported Army Group B with airborne and commando operations, and overwhelming air support to reinforce the belief that it was in fact the German main attack. These actions created conditions for the main effort (Army Group

A, Panzer Group Kleist, XIX Panzer Corps, 1st Panzer Division, and 1st Infantry Regiment) to quickly defeat French security forces employed in the Ardennes and conduct a river crossing at Sedan six days sooner than the French thought possible. That river crossing, and the subsequent breakout and encirclement of the French First Army Group on the northern coast of France is a superb example of the operational art. The use of aviation and artillery fires, the disciplined traffic control measures on the approach march to Sedan, and the employment of special forces to secure bridges and restrictive terrain features illustrate the superior level of planning and execution that were so central to the success of *Fall Gelb.*

German command and control procedures facilitated aggressive action and quick decisions during the execution phase of this operation. The concept of the *Schwerpunkt* (Main Effort) provided the cohesion necessary to keep battlefield adjustments relevant and focused on the objective defined by the commander's intent. The French did not have any similar concept in their doctrine and their battlefield adjustments, when made, were thus poorly timed and usually irrelevant. These two concepts increased the German tempo of operations over its opponents and were instrumental in shattering the decision cycle of the French Army. Additionally, the forward command presence displayed throughout the campaign by German officers and NCOs contributed to a much faster and more reliable command and control environment, far more reliable and faster than the French method.

The cooperation of all arms was also an essential element in German success. The crossing of the Meuse at Sedan was a classic combined arms battle, in which symmetrical overmatch was achieved and produced a form of asymmetry. The Germans

massed enormous aviation and artillery assets to create favorable conditions for maneuver. They also used substantial direct fire systems, such as assault guns, tanks, 88mm Air Defense Artillery, flame weapons, and special demolitions, to force a crossing and gain a bridgehead.[60] The ability of German leaders to harness the synergistic effect of air, armor, artillery, infantry, and engineering resources and employ them in close cooperation was devastating. The German ability to employ combined arms generated significantly more combat power than the French could effectively counter, and when combined with the agility of their decision-making process and aggressive leadership, produced a stunning victory.

---

[1] Ernest R. May, *Strange Victory: Hitler's Conquest of France* (New York: Hill and Wang, 2000), 474-475
[2] Telford Taylor, *The March of Conquest: The German Victories in Western Europe, 1940* (New York: Simon and Schuster, 1958), 43
[3] Florian K. Rothburst, *Guderian's XIX Panzer Corps and The Battle of France: Breakthrough in the Ardennes, May 1940* (New York: Praeger, 1990), 5
[4] Taylor, 45-46
[5] Alistair Horne, *To Lose a Battle: France 1940* (New York: Penguin Books, 1969), 173
[6] Rothburst, 2-4
[7] Taylor, 158-161
[8] May, 229
[9] Taylor, 156
[10] Generalfeldmarschall Fedor von Bock, *The War Diary: 1939-1945,* ed. Klaus Gerbet, trans. David Johnston (Atglen, Pa: Schiffer Publishing Ltd., 1996), 76-77.
[11] Horne, 185
[12] May, 230
[13] May, 235
[14] May, 232
[15] Taylor, 164
[16] May, 232
[17] Robert Allan Doughty, *The Breaking Point: Sedan and the Fall of France, 1940* (Hamden, Connecticut: Archon Books, 1990), 25
[18] May, 260
[19] May, 261
[20] Generalfeldmarschall Franz Halder, *The Halder War Diary, 1939-1942*, ed. and trans. Charles Burdick and Hans-Adolf Jacobsen (Novato, Ca: Presidio Press, 1988), 98.
[21] Doughty, *The Breaking Point,* 26
[22] Rothburst, 4
[23] Von Bock, 113-114.
[24] Doughty, *The Breaking Point,* 26
[25] Rothburst, 14
[26] Rothburst, 18

[27] Rothburst, 20
[28] Rothburst, 19
[29] Rothburst, 21
[30] Williamson Murray, *German Military Effectiveness* (Baltimore, Maryland: The Nautical and Aviation Publishing Company, 1992), 235
[31] Rothburst, 21
[32] Report of 10th Panzer Division on Training, 14 December 1939, NARA T-315/558/000733.
[33] Rothburst, 24
[34] Rothburst, 23
[35] Robert Allan Doughty, *The Seeds of Disaster: The Development of French Army Doctrine, 1919-1939* (Hamden, Connecticut: Archon Books, 1985) 42
[36] Doughty, *The Seeds of Disaster*, 59
[37] Doughty, *The Seeds of Disaster*, 28
[38] Doughty, *The Seeds of Disaster*, 23
[39] Doughty, *The Seeds of Disaster*, 24
[40] May, 472
[41] Doughty, *The Breaking Point*,,16
[42] Doughty, *The Breaking Point*, 112
[43] Rothburst, 27
[44] Rothburst, 17
[45] Rothburst, 59
[46] Rothburst, 62
[47] Doughty, *The Breaking Point*, 230-231
[48] May, 242
[49] May. 242
[50] May, 248
[51] May, 248
[52] May, 255-256
[53] May, 255
[54] May, 256
[55] Rothburst, 143-150
[56] May, 384
[57] Rothburst, 146
[58] Rothburst, 73
[59] Rothburst, 146
[60] Rothburst, 135-150

Chapter 5
Conclusion

The theory of Maneuver Warfare is comprised of the concepts of center of gravity, critical vulnerability, focus of effort, and the main effort. The Germans nested these four concepts into the comprehensive term *Schwerpunkt,* which through subtle linguistic variations provided much greater clarity in both a doctrinal and operational setting. Without the benefit of such a contextually versatile term, Marines must first properly define and then integrate or "nest" these four concepts, both doctrinally and operationally, throughout the battlefield framework to create the conditions for decisive action. As an historical example, *Fall Gelb* illustrates the inherent benefits that come from the seamless employment of these concepts throughout the strategic, operational, and tactical levels of war, as well as the advantage gained through the synergistic forces that generate and focus overwhelming combat power at the decisive point. It is the effective focus and integration of this concentrated combat power throughout the depth of the battlespace that produces decisive results on the modern battlefield, and has developed into the fundamental tenet of the Marine Corps concept of *Single Battle.*

Do Marines understand and can they execute these central Maneuver Warfare concepts within the framework of Single Battle as prescribed by MCDP 1-0 *Marine Corps Operations*? The MAGTF Staff Training Program (MSTP) has observed that "commanders and staffs of the MEF experience problems" understanding and integrating these concepts into the battlefield framework of the Single Battle.[1] Primarily this problem manifests itself in a failure by commanders to comprehend the decisive role of the main effort within the Single Battle framework. MSTP has observed the following

trends in MEF exercises: "1) multiple rapid shifts of the main effort [have occurred] without regard for achieving a decision, 2) subordinate commanders who do not understand their role as a main or supporting effort in achieving a decision, and 3) a failure to properly weight the main effort for success."[2] They have also observed "difficulties" in commanders developing and crafting their intent statement that provides "the implicit communications necessary to execute" Maneuver Warfare.[3] Additionally, MSTP believes that "Commanders have been unable to link the enemy's center of gravity and critical vulnerabilities and his own envisioned decisive action and desired effects with the main and supporting efforts."[4] These difficulties in understanding and executing the central concepts of Maneuver Warfare doctrine have resulted in a "failure to maximize combat power and focus subordinate initiative."[5]

MSTP observes every MEF level exercise, so its observations of the aforementioned deficiencies experienced by our premier warfighting headquarters in comprehending and employing our doctrine are important. If our most experienced commanders are having trouble undertanding or employing our doctrine after years of self-study and analysis, how can our most junior officers and staff non-commissioned officers be expected to properly employ it? The vague and inconsistent manner in which we define these central concepts in Marine Corps doctrinal manuals creates misunderstanding and confusion, and prevents the Corps from properly executing its warfighting doctrine. To eliminate this type of confusion, the Marine Corps needs to properly define the relationship of these four central concepts, explain how they are nested with one another, and how they should manifest themselves in the commander's intent statement.

In the Marine Corps' capstone manual, MCDP 1 *Warfighting,* the central tenets of our warfighting philosophy are expressed as follows: " To win, we must focus combat power towards a decisive aim. There are two related concepts that help us think about this - *centers of gravity and critical vulnerabilities.*" [6] The problem with this statement is that there are two additional concepts that are not mentioned and allow us to achieve decisive action. They are *focus of effort and main effort.* Without properly integrating or nesting these four concepts, our warfighting philosophy becomes unclear and decisive action becomes difficult to define and attain. MCDP 1 defines each term appropriately, but by failing to properly explain how they relate to one another the linkage is lost. It describes the relationship between center of gravity and critical vulnerabilities in the proper context, but fails to link the focus of effort or main effort with these two central concepts within the battlefield framework. In contrast, NDP 1 *Naval Warfare* describes these four concepts sequentially, clearly links them to the commander's vision for decisive action, and thus ensures that both the appropriate definitions and relationships are clearly expressed and that unity of effort throughout the depth of the battlespace is attained.

In Chapter 3 of NDP 1 *Naval Warfare* the central concepts of Maneuver Warfare are defined and integrated in the following manner:

Center of Gravity – The center of gravity is something the enemy must have to continue military operations – a source of strength. There can be only one center of gravity. Once identified, we focus all aspects of our military, economic, diplomatic, and political strength against it.

Critical Vulnerabilities – Opportunities to access and destroy a center of gravity are called critical vulnerabilities. To deliver a decisive blow to the enemy's center of gravity, we must strike at objectives affecting the center of gravity that are both critical to the enemy's ability to fight and vulnerable to our offensive actions. A critical vulnerability frequently is transitory or time-sensitive. A commander must rapidly devise plans to avoid the [enemy's] strengths, exploit the weaknesses, and direct the focus of

effort toward attacking the critical vulnerabilities so that he can ultimately collapse the enemy's center of gravity.

Focus of Effort – The focus of effort is the paramount objective to be accomplished by the force and is therefore always on the critical vulnerability that will expose the enemy's center of gravity. Since we concentrate all our resources and energy on that objective, designating the focus of effort is an important decision requiring the acceptance of risk.

Main Effort – Responsibility for attaining the focus of effort lies with the main effort. A commander unifies the force toward the focus of effort by assigning one unit as the main effort. The main effort is supported directly and indirectly by all of the force. When all elements of the force are focused, the strengths of each element can be brought to bear on the enemy effectively. There is only one main effort at a time and it is always directed against the focus of effort.

Commander's Intent – Decisive action requires unity of effort – getting all parts of the force to work together. Rapid action, on the other hand, requires a large degree of decentralization, giving those closest to the problem the freedom to solve it. To reconcile these seemingly contradictory requirements, we use our understanding of the main effort and a tool called the commander's intent. The commander's intent conveys the "end state," his desired result of action. It reflects his vision and conveys his thinking of the four central Maneuver Warfare concepts. We achieve unity of effort by promulgating the commander's intent, designating a focus of effort, and training subordinates to think in terms of the effect of their actions "two levels up" and "two levels down" in the chain of command.[7]

The Marine Corps should adopt the NDP 1 definition and verbiage regarding these concepts and their relationships with one another. As NDP 1 states: " Modern Maneuver Warfare requires integration and understanding of four key concepts – center of gravity, critical vulnerability, focus of effort, and main effort. We convey these concepts in context to our forces using a mechanism called the commander's intent."[8] By clearly defining and integrating these concepts, and expressing their integration in our commander's intent statement we enhance our ability to create a decisive operational design and articulate that to our forces. It will also bring our doctrinal understanding of these four central concepts closer to the original definition of *Schwerpunkt*, and facilitate decisive operations consistent with our concept of Single Battle.

[1] MSTP Staff, "Marine Corps Gazette Article # 12, Main and Supporting Efforts", *Marine Corps Gazette*, (February 2001): 1. Cited hereafter as *MSTP #12*
[2] *MSTP #12, 1.*
[3] MSTP Staff, "Marine Corps Gazette Article # 2, Commander's Intent: Easy to Understand and Hard to Articulate", *Marine Corps Gazette*, (February 2001): 1
[4] *MSTP #12, 1.*
[5] *MSTP #12, 1.*
[6] United States Marine Corps, *MCDP-1: Warfighting* (Washington, D.C.: Department of the Navy, 1997), 45. Cited hereafter as USMC, *Warfighting.*
[7] Department of the Navy, *Naval Doctrinal Publication 1: Naval Warfare* (Washington, D.C.: Department of the Navy, 1994), 35-39. Cited hereafter as DoN, *Naval Warfare*
[8] *Naval Warfare, 35.*

BIBLOGRAPHY

PRIMARY SOURCES

Archival Microfilm Sources

National Archives of the United States, Washington, D.C. (NARS) Series T-84/277, *Combat experiences of Lt. Braun of the 25th Panzer Regiment in the French campaign*,

Series T-315/R558, *Report of the 10th Panzer Division Training Plan*, 14 December 1939.

Series T-405/6, *Cooperation between Panzer Units and the Luftwaffe*, 12 September 1936.

Unpublished Manuscripts

United States Army Military History Institute (MSS) Series P-060b, *Manual for the Command and Combat Employment of Smaller Units*, No Date.

Military Intelligence Service Information Bulletin No. 18, *The German Armored Division.* Washington, DC: War Department, 15 June 1942.

German Army Manuals

Chef des Generalstabes. *The Attack in Positional Warfare*, Trans. BEF Intelligence (GHQ, 1918), 1 Jan 1918

Heeresdienstvorschrift 487. *Fuhrung und Gefect der verbundenen Waffen.* Trans. British Army Intelligence (GHQ, 1928), 1 Sept 1923.

Heeresdienstvorschrift 300. *Truppenfuhrung*. Trans. U.S. Army Command and General Staff College. 17 Oct 1933

German Army. *Instruction for the Employment of the Panzer Division*. Trans. R.L. DiNardo. 1 June 1938.

Published Documents

Clausewitz, Carl Von. *On War.* Eds. and trans. Michael Howard and Peter Paret. Princeton, NJ: Princeton University Press, 1984. The

De Jomini, Baron. *The Art of War.* Trans. Capt. G.H. Mendell and Lieut. W.P. Craighill. Westport, CT: Greenwood Press, 1980.

De Pardieu, Major. *A Critical Study of German Tactics and of The New German Regulations.* Trans. Captain Charles F. Martin. Fort Leavenworth, Ks: United States Army Cavalry Association, 1912.

Fredrick II, *Fredrick the Great and the Art of War.* Ed. and Trans. Jay Luvaas, New York: The Free Press, 1966.

Guderian, Major-General Heinz. *Achtung-Panzer! The Development of Armored Forces Their Tactics and Operational Potential.* Trans. Christopher Duffy. New York: Sterling Publishing Co. Inc., 1992.

Dairies and Memoirs

Bock, Generalfeldmarschall Fedor von. *The War Diary, 1939-1945.* Ed. Klaus Gerbet. Trans. David Johnston. Atglen, PA: Schiffer Publishing Ltd., 1996.

Guderian, Major-General Heinz. *Panzer Leader.* Trans. Constantine Fitzgibbon. New York: Da Capo Press, 1966.

Halder, Generalfeldmarschall Franz. *The Halder War Diary, 1939-1942.* Eds. Charles Burdick and Hans-Adolf Jacobsen. Novato, CA: Presidio Press, 1988.

Keitel, Generalfeldmarschall Wilhelm. *The Memoirs of Generalfeldmarschall Keitel.* Ed. Walter Gorlitz. Trans. David Irving. New York: Stein and Day, 1965.

Manstein, Generalfeldmarschall Erich von. *Lost Victories.* Ed. and trans. Anthony G. Powell. Novato, CA: Presidio Press, 1982.

Mellenthin, Major-General Friedrich Wilhelm von. *Panzer Battles.* Norman, OK: University of Oklahoma Press, 1977.

Moltke, Generalfeldmarschall Helmuth Graf von. *Moltke on the Art of War: Selected Writings.* Ed. Daniel J. Hughes. Trans. Harry Bell and Daniel Hughes. Novato, CA: Presidio Press, 1993.

Seeckt, General Hans von. *Thoughts of a Soldier.* Trans. Gilbert Waterhouse. London: Ernst Benn Limited, 1930.

SECONDARY SOURCES

Books

Addington, Larry H. *The Blitzkrieg Era and The German General Staff, 1865-1941.* New Brunswick, NJ: Rutgers University Press, 1996.

Chandler, David G. *The Campaigns of Napoleon: The Mind and Method of History's Greatest Soldier.* New York: Macmillan Publishing Company, 1966.

Chapman, Guy. *Why France Fell: The Defeat of the French Army in 1940.* New York: Holt, Rinehart and Winston, 1968.

Cooper, Matthew. *The German Army, 1939-1945.* Chelsea, MI: Scarborough House, 1978

Corum, James S. *The Roots of Blitzkrieg: Hans von Seeckt and German Military Reform.* Lawrence, KS: University Press of Kansas, 1992.

Creveld, Martin Van. *Fighting Power, German and U.S. Army Performance, 1939-1945.* Westport, CT: Greenwood Press, 1982.

Creveld, Martin Van and others. *Airpower and Maneuver Warfare.* Maxwell Airforce Base, AL: Air University Press, 1994.

Deighton, Len. *Blitzkrieg: From the Rise of Hitler to the Fall of Dunkirk.* New York: Alfred A. Knopf, 1979.

DiNardo, R.L. *Germany's Panzer Arm.* Westport, CT: Greenwood Press, 1997

Doughty, Robert Allan. *The Seeds of Disaster: The Development of French Army Doctrine, 1919-1939.* Hamden, CT: Archon Books, 1985.

Doughty, Robert Allan. *The Breaking Point: Sedan and the Fall of France, 1940.* Hamden, CT: Archon Books, 1990.

Dupuy, T.N. *A Genius for War, The German Army and General Staff 1807-1945.* Fairfax, VA: Hero Books, 1984.

English, John A. and Bruce I. Gudmundsson. *On Infantry.* Westport, CT: Praeger, 1994.

Fuller, Major-General J.F.C. *Armored Warfare.* Westport, CT: Greenwood Press, 1983.

Fuller, Major-General J.F.C. *The Conduct of War, 1789-1861.* New York: Da Capo Press, 1992.

Goerlitz, Walter. *History of the German General Staff: 1657-1945.* Trans. Brain Battershaw. New York: Praeger, 1957.

Gudmundsson, Bruce I. *Stormtroop Tactics, Innovation in the German Army, 1914-1918.* New York: Praeger, 1989.

Horne, Alistair. *To Lose A Battle: France 1940.* New York: Penguin Books, 1979.

Lucas, James. *Battlegroup: German Kampfgruppen Action of World War Two.* London: Arms and Armor Press, 1994.

Lupfer, Timothy T. *The Dynamics of Doctrine: The Changes in German Tactical Doctrine During the First World War.* Fort Leavenworth, Ks: Combat Studies Institute, 1981.

Maneuver Warfare, An Anthology. Ed. Richard D. Hooker. Novato, CA: Presidio, 1993.

May, Ernest R. *Strange Victory: Hitler's Conquest of France.* New York: Hill and Wang, 2000.

Miksche, Major F.O. *Attack: A Study Of Blitzkrieg Tactics.* New York: Random House, 1942.

Military Effectiveness. Vol. 2 The Interwar Period. Eds. Allan R. Millet and Williamson Murray. Winchester, MA: Allan and Unwin Inc., 1988.

Military Effectiveness. Vol. 3 The Second World War. Eds. Allan R. Millet and Williamson Murray. Winchester, MA: Allan and Unwin Inc., 1988.

Military Innovation in the Interwar Period. Ed. Williamson Murray and Allan R. Millet. New York: Cambridge University Press, 1996.

Mitcham, Samuel W. Jr. *Hitler's Field Marshals and Their Battles.* New York: Cooper Square Press, 1990.

Murray, Williamson. *German Military Effectiveness.* Baltimore, MD: The Nautical and Aviation Publishing Company, 1992.

Perret, Bryan. *Knights of the Black Cross: Hitler's Panzerwaffe and its leaders.* New York: St. Martin's Press, 1986.

Rothbrust, Florian K. *Guderian's XIX Panzer Corps and The Battle of France: Breakthrough in the Ardennes, May 1940.* New York: Praeger, 1990

Samuels, Martin. *Doctrine and Dogma: German and British Infantry Tactics in the First World War.* New York: Greenwood Press, 1992.

Taylor, Tedford. *The March of Conquest: The German Victories in Western Europe, 1940.* New York: Simon and Schuster, 1958.

The Challenge of Change: Military Institutions and New Realities, 1918-1941. Eds. Harold R. Winton and David R. Mets. Lincoln, NE: University of Nebraska Press, 2000.

White, Charles Edward. *The Enlightened Soldier, Scharnhorst and Militarische Gesellschaft in Berlin, 1801-1805.* New York: Praeger, 1989.

Official Histories

Majer, Klaus A., and others. *Germany's Initial Conquests in Europe, Vol. 2 of Germany and the Second World War.* Trans. Dean S. McMurry and Ewald Osers. Oxford: Clarendon Press, 1991.

Professional Journals

Creveld, Martin Van. "*On Learning From the Wehrmacht and Other Things.*" Military Review, January 1988. 63-71.

Czeslik, Lieutenant Colonel Knut. " *Auftragstaktik: Thoughts of a German Officer.*" Infantry, January-February 1991. 10-11.

Gudmundsson, Bruce I. "*Main Effort*" The Tactical Notebook, March 1993, 1-3.

Horne, Alistair. "*Breakthrough At Sedan.*" The History of The Second World War, May 1966. 214-224.

Kerkemeyer, Captain Frank A. "*Auftragstaktik.*" Infantry, November-December 1987. 28-30.

Lewis, S.J. "*Reflections on German Military Reform.*" Military Review, August 1988. 60-69.

Lind, William S. " *Tactics in Maneuver Warfare.*" Marine Corps Gazette, September 1981. 36-39.

Lind, William S. " *Why the German Example*?" Marine Corps Gazette, June 1982, 58-61.

MSTP Staff. *"Marine Corps Gazette Article # 12:Main and Supporting Efforts."* Marine Corps Gazette, February 2001.

MSTP Staff. *"Marine Corps Gazette Article #2: Commander's Intent: Easy to Understand and Hard to Articulate."* Marine Corps Gazette, February 2001.

Monographs

Richardson, Major Rick S. *Fall Gelb and the German Blitzkrieg of 1940: Operational Art?* Monograph. School of Advanced Military Studies, United States Army Command and General Staff College. Ft. Leavenworth, KS. May 1999.

Tucker, Major Craig A. *False Prophets: The Myth of Maneuver warfare and the Inadequacies of FMFM-1, Warfighting*. School of Advanced Military Studies, United States Army Command and General Staff College. Ft. Leavenworth, KS. May 1995.

Think-Tank Reports

Battelle Columbus Laboratories Tactical and Technology Center (BCLTTC). *Conversation with Major-General F.W. von Mellenthin: Conference on Armored Warfare in World War II.* Columbus, OH: BCLTTC, May 1979.

Battelle Columbus Laboratories Tactical and Technology Center (BCLTTC). *Conversation with General Herman Balck: Conference on Armored Warfare in World War II.* Columbus, OH: BCLTTC, July 79.

United States Marine Corps Doctrinal Manual

United States Marine Corps. Marine Corps Doctrinal Publication (MCDP) 1. *Warfighting.* Washington, DC: Department of the Navy, June 1997.

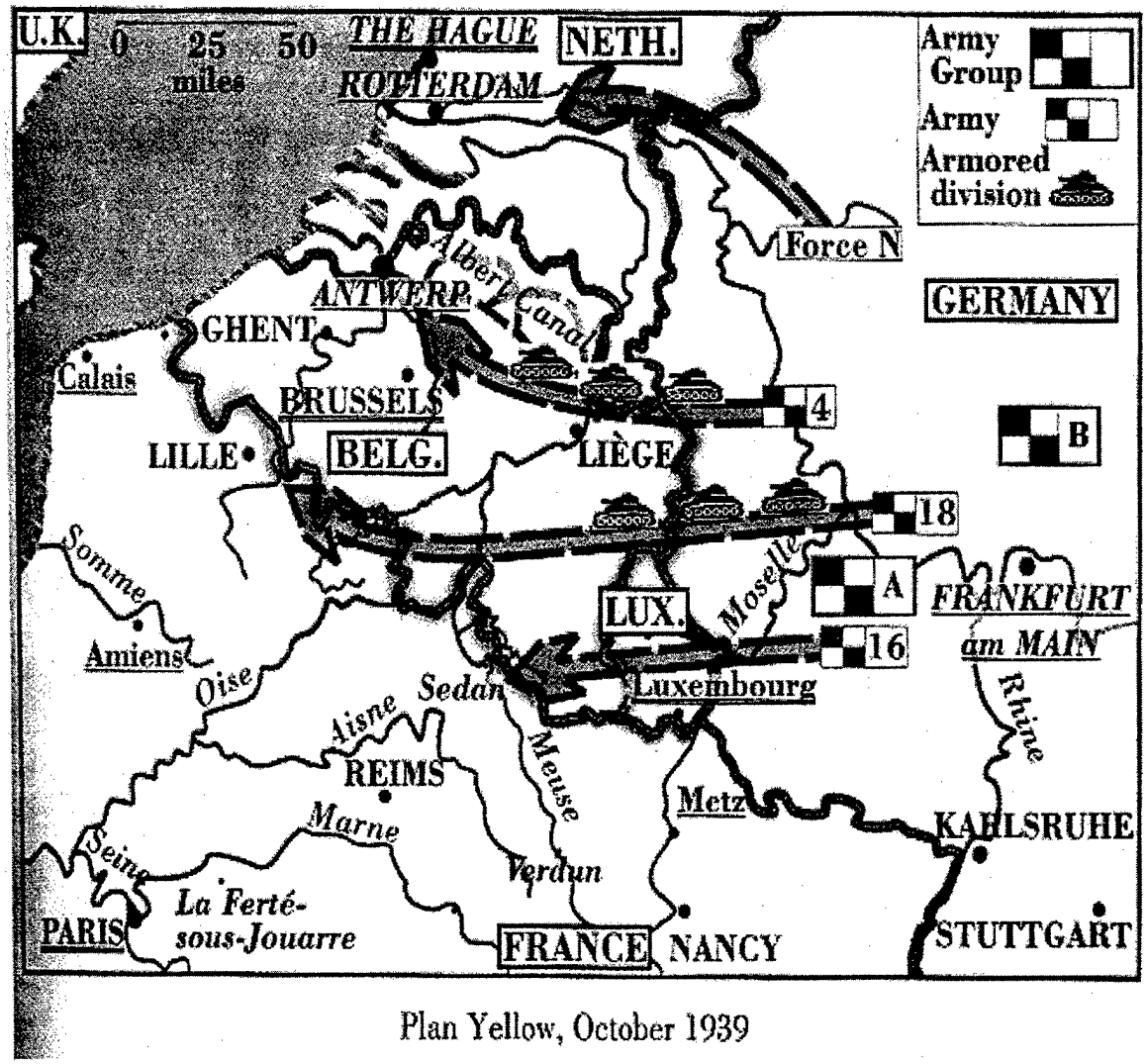
United States Marine Corps, *United States Marine Corps Warfighting Concepts for the 21st Century,*(Washington, D.C.: Department of the Navy, 2001.

United States Marine Corps, *MCDP1-0: Marine Corps Operations,* Washington, D.C.: Department of the Navy, 2001.

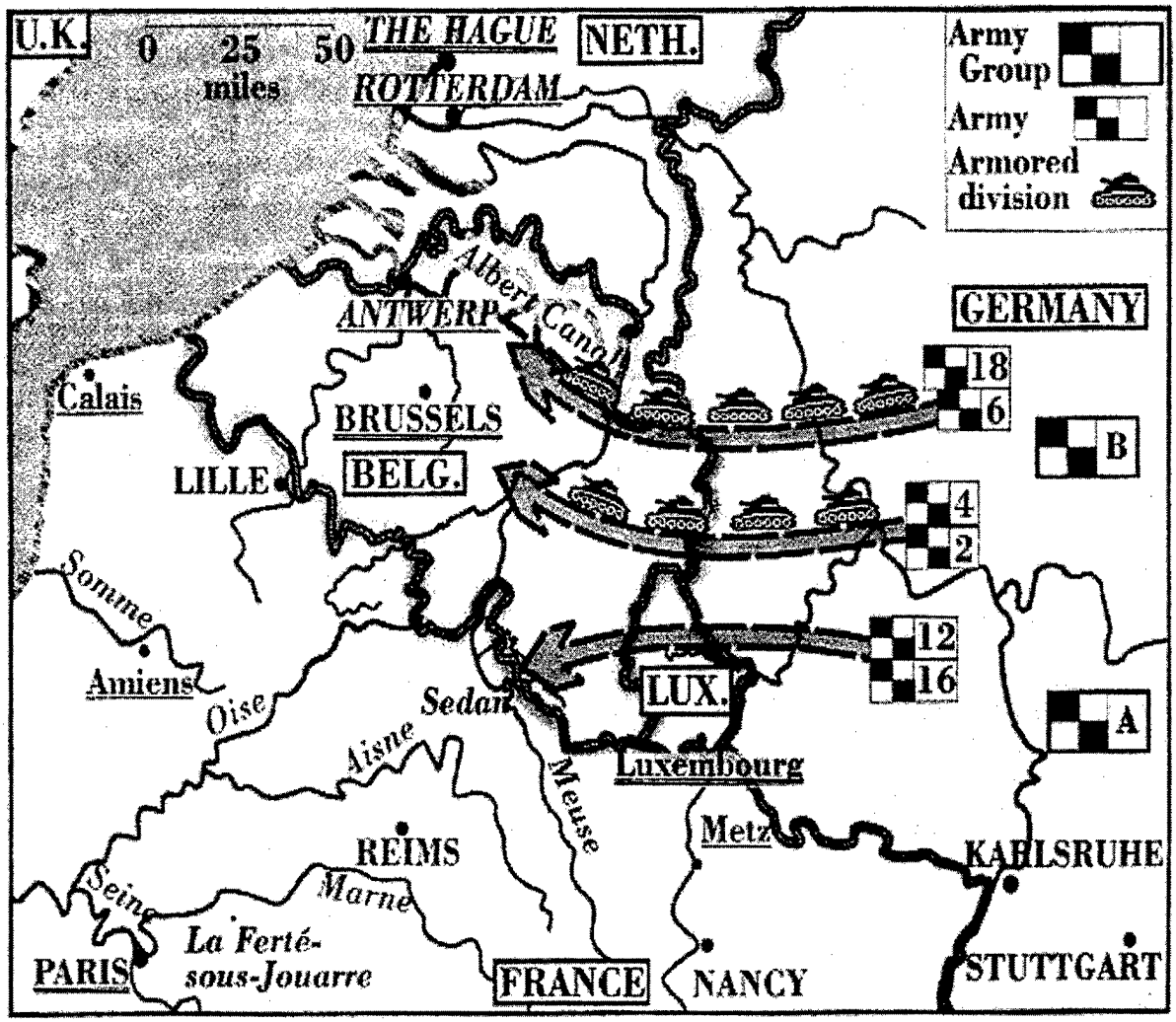
United States Navy Doctrinal Manuals

Department of the Navy, *Naval Doctrinal Publication 1: Naval Warfare,* Washington, D.C.: Department of the Navy, 1994.

Appendix A: Maps

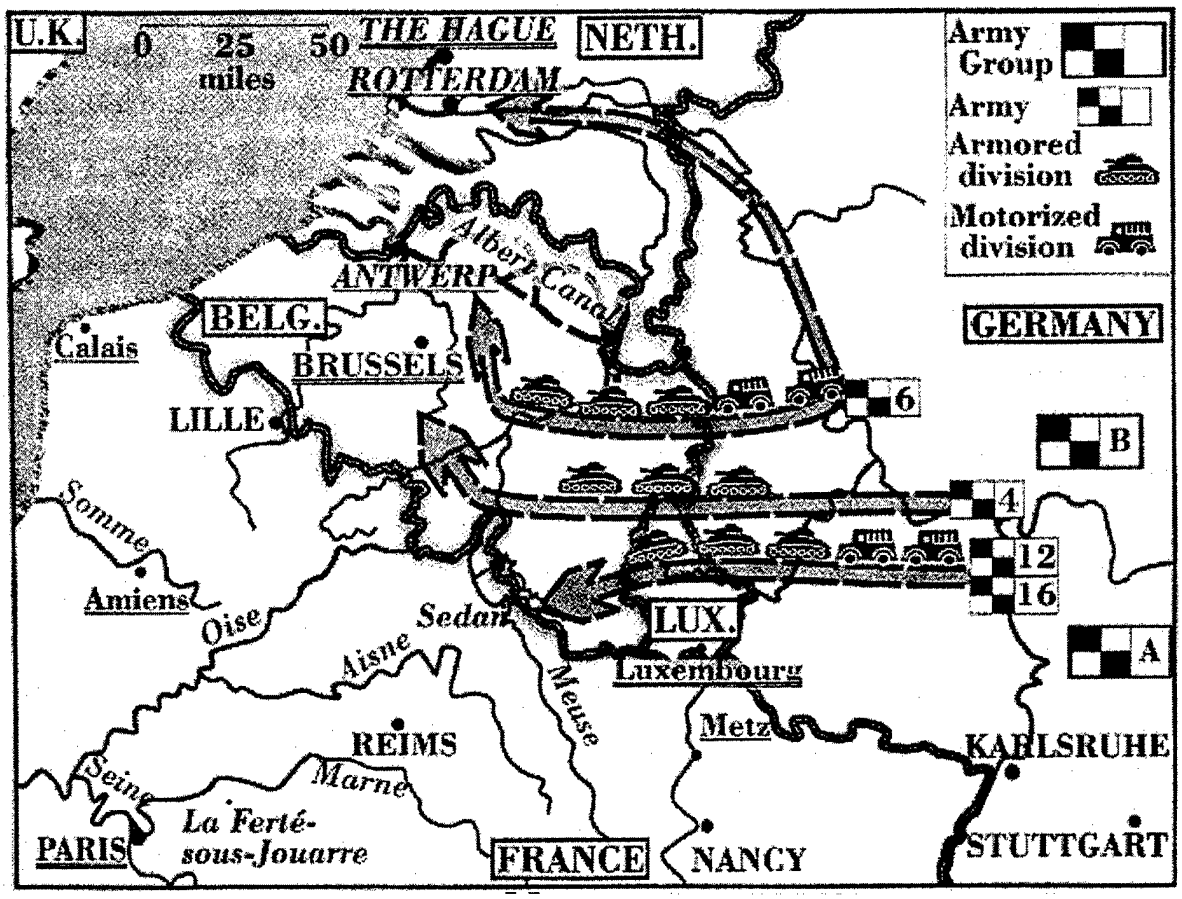


Plan Yellow, October 1939



Plan Yellow, November 1939

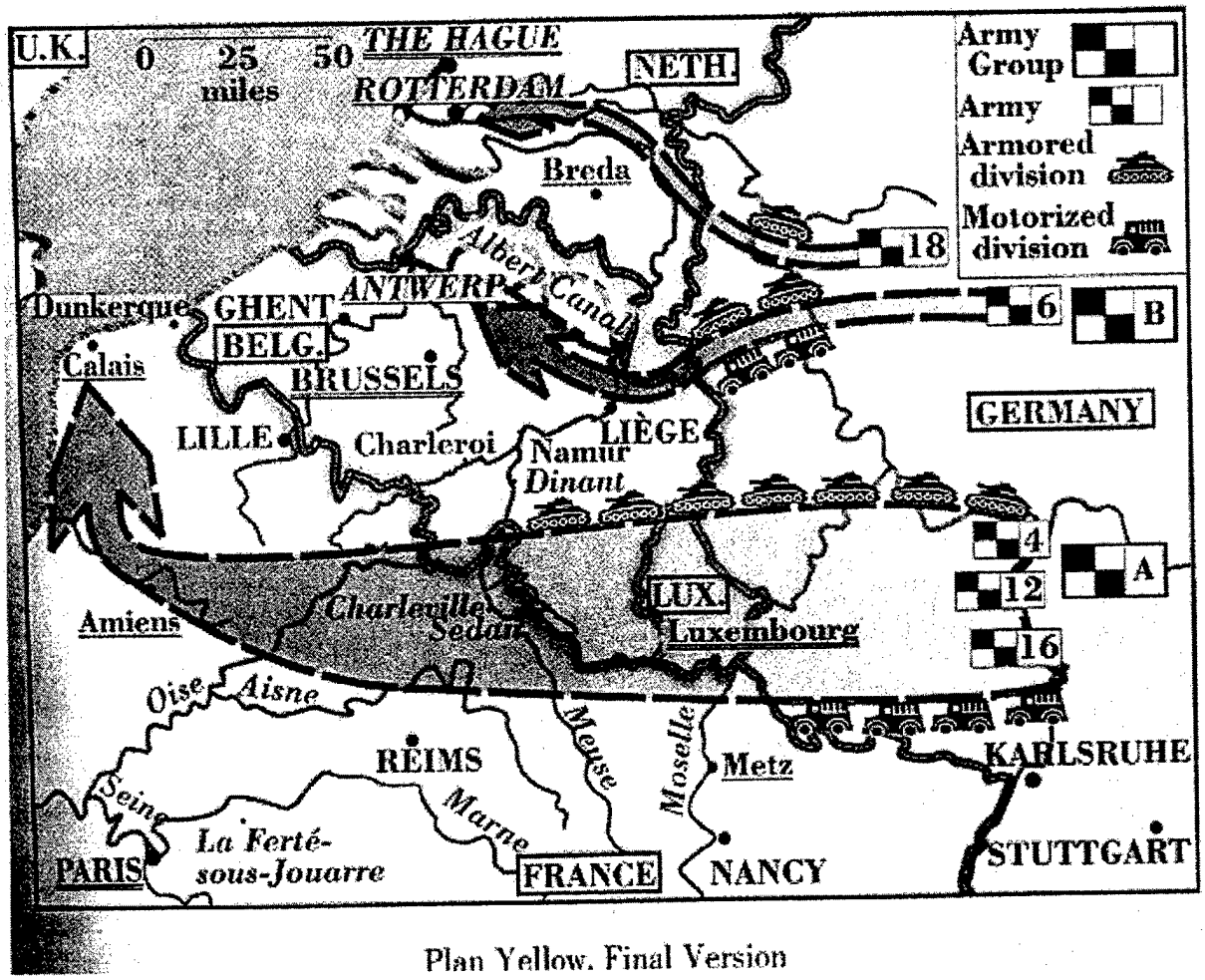
MAP 2



Plan Yellow, December 1939

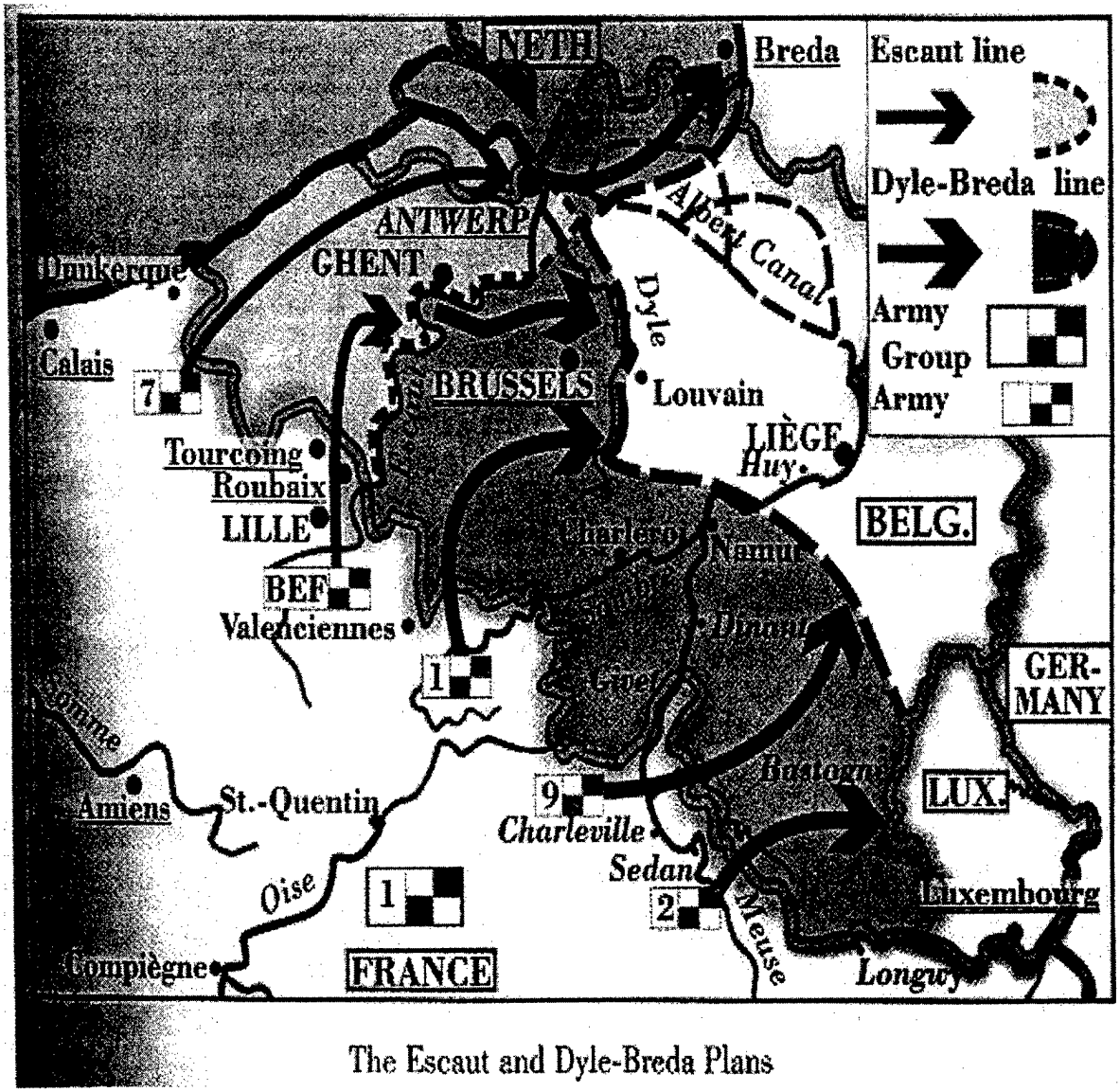
MAP 3

MAP 4



Plan Yellow. Final Version

MAP 5



The Escaut and Dyle-Breda Plans

MAP 6

Appendix B: Fire Support Charts

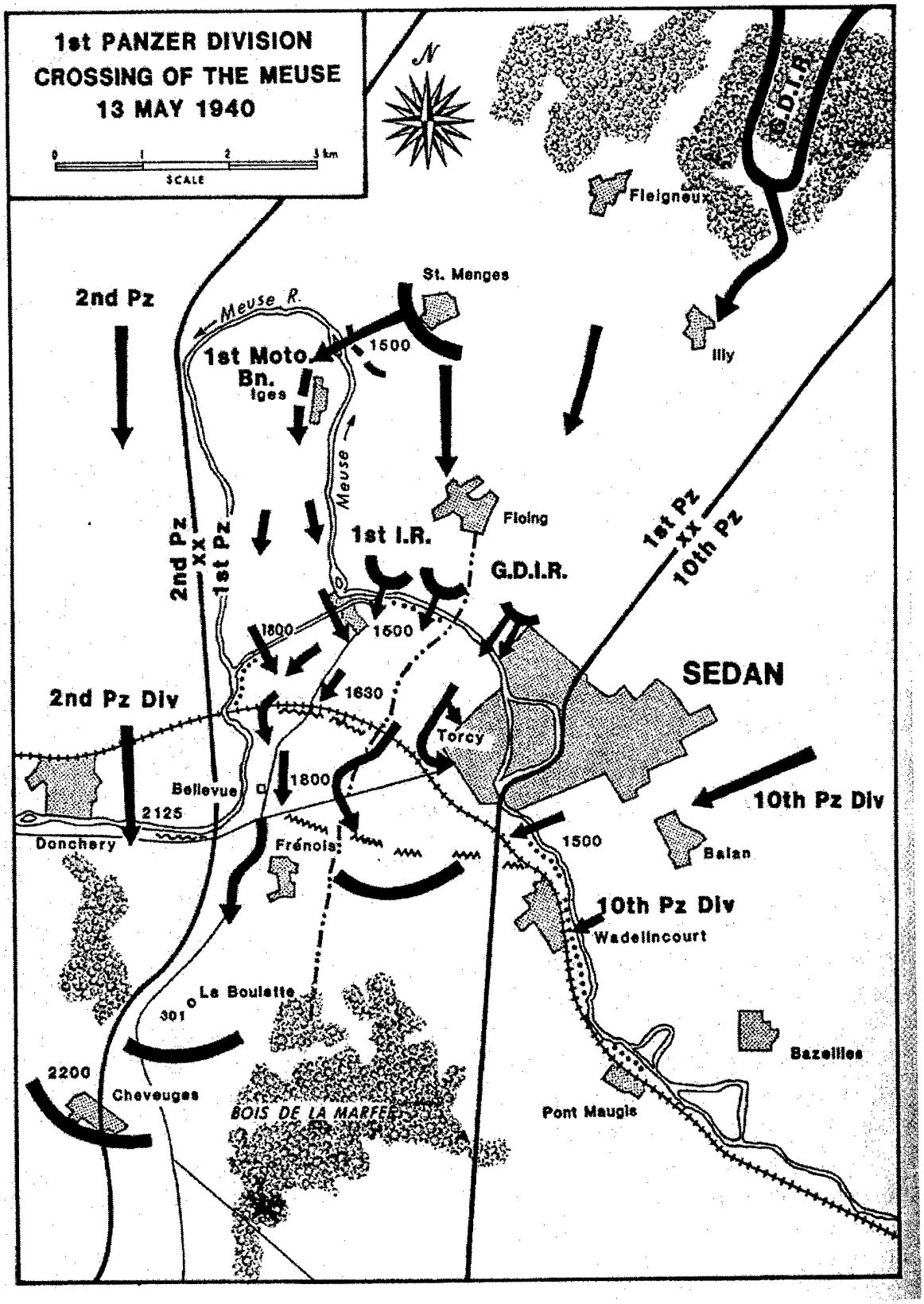


Figure 1: Close Air Support Map

Figure 2: Artillery Fire Plan Sketch

Figure 1

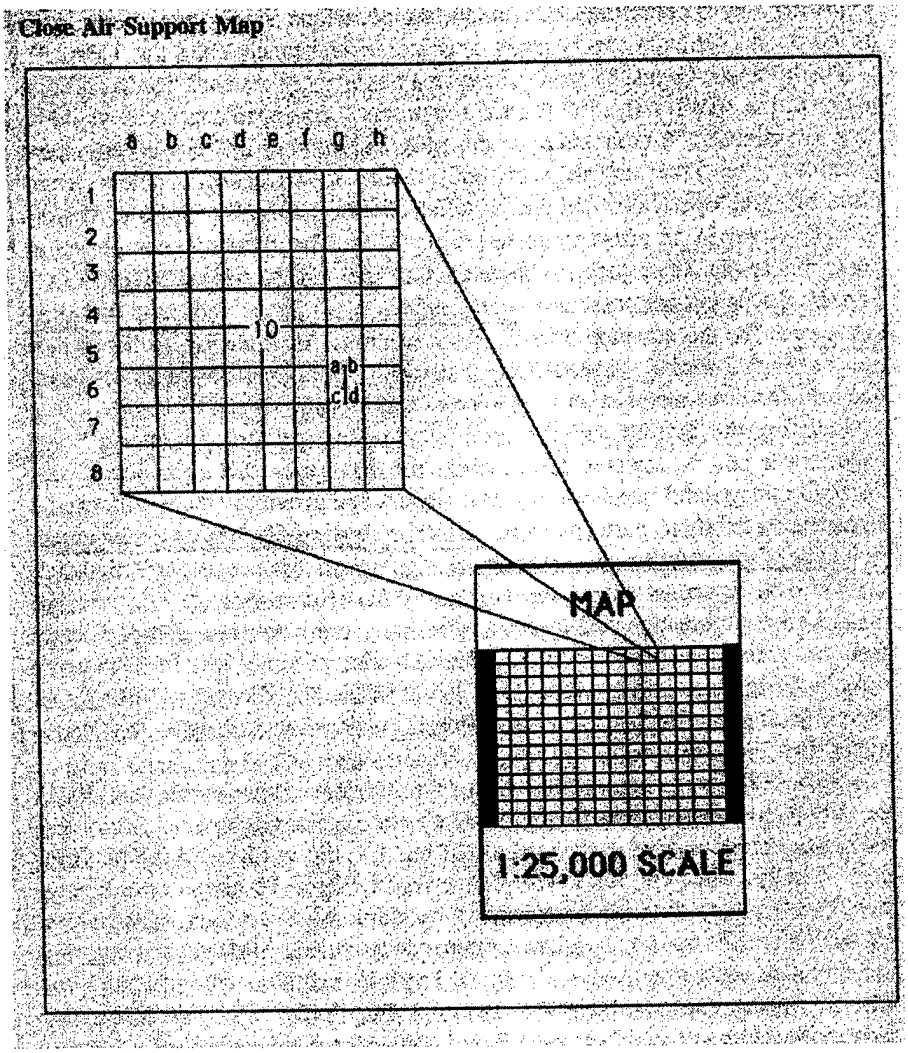
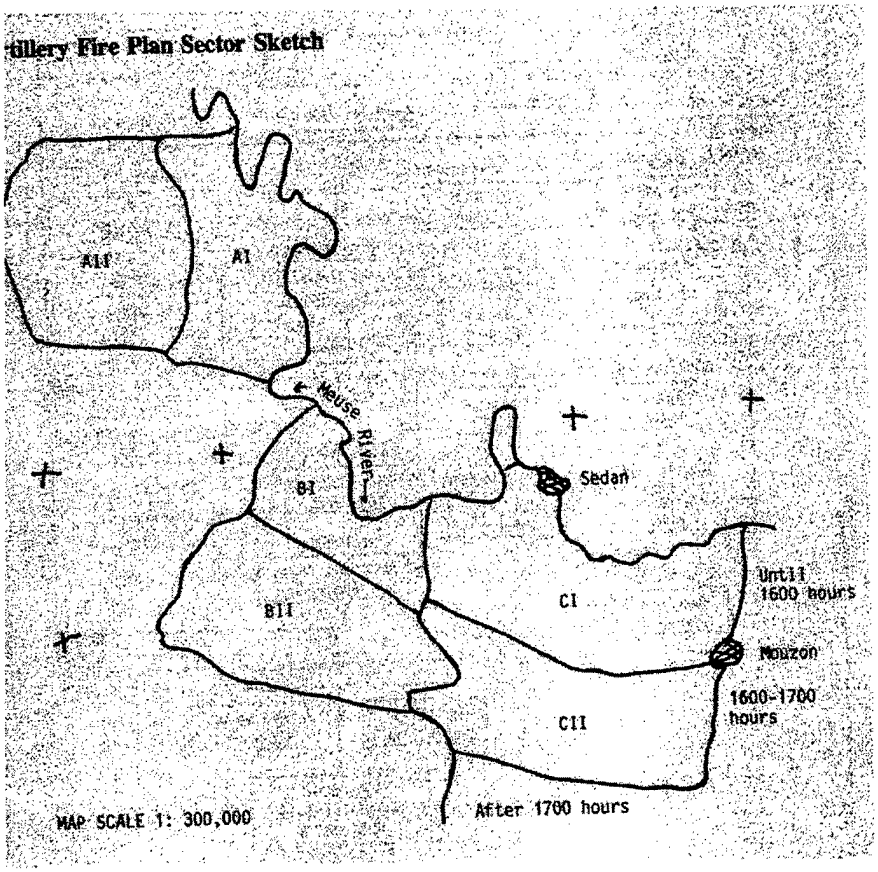

Close Air Support Map
a b c d e f g h
1
2
3
4
5
6
7
8
10
a,b
c,d
MAP
1:25,000 SCALE

Figure 2


illery Fire Plan Sector Sketch
AII
AI
Meuse River
BI
Sedan
BII
CI
Until
1600 hours
Mouzon
1600-1700
hours
CII
After 1700 hours
MAP SCALE 1: 300,000

Appendix C: Organizational Charts

Chart # 1: High Command of the Wehrmacht

Chart # 2: OKW

Chart # 3: OKH

Chart # 4: Order of Battle: Battle of France, May 1940

Chart # 5: Order of Battle: Army Group A, May 1940

Chart # 6: Order of Battle: French First Army Group, May 1940

Chart # 1: High Command of the Wehrmacht

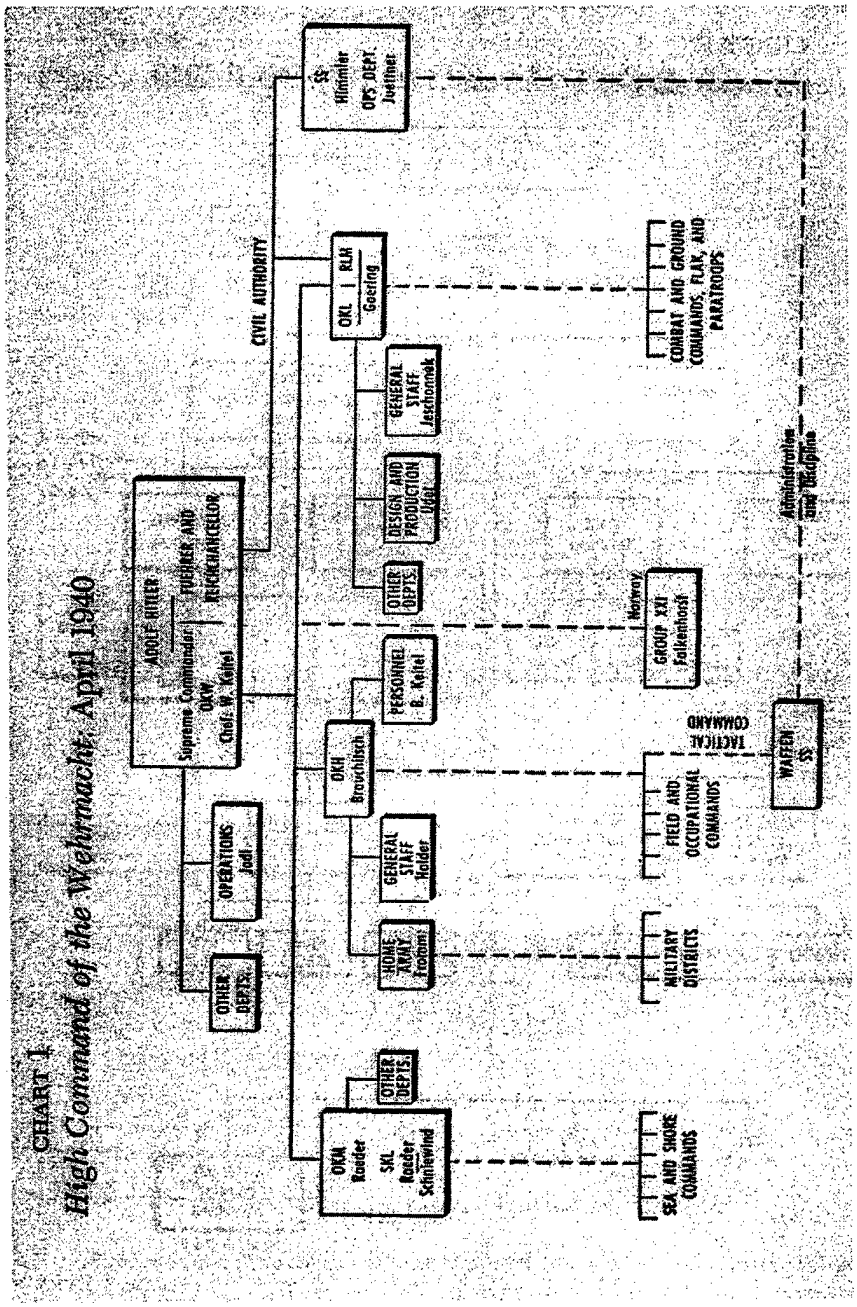


Chart # 2: OKW

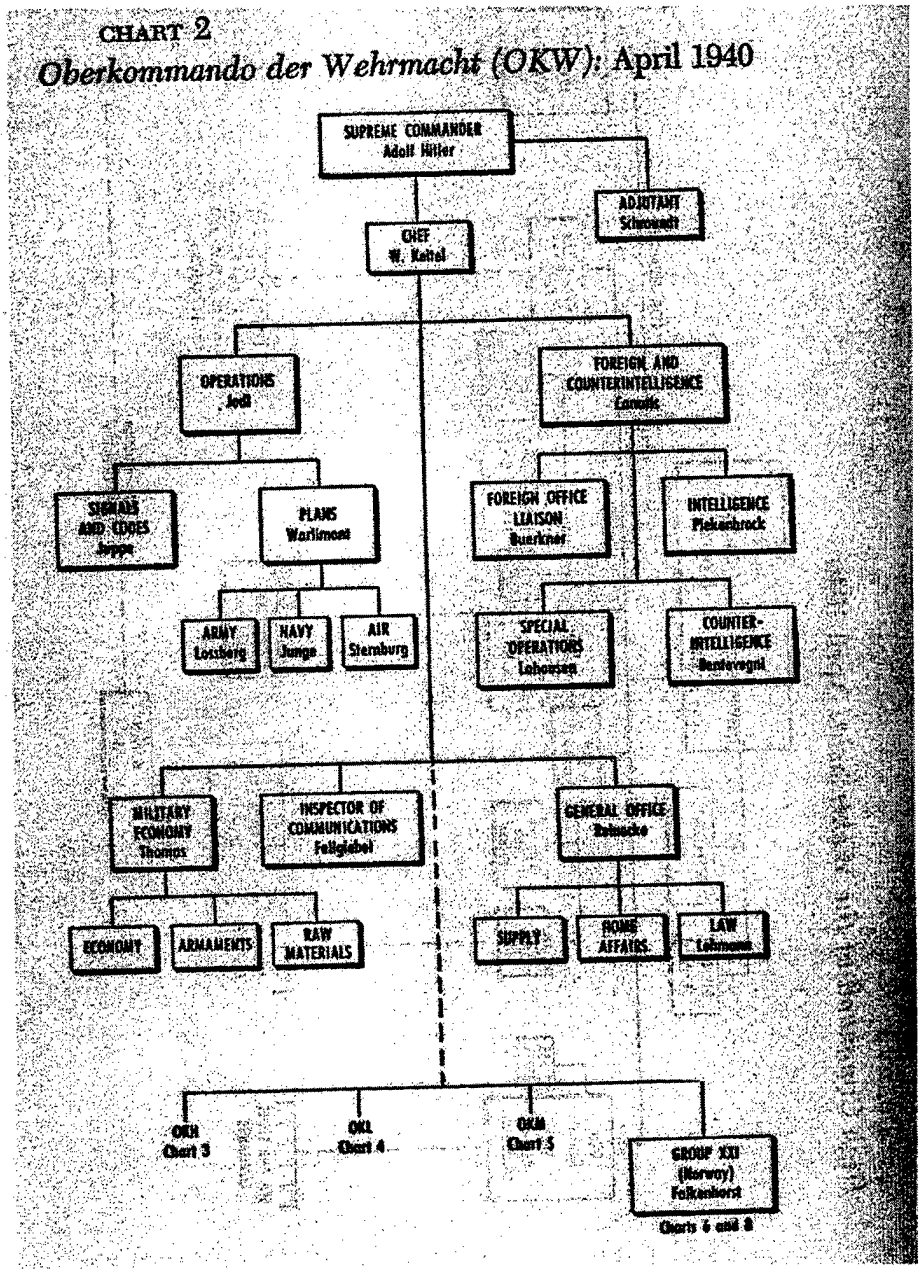


CHART 2
Oberkommando der Wehrmacht (OKW): April 1940
SUPREME COMMANDER
Adolf Hitler
ADJUTANT
Schmundt
CHIEF
W. Keitel
OPERATIONS
Jodl
FOREIGN AND COUNTERINTELLIGENCE
Canaris
SIGNALS AND CODES
Jeppe
PLANS
Warlimont
FOREIGN OFFICE LIAISON
Buerkner
INTELLIGENCE
Piekenbrock
ARMY
Lossberg
NAVY
Junge
AIR
Sternburg
SPECIAL OPERATIONS
Lahousen
COUNTER-INTELLIGENCE
Bentivegni
MILITARY ECONOMY
Thomas
INSPECTOR OF COMMUNICATIONS
Fellgiebel
GENERAL OFFICE
Reinecke
ECONOMY
ARMAMENTS
RAW MATERIALS
SUPPLY
HOME AFFAIRS
LAW
Lehmann
OKH
Chart 3
OKL
Chart 4
OKM
Chart 5
GROUP XXI
(Norway)
Falkenhorst
Charts 6 and 8

Chart # 3: OKH

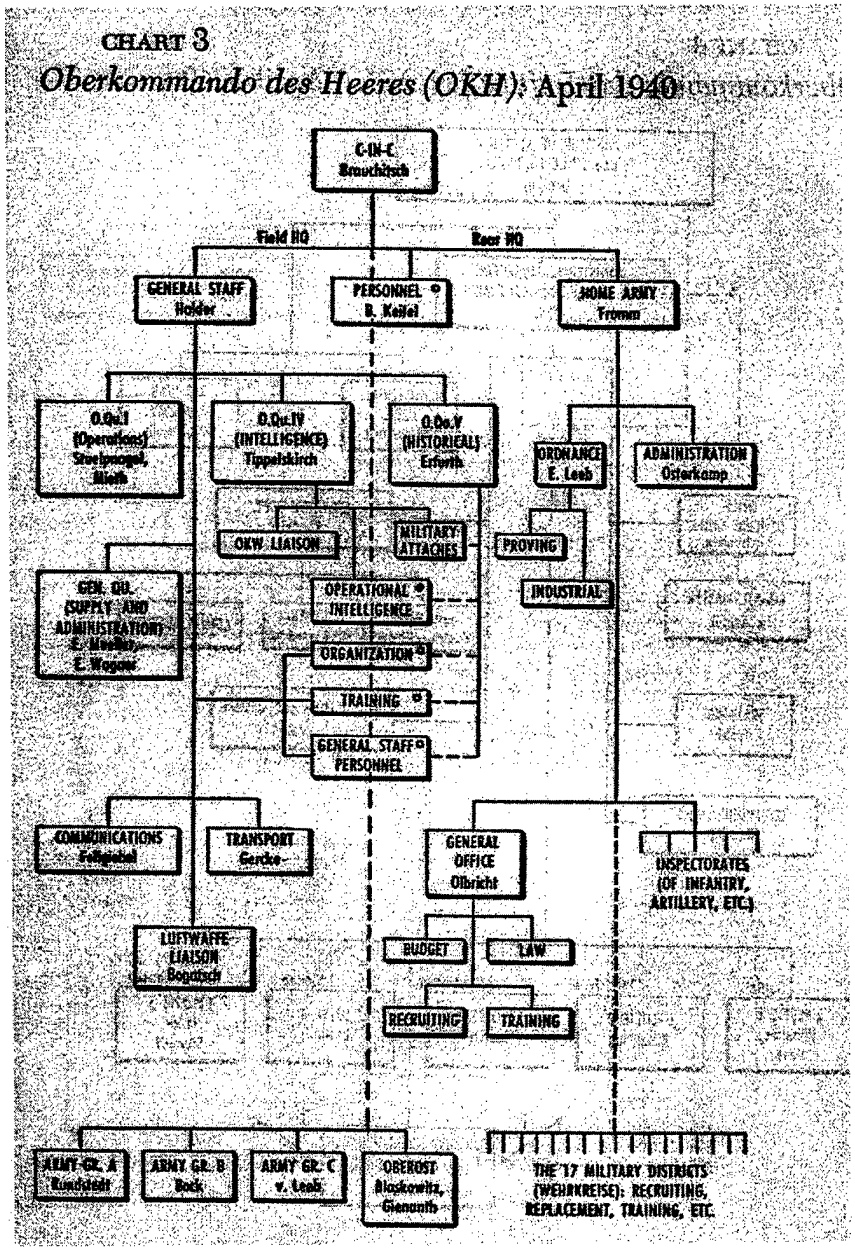


CHART 3
Oberkommando des Heeres (OKH): April 1940
C-IN-C
Brauchitsch
Field HQ
Rear HQ
GENERAL STAFF
Halder
PERSONNEL
B. Keitel
HOME ARMY
Fromm
O.Qu.I
(Operations)
Stieve/Wagner/
Waeth
O.Qu.IV
(INTELLIGENCE)
Tippelskirch
O.Qu.V
(HISTORICAL)
Erfurth
ORDNANCE
E. Leeb
ADMINISTRATION
Osterkamp
OKW LIAISON
MILITARY ATTACHES
PROVING
INDUSTRIAL
GEN. QU.
(SUPPLY AND
ADMINISTRATION)
E. Wagner
OPERATIONAL
INTELLIGENCE
ORGANIZATION
TRAINING
GENERAL STAFF
PERSONNEL
COMMUNICATIONS
Fellgiebel
TRANSPORT
Gercke
GENERAL
OFFICE
Olbricht
INSPECTORATES
(OF INFANTRY,
ARTILLERY, ETC.)
LUFTWAFFE
LIAISON
Bogatsch
BUDGET
LAW
RECRUITING
TRAINING
ARMY GR. A
Rundstedt
ARMY GR. B
Bock
ARMY GR. C
v. Leeb
OBEROST
Blaskowitz,
Giesenitz
THE 17 MILITARY DISTRICTS
(WEHRKREISE): RECRUITING,
REPLACEMENT, TRAINING, ETC.

Chart # 4: Order of Battle: Battle of France, May 1940

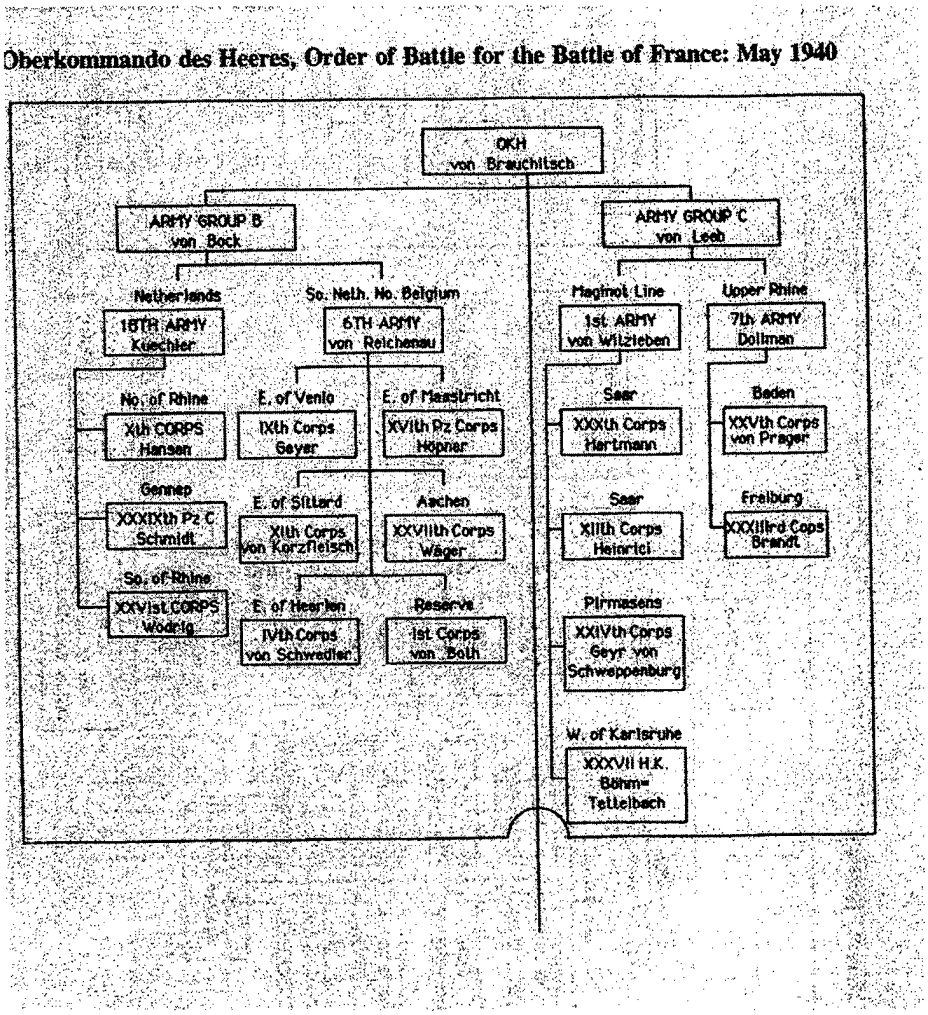


Chart # 5: Order of Battle: Army Group A, May 1940

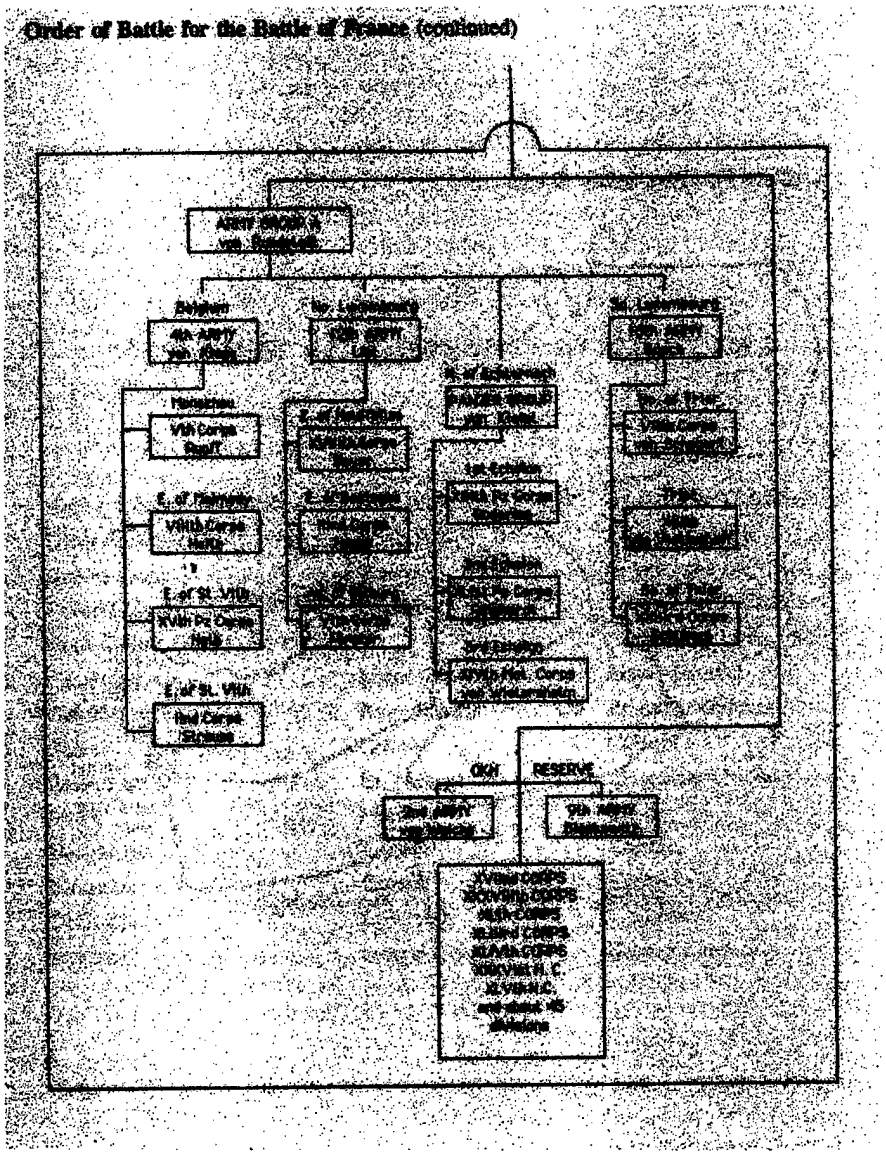
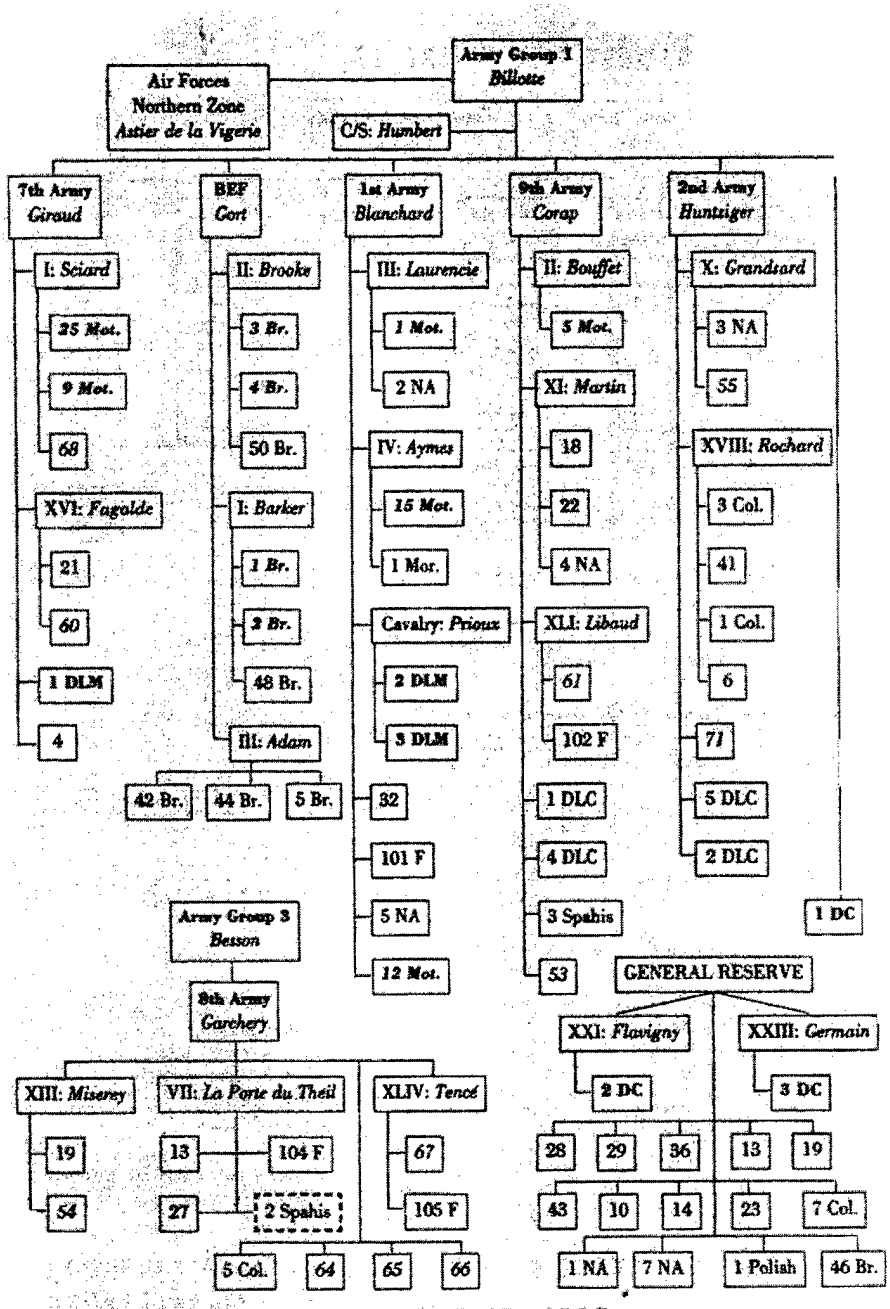


Chart # 6: Order of Battle: French First Army Group, May 1940



ALLIED ORDER OF BATTLE, MAY 10, 1940