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This study is an historical analysis of the operational methods of two men who commanded large military formations with great success during World War II: Colonel-General Heinz W. Guderian of the German Army; and General George S. Patton, Jr. of the American Army. The focus of the study is on each man's conduct of operational art, the connecting link between tactics and strategy. The study analyzes the writings and campaigns of Guderian and Patton and attempts to identify the tenets or principles by which each man guided his conduct of

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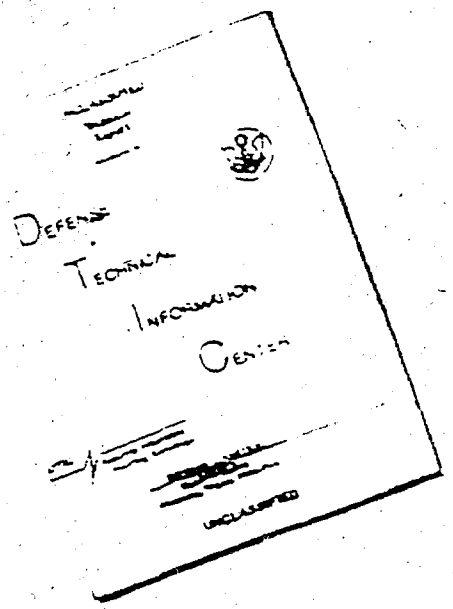


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Operational art. The study then compares the tenets each man applied in his conduct of warfare to discover whether there were any principles common to their operational methods. Finally, the study suggests what implications common tenets at the operational level of war might have for Airland Battle Doctrine.

# THE OPERATIONAL TENETS OF GENERALS

# HEINZ GUDERIAN AND GEORGE S. PATTON, JR.

A thesis presented to the Faculty of the U.S. Army Command and General Staff College in partial fulfillment of the requirements for the degree

MASTER OF MILITARY ART AND SCIENCE

by

GEORGE A. HIGGINS, MAJ, USA
B.S., United States Military Academy, 1972
M.A., University of Virginia, 1980



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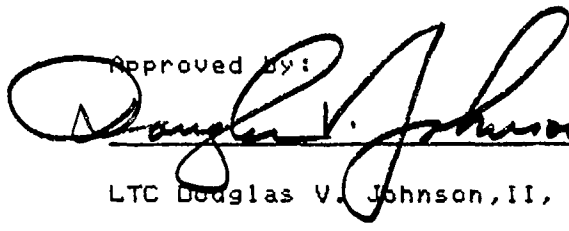

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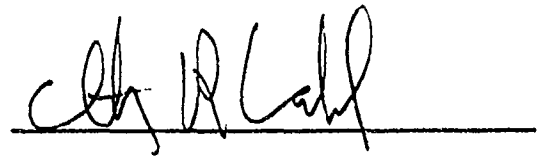

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## ABSTRACT

THE OPERATIONAL TENETS OF GENERALS HEINZ GUDERIAN AND GEORGE S. PATTON, JR.: An analysis and comparison of the operational tenets of two successful World War II commanders, by Major George A. Higgins, USA, 211 pages.

This study is an historical analysis of the operational methods of two men who commanded large military formations with great success during World War II: Colonel-General Heinz W. Guderian of the German Army; and General George S. Patton, Jr. of the American Army. The focus of the study is on each man's conduct of operational art, the connecting link between tactics and strategy. The study analyzes the writings and campaigns of Guderian and Patton and attempts to identify the tenets or principles by which each man guided his conduct of operational art. The study then compares the tenets each man applied in his conduct of warfare to discover whether there were any principles common to their operational methods. Finally, the study suggests what implications common tenets at the operational level of war might have for Airland Battle Doctrine.

The study concludes that Guderian and Patton shared six common tenets in their conduct of operational art and suggests that the American Army's current organizations at the division and corps levels may not be suitable to conduct the sort of agile operations that will be required on a future battlefield. As well, we must ensure that doctrinal foundations for joint operations involving air and ground forces--as a minimum--are in place before war breaks out. It also suggests that we need to get together with our European Allies and adopt a common doctrinal approach to warfighting in Western Europe, one that supports a common theater strategy. Finally, the study concludes that the American Army should continue to study the history of warfare and learn its lessons.

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# CHAPTER 1: INTRODUCTION

The recent resurgence of interest in operational art in the American Army has spawned historical comparisons that suggest valid implications for the contemporary American Army's preparations for the conduct of operational art. Of particular interest in such comparisons are the operational styles of successful commanders such as Generals Heinz Guderian and George S. Patton, Jr. To many professional soldiers and students of military history alike, those names have special meaning. The reason for that probably lies in the fact that each man was an eminently successful commander in World War II. But that answer, of course, only begs the further and more meaningful question: Why was each of these men successful in commanding large formations of men in combat? It is not only a question worth asking, it is one worth taking the time to answer as well. This thesis represents an attempt to partially answer that question by answering the question "Were there any tenets common to the operational methods of Generals Heinz Guderian and George S. Patton, Jr. in World War II?" The answer to this question will provide, in part at least, an explanation for the success of these two men in commanding large military formations. If it turns out, for example, that each man adhered to a set of common tenets in his planning and conduct of

operational art, then that would serve as some evidence that success in operational art derives, in part, from the correct application of certain tenets. Given the focus of this thesis, research into the operational methods of Guderian and Patton could not, of course, give a full account of the successes of those men because it fails to take into consideration other relevant factors such as personal leadership, mistakes of opposing commanders, and training status of enemy and friendly units, to mention just a few. But it would, nonetheless, help illuminate the principled basis for the employment of forces at the operational level of war, a subject of considerable interest today because doctrinally the American Army is committed to fighting in a fashion remarkably similar to the manner of combat in World War II, as will soon be pointed out.

At this point, however, one may well ask why Generals Guderian and Patton were selected for the purposes of this study. In part, the answer has already been given. Doctrinally, contemporary Airland Battle envisions the commitment of U.S. Army forces to combat on a battlefield of the future which is likely to be fluid, dynamic, lethal, and fast moving. Such a description of the modern battlefield goes a long way toward describing the World War II battlefields on which Guderian and Patton fought. Moreover, aside from temporary reverses suffered by both, each of these soldiers was immensely successful in commanding at the operational level of war: corps and echelons above corps level. Because success in battle is the final

arbiter in war, there is not much else to be said about these men except that they serve, if any do, as paradigmatic examples of successful planners and executors of operational art.

A final point worth making about the selection of these men for the focus of this study is that the diversity of their cultural, social, and political heritages as well as the diverse natures of the theaters in which they fought adds a breadth to this investigation that would otherwise be absent. The value of this feature of the study is that if it should turn out that there is a shared principled basis for operational art between Patton and Guderian, then already we have evidence that such tenets are not culturally or geographically specific.

Another question which naturally suggests itself is "Why do a study such as this at all?" This question, too, has been answered partially already but demands fuller treatment. First, the U.S. Army's current doctrine as reflected in the 1982 version of FM 100-5, Operations, envisions the necessity for employing and sustaining operational-level forces--corps and echelons above corps--on a fluid, non-linear, lethal, integrated, and dynamic battlefield. Such a battlefield will be integrated in the sense that opposing forces will not only fight with light and heavy armored and mechanized combined arms forces in joint operations but also employ chemical and nuclear fires as a matter of course. And, the chemical and nuclear dimensions notwithstanding, the historical precedents which

most closely approximate the conditions of such future combat are the highly fluid campaigns which occurred in World War II in virtually every theater.

Second, and equally important, the current doctrinal requirement is not merely to execute tactical operations but to plan, execute, and control the maneuver of large bodies of forces--corps, armies, and army groups. Here the rub is two-fold: (1) the American Army has had no occasion or requirement to plan and execute operational art since Korea; (1) and as a result, (2) it has neither an officer corps well schooled in operational art nor a firm doctrinal grasp on the principled basis for how to fight large units. Taken together, these facts present a dilemma. Although current U.S. Army doctrine--Airland Battle--requires the American Army to fight corps and armies, it does not have the properly trained leadership to plan and conduct operational art. Moreover, there does not appear to be an abundance of contemporary literature forthcoming which addresses the principled basis for operational art. Consequently, the answer to the question "Why this study?" lies in a recognition of the large vacuum of experience and knowledge in the U.S. Army about the subject and the absence of any recent literature on the subject.

Having considered what this thesis focuses on and why, we need to establish some definitions and outline a methodology which serve as the logical framework for the arguments that are developed herein. First, for any discussion on a technical

subject such as military art to be fruitful, indeed intelligible, a shared vocabulary is a prerequisite. So, before launching into a discussion of the operational tenets of Guderian and Patton, it would be wise to come to some agreement on what is meant by some key words and concepts used throughout this thesis.

For example, if this study proposes to identify and define operational tenets employed by the commanders under consideration, then one must have some idea of what an "operational tenet" is because it is not immediately clear how one might go about finding something without having some fairly clear idea about what is being sought. In short, "What is an operational tenet?" is a question that readily suggests itself. And the temptation here is to offer a synonym such as "rule" or "law," but it should be evident that such a step not only complicates the problem but begs the question besides. Procedurally, we first need to make it clear what is meant by terms such as "operational art" and "the operational level of war," and then tackle the problem of what is meant by "tenet."

It is generally acknowledged by contemporary theorists that any comprehensive theory of war must include at least three levels of war: strategic, operational, and tactical.(2) As suggested earlier, most American Army officers probably have a firm understanding of current tactical doctrine and, to a significantly lesser degree, an understanding of theater and global military strategy. What is almost wholly absent in our

officer corps is a firm understanding of the dimension of war fighting which connects tactical operations to theater and global military strategy--the operational level of war. Whereas tactical art focuses on the winning of tactical engagements and battles and strategic art success at the theater level, the operational level of war focuses on the planning and conduct of campaigns.(3) Simply stated, operational art involves the maneuver of large units such brigades, divisions, and corps. It may sharpen the focus of the discussion to say that generally tactical art is planned and executed at division level and below while operational art falls to the corps and field armies. It would be foolish, however, to draw the line between these two levels of war too sharply or insist that it remain where initially drawn. A division, for example, may be given an operational mission in a particular case. The operational level of war, then, may be defined as (1) the connecting link between tactics and strategy which is (2) concerned with the maneuver of large units (3) for the purpose of winning campaigns in support of theater strategy. And, generally, the units which perform these sorts of function are corps, armies, and army groups. Disposal of the task of defining the operational level of war still leaves the more difficult and delicate task of offering an intelligible definition of "tenet."

Earlier it was suggested that a facile way of defining "tenet" is simply to say that a tenet is merely a rule or law. A better way to grasp what is meant by "tenet" is to begin by

adopting the meaning implicit in the phrase "principles of war." Here "principle" means a generalization or general truth about the nature of war. The principle of Surprise, for example, enjoins military commanders to achieve surprise whenever they can because by doing so a commander can gain a crucial psychological and moral advantage over his enemy. But notice two important characteristics of this principle of war. First, the principle is universal in application and therefore applies at the strategic and operational as well as tactical levels of war. Second, the principle does not address the question of how surprise at any level is to be achieved. The value in having universal principles, however, is in knowing how to apply them to achieve some desired outcome; in the case of military art, victory. So at some point abstract principles such as "Achieve surprise when possible" have to be translated into more concrete principles or tenets that suggest how surprise can be achieved at a particular level of war. Here conceptual clarity appears to demand that we make a distinction between principles that guide our decisionmaking and tenets which specify how to accomplish whatever it is the "what" principles have suggested. Where to draw the line between the abstract and the specific, between objective and technique, may at times be impracticable. Indeed, it may even be true that operational tenets of the sort this thesis proposes to uncover may include some of the method as well as the objective. Because the business of warfighting is part science and part

art, it should not surprise us to see tenets that tell us what is to be done melding with techniques which suggest how they should be done. At some point the abstract has got to be translated into the concrete, into a definitive technique, preferably one that has been validated by the experiences of history. This discussion, then, suggests that operational tenets are generalizations about the nature of operational art as derived from historical reality. In essence, operational tenets are inductive generalizations which can be seen to apply at the operational level of war. For convenience,throughout the remainder of this thesis "principle" and "tenet" will be used interchangeably to refer to such generalizations.

It remains now to address the question of methodology. The question this thesis seeks to answer--What were the common operational tenets of Guderian and Patton--presupposes the answers to two prior questions. First, were the operations of each commander guided by recognizable tenets at all? If the answer to this question is no, then we must give up the project right from the beginning. But surely the rational approach is to assume at the beginning that the operations of Guderian and Patton were guided by principles or basic tenets of some sort. Then, if it turns out that historical research will not support the assumption, the answer to the proposed thesis question will have become evident. A further point worth bearing in mind, moreover, is that if one takes the conduct of war to be a rational enterprise at all, then he should not be surprised to

find that principles or tenets of some sort served as guides for the conduct of war at the operational level for these two highly successful World War II commanders and other commanders as well.

Second, in order to answer a question directed at commonality of tenets between Guderian and Patton, one must first uncover the operational principles of each man. Here the obvious approach is to read primary and secondary sources about these men and their operations in World War II. This should be a two-pronged approach. Examination of sources may shed light on what a particular commander said about operational art, and that would be some good evidence for inferences about the tenets which lay behind his operations. More revealing, however, is the further step of checking the consistency between what a commander said and what he and his units actually did in combat. If research reveals that a particular commander said, "X is a tenet by which I operated," and his operations consistently reflect the application of that tenet as well, a good case can then be made for the view that X is a tenet by which that commander planned and conducted operational art.

By now it should be evident that a general methodology for answering the question this thesis proposes to answer is suggested by the question itself. First, it must be assumed that Guderian and Patton operated by recognizable tenets or principles. Although it may prove false, a case has been

offered for the truth of that assumption. Second, one must determine by what particular tenets each man operated. Here the task is to search historical primary and secondary sources for evidence of what these men said about the operational level of war and how they actually conducted their campaigns. In the case of Guderian the focus is on three campaigns: the Polish Campaign of 1939; Flanders (Ardennes) Campaign of 1940; and the Russian (BARBAROSSA) Campaign of 1941. For Patton, the thesis examines his North African Campaign of 1942; Sicily, 1943; and Northwest Europe, 1944-45. So, in order, Chapters 2 and 3 seek to answer succinctly the question: What were the operational tenets of Guderian and Patton in World War II? Third, Chapter 4 pursues the next logical step by ascertaining what tenets, if any, were common to the operational methods of these two commanders. What should fall out in Chapter 4 is an answer to the primary question this thesis seeks to answer. In addition, however, Chapter 4 tries to answer the further relevant question for contemporary soldiers: What does it all mean? A set of common operational tenets for operational art suggests that such tenets apply to Airland Battle Doctrine on a future battlefield if historical experiences are any useful guide to future experiences. Chapter 4 attempts to sketch out some implications for operational art on a future battlefield. Even a stab in this direction may help future commanders and staff officers cope with the unknown and doctrine writers to develop new concepts for fighting a future war.

## ENDNOTES

1 Here I am thinking of the Inchon Landing in particular.

2 See Edward N. Luttwak, "The Operational Level of War," International Security, Vol.5, No.3 (Winter 1980) for a fuller discussion of the operational level of war.

3 U.S. Department of the Army, Operations, Field Manual 100-5 (Washington, D.C.: U.S. Government Printing Office, 1982), pp. 2-3.

# CHAPTER 2: GENERAL HEINZ GUDERIAN

## PART I: The Man

Even when he was a young major, Heinz Guderian's soldiers affectionately called him "Hurrying Heinz." The reason for this appellation and its appropriateness will become evident as this chapter on the operational tenets of General Heinz Guderian unfolds. The story behind the nickname, however, anticipates the heart of the argument concerning Guderian's principles of operational art, which are developed in this chapter by examining Guderian's operations through a prism of analysis which focuses on the following five broad categories: (1) combined arms operations, (2) offensive action, (3) momentum, (4) command and control, and (5) risk. The general approach is to examine Guderian's writings and his conduct of operations in the 1939 Polish, 1940 Flanders, and 1941 Russian Campaigns, and derive some substantive conclusions about the basis for Guderian's conduct of operational art. The chapter concludes by summarizing the principles derived from the analysis. But before launching into the substance of Guderian's operational methods, a brief character and background sketch of the man who was Germany's leading proponent and commander of armored forces in World War II is in order.

Born at Kulm in 1888, Heinz Wilhelm Guderian was the son

of a German Army officer who traced his ancestry back to a thoroughly Prussian, landed gentry. He attended both the Karlsruhe cadet school in Baden and the Gross-Lichterfelde school near Berlin, graduating from the latter in 1907. After attendance at the War School at Metz, he was commissioned a second lieutenant and assigned to an infantry battalion in Hannover.

By inter-war standards the progress of Guderian's career was ordinary until Hitler's rise to power, and then his rise was quick. But even if ordinary in its early promotion pace, Guderian's career was unusual for its diversity of assignments. In 1912, for example, he served with the 3rd Telegraph Battalion where he became acquainted with the latest wireless radio technology and its tactical applications. During World War I he served successively as a signals staff officer, General Staff officer, battalion commander, quartermaster officer, and operations officer with a variety of units from company and battalion to division and corps. Between the world wars Guderian commanded a motor transport battalion, taught motor transport doctrine and tactics at the Berlin War Academy, and as a colonel commanded the 2nd Panzer Division in 1935. Thanks to Hitler, by 1938 Guderian was a General of Panzer Troops and had played a leading role in the occupation of Austria and the Sudetenland.

During World War II Guderian had the unique opportunity to carry out operations in accordance with doctrine he helped

develop in the pre-war years. In effect, he turned theory into practice by participating in three major campaigns--in Poland, Flanders, and Russia--and served in those campaigns respectively as an army corps, panzer group, and panzer army commander. In spite of great successes in all three campaigns, Hitler relieved Guderian of command of his panzer army in December 1941 for failing to follow orders to hold forward positions outside of Moscow at all costs.<1> Brought back on active service in March 1943 as Inspector-General of Armored Forces, Guderian was appointed Chief of the Army General Staff the day after the attempted assassination of Hitler in July 1944. He served as Chief of the Army General Staff until March 1945 when Hitler again dismissed him. He was captured by American forces in May 1945, held in captivity until June 1948, and died in 1954.

As impressive as these few paragraphs make Guderian's career out to be, they hardly do justice to the man's full character, personality, and experiences. Guderian himself, for example, sheds some light on his own intellectual life in his book Panzer Leader. There he points out that while on staff assignment with the Army Transport Department he studied the works of J.F.C. Fuller, B.H. Liddell Hart, and Giffard Martel, paying special attention to Liddell Hart's ideas for the use of armored forces for long-range strokes, operations against lines of communication, and armored division organizations consisting of panzer and panzer-grenadier units.<2> While assigned to the

staff of the 2nd Division at Stettin in 1924, he taught history and tactics, concentrating his instruction on Napoleon's 1806 Campaign and the history of German and French cavalry operations of 1914. Of the former topic he says, "as regards the command of troops in conditions of mobile warfare it is...a very instructive campaign."(3) Studies of German and French cavalry operations proved valuable, he says, because they aided development of his theories, "which were becoming ever increasingly preoccupied with the tactical and operational use of movement."(4) It is noteworthy that in a footnote in Panzer Leader--published in 1952--Guderian defines "operational" as lying midway between the tactical and strategic.(5) The point of these observations is that Guderian was a man who educated himself, thought hard about his profession, and had the intellectual depth and breadth to shape future doctrine for the German Army, including concepts and technologies in operational art. His biographer Kenneth Macksey says this of him:

> Guderian was that rare combination of a man of ideas equipped with the ability and verve to turn inspiration into reality. No other general in the Second World War--and few in history--managed to impress so wide and intrinsic a change upon the military art in so short a time, and left such a trail of controversy in his wake.(6)

Having never exercised independent command, Guderian fails to measure up to Field-Marshal Lord Wavell's standards for the great commanders in history. Macksey's judgment, nevertheless, is that Guderian's tactical and operational acumen and

inspiring combat leadership place him on a par with the Great Captains of history.<7> Whether he was on a par with the Great Captains or not, Heinz Guderian's life destroys the myth of the dichotomy between the thinking man and the fighting man. As his campaigns in Poland, Flanders, and Russia show, he was both thinker and fighter.

## PART II: Operational Tenets

### COMBINED ARMS OPERATIONS

One of the supremely ironic twists of Heinz Guderian's career has to be his assignment in 1927 to the Transport Department of the Truppenamt in the War Ministry. Claiming he knew nothing about transport matters or wished to, he avoided the assignment up to the last moment and finally accepted it with an air of terminal resignation. Yet it was the two years spent in this assignment investigating the feasibility of troop transportation by lorry that allowed Guderian to develop the doctrinal base for his conception of operational art and the combined arms organizations with which to conduct operations. Once committed to the task, he read all the literature he could find on motorized warfare, including articles by Liddell Hart, Martel, and Fuller.(8) In addition, he studied carefully the employment of tanks at the Battle of Cambrai in World War I and the early use of cavalry in that same war. Because of his depth of knowledge on the subject of motorized warfare, Guderian the student became Guderian the instructor when he was invited to lecture on armored and motorized warfare on the Motor Transport Staff of the Berlin War Academy. So, his assignment to the

Transport Department of the Truppenamt unexpectedly helped Guderian in at least two ways. First, it forced him to understand the historical and then contemporary use of armored and motorized forces, thereby making him by default the German Army's expert on the subject. Second, his teaching duties required him to conceive, develop, and teach armored and motorized warfare doctrine for a future war. Unsurprisingly, given his study of Liddell Hart and Fuller, who envisioned in future wars the clash of fast-moving mechanized and armored forces, Guderian's operational doctrine called for combined arms operations and close cooperation of the air forces. This, in turn, called for a combined arms organization, the centerpiece of which would be the tank.

As early as 1929 Guderian was convinced tanks on their own or merely in conjunction with infantry could never achieve decisive tactical or operational results. On this topic in Panzer Leader he says:

> My historical studies, the exercises carried out in England and our own experiences with mock-ups had persuaded me that tanks would never be able to produce their full effect until other weapons on whose support they must inevitably rely were brought up to their standards of speed and cross-country performance.(9)

Here, of course, Guderian's point is the need for equal mobility among the various arms. He saw very early that mobility differentials would create severe problems for the effective conduct of operations on a fluid, fast-moving

battlefield. A more important point to grasp, however, is Guderian's conception of the relationship among the various arms on the battlefield he envisioned. In a following passage he says:

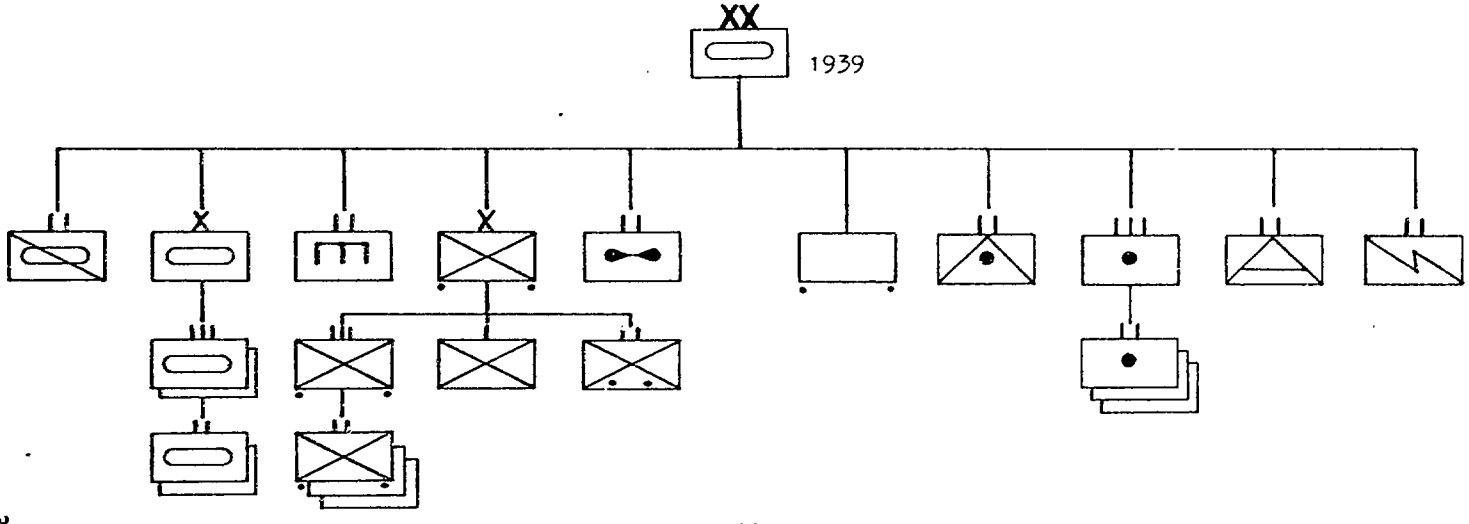
> It would be wrong to include tanks in infantry divisions: what was needed were armoured divisions which would include all the supporting arms needed to allow the tanks to fight with full effect.<10>

Unlike the French, who as late as May 1940 employed tanks by parceling them out to infantry divisions in battalion-sized strength, Guderian thought armored units should be the centerpiece around which combined arms organizations should be built. Large concentrations of tanks, with their firepower, mobility, and armor protection against small arms fire, should be used to penetrate tactical defenses and spearhead rapidly into operational depths of enemy defenses. Then "the infantry's job lies in an immediate exploitation of the tank attack by a rapid advance. Nor does the footsoldier pause until the ground seized by the tanks is definitely cleared of the enemy."<11> The artillery's role is to fire a short, concentrated preparation to disorganize enemy defenses at the point of penetration. But to do all this, Guderian saw the need for two kinds of combined arms organization: mechanized reconnaissance forces and armored combat forces.

To ensure the timely receipt of tactical and operational combat information from ground units, Guderian foresaw the need for and employed mechanized reconnaissance units which were

flexible, mobile, and easily controlled. In addition, such units had to have a wide radius of operation and good radio communications to report information about enemy units. Therefore, every panzer and panzer-grenadier division had an organic armored or motorized reconnaissance battalion equipped with vehicles capable of maximum speeds of 40 miles per hour on unimproved roads and a radius of action between 120 and 200 miles.(12) Moreover, recognizing that such reconnaissance units may have to fight once in contact with the enemy, Guderian envisioned the requirement at times for reconnaissance battalions to be reinforced with engineers, motorized infantry, and heavy arms.(13) With some minor modifications, the armored and motorized reconnaissance battalions of 1940 consisted of six companies: Headquarters, Armored Car, Armored Reconnaissance, Light Armored Reconnaissance, Heavy Weapons, and Supply. In addition to a 75-mm (SP) Gun Platoon and 81-mm Mortar Platoon, the Heavy Weapons Company had an organic engineer platoon of 51 men. Altogether, the Reconnaissance Battalion was a formidable asset at a division commander's disposal, consisting of 199 wheeled or tracked vehicles, 22 motorcycles, and 942 men.(14) Not only could such a unit be employed to find weaknesses in enemy tactical defenses, but it could penetrate to operational depths to locate enemy reserves and open routes for advancing friendly forces. When necessary, Guderian thought, a reconnaissance battalion could also participate in a pursuit, cover a withdrawal, screen or protect

GERMAN PANZER DIVISIONS



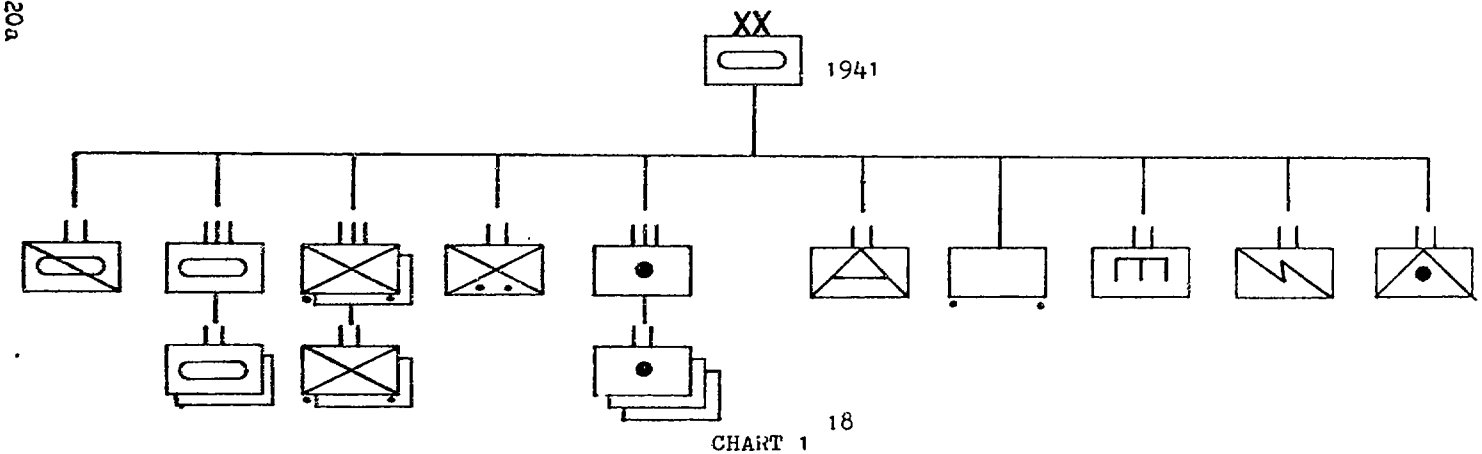




CHART 1

a flank or the rear of its parent unit.(15) But here it is useful to remember that all of these potential missions of the reconnaissance battalion were directed toward one end: facilitating the operations of armored combat forces, the second type of mechanized arm.

According to Guderian, armored combat forces have the mission to deliver surprise attacks in concentrated strength with a view to gaining operational decision.(16) For such forces to be effective, Guderian believed division-level combined arms organizations built around the tank were necessary. He saw a requirement for two types: panzer (armored) divisions and panzer-grenadier (motorized infantry) divisions. Panzer divisions in 1940 were composed of a tank brigade of two regiments of two battalions each, totalling some 400 light and medium tanks, and a panzer-grenadier brigade of three infantry battalions.(17) These primary tank and motorized infantry thrusting forces were supported by an armored reconnaissance battalion, signal battalion, artillery regiment, anti-aircraft battalion, anti-tank battalion, engineer battalion, and division support units (See Chart 1).(18)

A glance at Chart 1 reflects a fairly comprehensive, even sophisticated, combined arms organization in the German Army in 1940. It also reflects a seriousness about the requirement to integrate arms to achieve desired results in combat. What Chart 1 does not show is that German Army units were organized so that arms were integrated at a level of organization even lower

than division. Armored panzer-grenadier regiments, for example, were organized with both an armored and motorized panzer-grenadier battalion. In addition, the regimental commander had under his immediate command an engineer company and a heavy infantry howitzer company consisting of twelve 75-mm (SP) howitzers and six 150-mm (SP) howitzers, an amazing array of potential firepower.

Although Chart 1 suggests a well-integrated combined arms organization, it does not reflect the panzer division's mobility or firepower potential. A summary of the main weapons found in the panzer division suggests it was both highly mobile and formidably equipped to conduct combined arms combat while on the move. Unlike a standard infantry division, panzer and panzer-grenadier divisions had no horse-drawn vehicles and were, therefore, entirely wheel or track-mobile, their various units enjoying roughly comparable mobility. Wheeled reconnaissance, motorized infantry, and division services did not, of course, enjoy the cross-country mobility mechanized units and armored battalions did, but nonetheless, there were not great disparities in mobility among the subordinate elements of panzer and panzer-grenadier divisions. The panzer division was a self-sufficient combat organization which could usually field over 300 tanks, 72 guns over 75-mm, 72 guns under 75-mm, and some 3000 motor vehicles.(19) The panzer-grenadier division was similarly organized with the exception that it had only one battalion of 48 tanks and 12 fewer artillery pieces by

Table of Organization.(20)

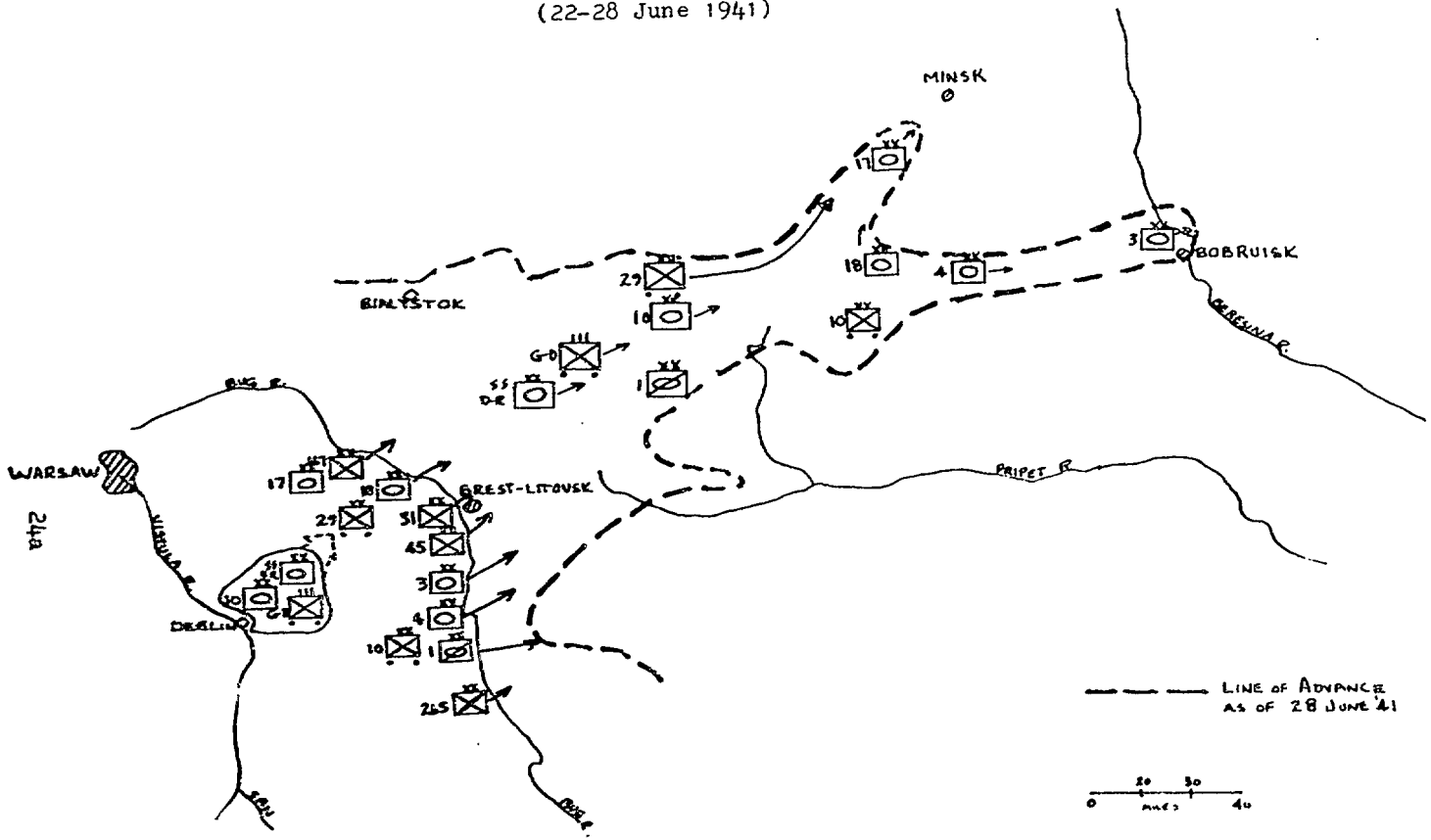
A final point worth mentioning is that these combat divisions enjoyed a relatively high combat/combat support to combat service support, or "tooth-to-tail," ratio. In a panzer division, for instance, 27% of assigned personnel were infantrymen, and 24.7% were tankers. With engineer, artillery, signal, anti-tank, and reconnaissance elements added, 86.2% of the division's strength was engaged in combat/combat support activities while only 13.8% of assigned personnel were performing combat service support functions.(21) By comparison, the "tooth-to-tail" ratio in American units in 1945 was 83.6% to 16.4%, reflecting only slightly more tail.(22) (Today an American J-Series armored division has a comparable combat/combat support to combat service support ratio of approximately 70.5% to 29.5%, reflecting considerably more tail than either German or American armored divisions in World War II.)(23)

Predictably, Guderian did not envision the employment of panzer and panzer-grenadier divisions in single division-size units. Rather, he advocated employing such divisions in concentrated strengths of corps and multiple-corps or army-size units. He recognized that mobile operations involving attacks to operational depths would require a great deal of combat power consisting of divisions which could complement each other: panzer divisions for penetrations and deep thrusts, and motorized divisions for flank security, holding terrain, and

providing depth. Consequently, he argued for the early formation of corps-size armored forces, the first of which was formed in October 1935 and consisted of three panzer divisions.(24) In March 1938 Guderian, as XVI Army Corps Commander, participated in the occupation of Austria with a corps composed of 1st, 2nd, and 3rd Panzer Divisions and the SS-Leibstandarte Infantry Regiment. Later that year, in October, he entered the Sudetenland with a more flexibly composed XVI Army Corps consisting of one panzer and two motorized divisions. Throughout these minor preliminary operations, Guderian was testing his ideas about the employment of corps-size armored and motorized formations in preparation for the real test he believed soon would come. Early problems in tank maintenance, fuel supply, and traffic management were identified and corrected. By 1 September 1939 Guderian was an experienced commander of corps-size armored and motorized forces ready to try out his ideas in combat.

Because the corps was primarily a tactical headquarters, it was easy to task organize a corps for combat and, when the situation required, change that organization by attaching or detaching divisions and separate brigades or regiments. During operations in Poland in 1939 and in France in 1940, Guderian variously commanded army corps and a panzer group, task organized for the particular operation at hand. At the beginning of the Polish Campaign his army corps consisted of one panzer and two motorized divisions. In a subsequent phase

OPENING PHASE of the RUSSIAN CAMPAIGN
(22-28 June 1941)




MAP 1

of that same campaign his corps' composition was changed to one motorized and two panzer divisions.(25) For the opening phase of the campaign in Flanders in May 1940, his army corps consisted of three panzer divisions and the elite Infantry Regiment Gross-Deutschland (G-D), which initially had the mission to protect the corps' left flank and later became the corps reserve.

Since the panzer group was subordinate to an army, it too was primarily a tactical headquarters task organized for a particular operation or phase of an operation and dissolved when not needed.(26) During the second phase of the campaign in France, Guderian commanded a panzer group consisting of two corps, each with two panzer and one motorized divisions. For the initial phase of the Russian Campaign Guderian's Panzer Group 2 was composed of three panzer corps, an army corps, and army troops, including a wing of close support planes, an independent anti-aircraft regiment, and artillery, engineers, signal, and air reconnaissance units.(27) Guderian's task organization for this first phase--crossing the Bug River and seizing the fortress city of Brest-Litovsk--reveals that he was not the least bit hesitant to subordinate slow-moving infantry divisions to a panzer corps should the operation require such an organziation for combat. The right wing of his panzer group's attack into Russia, for example, was carried out by XXIV Panzer Corps, which consisted of two panzer divisions, one motorized division, one cavalry division, and one infantry

division (See Map 1). The infantry division secured crossing sites on the Bug River and assisted the crossing of the panzer divisions. The cavalry division executed a screening mission along the edge of the Pripet Marshes on the panzer group's right flank. XII Army Corps, composed of two infantry divisions, attacked the fortress of Brest-Litovsk in the center of Second Panzer Group's zone of attack and was detached after this initial phase. On the left wing Guderian employed XLVII Panzer Corps, which was composed of one infantry, one motorized, and two panzer divisions. Again, the foot-mobile infantry division's mission was to assist the crossing of the panzer divisions. Panzer Group Reserve consisted of XLVI Panzer Corps with one panzer division, one motorized division, and Infantry Regiment Gross-Deutschland, about one-fourth of Guderian's mobile forces.(28)

All of the foregoing observations point to the conclusion that Guderian practiced in combat what he thought in the abstract, namely, that armored forces should be employed in concentrations. His main attack (See Map 1) in the opening phase of the Russian Campaign--the left wing--had no less than two panzer divisions, which were themselves self-sufficient combined arms organizations. Similarly, his primary supporting attack--the right wing--also had two panzer divisions. In support, each wing had an infantry division for the purpose of seizing crossing sites and passing the more mobile forces through, while the center corps was task organized for the

Panzer-Grenadier Regiment

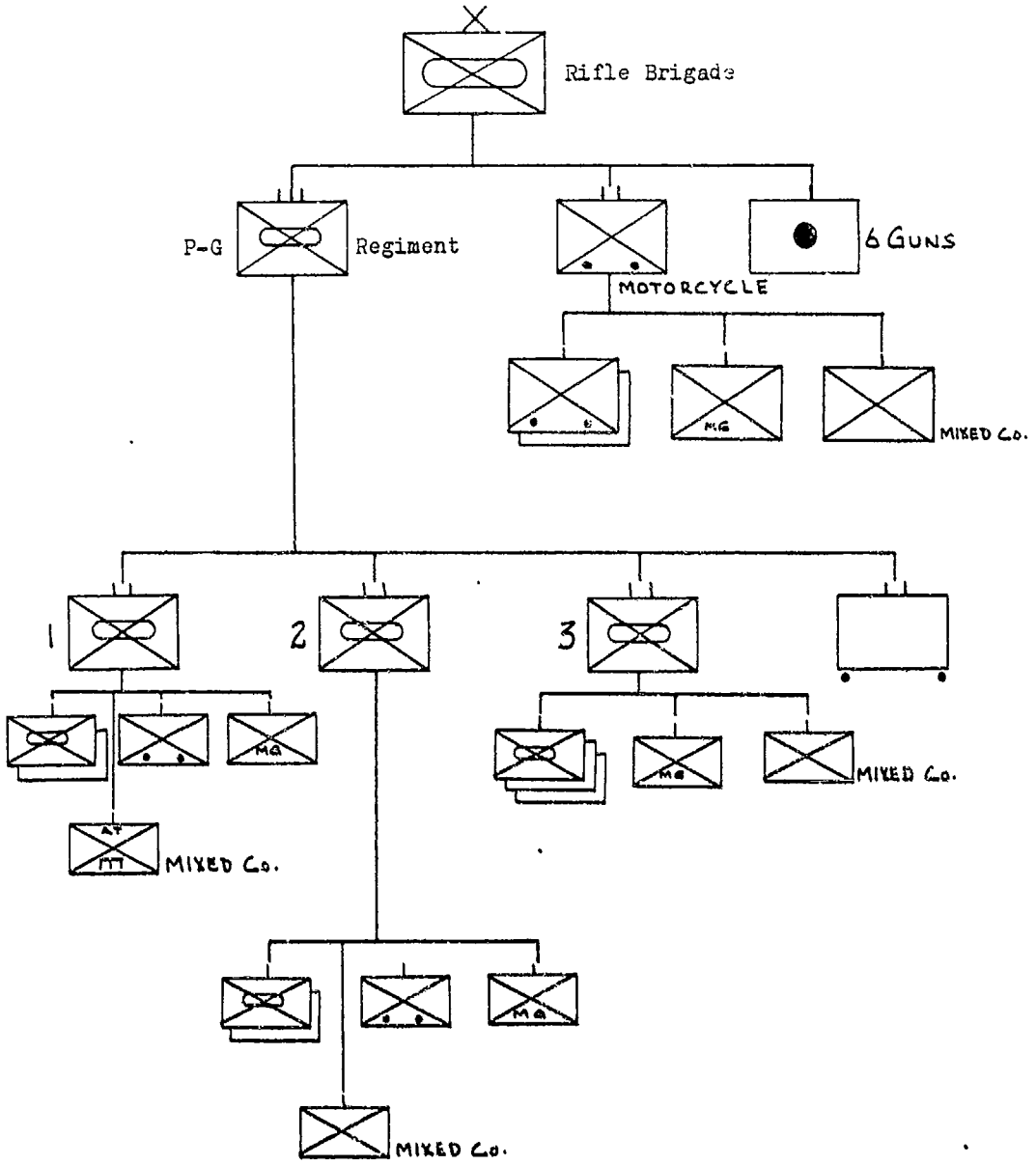



Chart 2

slower paced operations in and around the built-up area of Brest-Litovsk. Finally, a cavalry division protected the Panzer Group's right flank, while the Panzer Group Reserve followed the left wing, which Guderian reckoned his most vulnerable flank. Thus, from division--the smallest self-sufficient organization--to group, Guderian conducted operational art with divisions that were self-contained combined arms organizations. Moreover, he task organized corps and groups for combat based on the terrain and specific mission requirements. His employment of infantry divisions for the initial phase of the Russian Campaign was unusual, for he did not employ such divisions for his crossings of the Meuse River in May 1940 or the Dneiper River in July 1941. And as we shall see, the high tempo of his operations generally weighed heavily against his use of foot-mobile infantry divisions.

If we regard the panzer and panzer-grenadier divisions as the basic combined arms organizations Guderian used to flexibly organize corps and panzer groups for combat, we then have only part of Guderian's total conception of combined arms operations. To get a more complete and accurate picture, we need to examine his employment of the key combat support arms of artillery and tactical air.

The Table of Organization for panzer-grenadier regiments (See Chart 2) already should have alerted us to a key principle for the employment of artillery: decentralization. Of the sixty-six artillery tubes in a panzer division, for instance,

24, or 36%, were organic to the panzer-grenadier regiments themselves. The remaining 42 guns and howitzers were in the artillery regiment of the division and were employed as the division commander deemed essential--usually in support of the division's main effort. The Tables of Organization, however, only tell part of the story. Generally, Guderian organized his artillery in two phases: the initial penetration and the exploitation. For the initial penetration of the tactical defenses he usually centralized control of the artillery under his corps artillery commander, who coordinated the corps artillery fire plan. Then, for the fast-moving exploitation phase of his operations, the artillery was decentralized. A look at artillery annexes for the crossing of the Meuse River on 13 May 1940 illustrates the point. Guderian's XIX Army Corps Operations Order specifies the allotment of Corps Artillery as follows:

2nd Panzer Division (supporting attack on corps flank): Artillery Regiment 74, less III (HVY) Battalion.

10th Panzer Division (supporting attack on corps flank): Artillery Regiment 90, less III (HVY) Battalion.

1st Panzer Division (MAIN ATTACK in center of corps sector):

Anti-infantry units: Artillery Regiment 73.

Anti-artillery units and point of main effort: Artillery Regiment 49 and 5 other artillery battalions.

Corps Artillery Commander located with 1st Panzer Division.(29)

This organization for combat is revealing in several ways. First, it is obvious that Guderian weighted his main attack by allotting artillery as he did. 1st Panzer Division had its organic Artillery Regiment 73 and Corps Artillery Regiment 49 as well as separate battalions from corps assets and the heavy battalions of 2nd and 10th Panzer Divisions. Second, artillery units had specific tasks to perform. Artillery Regiment 73, for example, was assigned an anti-infantry role for this operation, while Artillery Regiment 49 had an anti-artillery role. Third, control of artillery throughout the corps for the first phase of the operation--crossing the Meuse--was exercised by the corps artillery commander, who was located in the corps' main zone of attack, 1st Panzer Division's zone. A final point which the organization for combat does not show but which the annex does specify is that the artillery observation posts in 2nd and 10th Panzer Division sectors were to be positioned so that at least one artillery battalion of the regiments supporting those divisions would be located so that they could observe 1st Panzer Division's sector and deliver supporting fires if needed.(30)

In addition to what has already been said about Guderian's employment of artillery, it is instructive to note that artillery annexes to operation orders specified not only the targets certain artillery units would engage, but the timing of such engagements and their relationship to the fires of other

arms. The annex to 1st Panzer Division's operation order for the Meuse crossing, for example, specifies the stage of the battle, the time period, and targets for infantry, anti-strongpoint weapons, artillery, and tactical air. In the preparatory stage of the Meuse crossing artillery missions included harassing fires along the west bank of the Meuse, anti-pillbox fires, and anti-artillery and anti-flak fires, all to be fired in that sequence according to a pre-arranged time schedule. Moreover, in concert with tanks, anti-tank, and anti-aircraft weapons employed in a direct fire mode, artillery fires were coordinated so that the artillery suppressed enemy artillery fires and anti-aircraft fires, enabling the infantry assault teams, under close air cover, to move close to the Meuse and prepare to cross.(31)

What all this suggests is that Guderian took special pains to ensure his artillery fire support was concentrated initially where it was needed to achieve a penetration of tactical defenses and, more important, was synchronized with other supporting fires to achieve maximum effect. Although control in the early stages of an operation generally was centralized, in the more fast-moving stages, during which panzer units exploited the initial tactical successes, corps artillery was attached to divisions to supplement divisional organic fire support; otherwise, corps artillery would have remained, for all intents and purposes, in reserve far behind attacking panzer columns. Even so, the moderate mobility differential

between towed artillery--both divisional and corps--and panzer battalions left a fire support gap that the Germans elected to fill with tactical air power, the final element of Guderian's combined arms approach to operational art.

Working in cooperation with ground tactical units of corps-size and higher, the German Air Force, or Luftwaffe, performed three key missions: achievement of air superiority, tactical and strategic air reconnaissance, and close air support of ground units. Doctrinally, Luftwaffe reconnaissance aircraft were "placed under the orders of each armoured corps and armoured division"; in addition, every corps of the German Army also had its own air reconnaissance squadron of about ten planes.<32> Unable to keep pace with the expanding German Army, Luftwaffe reconnaissance units reverted to Luftwaffe control by 1942 and were allocated to ground units as needed. During the period Guderian conducted operational warfare (September 1939 to December 1941), both short and long-range air reconnaissance squadrons operated under control of his corps and panzer group headquarters. After accomplishing its first mission of achieving air superiority by deep strikes against enemy aircraft and air support facilities, German air forces turned to the second of their ground support missions--air reconnaissance.

Long-range air reconnaissance was supposed to obtain early indications of enemy plans whereas short-range reconnaissance was supposed to watch over the deployment and employment of

enemy ground forces up to the point where ground forces made contact. Both day and night air reconnaissance was planned and expected. Short-range reconnaissance emphasized cooperation with mechanized ground forces, artillery spotting, and photographic and visual reconnaissance of enemy movement.(33) In the Polish Campaign German air reconnaissance efforts on 1 September were followed by surprise airstrikes against the Polish Air Force. By 3 September, two days into the campaign, the Luftwaffe mission had shifted to cooperation with army ground units because the Polish Air Force had been swept from the sky--and the ground!(34)

To enhance cooperation with armored ground forces, Field-Marshal W. F. von Richthofen, Commander of FliegerKorps VIII in the Polish, Flanders, and Russian Campaigns, introduced the practice of employing a Tank Liaison Officer with armored columns. This officer's task was to keep in close touch by radio with close-support aircraft.(35) Standard close-support missions included bombing and strafing of strongpoints, artillery batteries, and troop concentrations wherever the enemy made a stand. In addition to close-support, the Luftwaffe attacked enemy defenses in depth by hitting depots, dumps, barracks, and factories "in order to dislocate the supply organization."(36) Even greater depth was achieved by attacking railways, stations, bridges, and road junctions to preclude enemy reinforcement of committed units. In the Flanders Campaign, for instance, German air power was used to seal off

the battle area by attacking French rear communications as far back as a line along an arc running from Givet through Hirson-Laon-Reims to Verdun. In the first few days of the Flanders Campaign Third Air Fleet attacked targets to a depth of 185 Kilometers, with its main emphasis in Guderian's sector, the Charleville-Sedan area of the Meuse River. It is worth noting that the straight-line distance from Sedan, where Guderian crossed the Meuse with his XIX Army Corps, to Reims, France is about 85 Kilometers, illustrating the depth to which airstrikes were carried out in support of advancing ground units. Throughout the campaign air attacks to an average depth of 76 Kilometers behind enemy forward troops struck moving columns, troop concentrations, and rail routes.(37)

In addition to these close-support and deep interdiction missions, the Luftwaffe provided attacking ground forces with flank protection when required. Two examples in particular come tp mind. First, in the Flanders Campaign when Guderian's XIX Army Corps cleared the rugged Ardennes terrain and raced for Abbeville, he exposed his left flank to French forces located south of the Aisne River. Later, in the Russian Campaign as Guderian's Second Panzer Group attempted to complete the encirclement of Russian forces in the Bryansk area, he exposed his right flank to possible Russian counterattacks from along the Bryansk-L'gov Railroad route.(38) In both instances, however, Guderian employed tactical air reconnaissance and close-support aircraft to locate and attack enemy units which

posed a threat to his vulnerable flanks.

As brief as it is, this examination of Guderian's use of German air forces indicates that both air reconnaissance and close-support aircraft played a key role in his conduct of operational art. As an integral part of Guderian's--though not only Guderian's--conception of combined arms operations, tactical air support enabled him to locate enemy units early on to deliver fires both near and far for the purposes of supporting ground units in contact, and to isolate the battle area. Moreover, this air support was well forward and virtually continuous when operations called for it. In Guderian's own words: "The flight wings advanced their bases in rapid succession close to the front lines of the panzers and cooperated with them closely."(39) This is not mere rhetoric, for in recounting his crossing of the Dneiper River in the Russian Campaign, Guderian mentions that fighter airstrips were laid out just behind his assembly areas so that air support would be available for impending operations.(40)

This final point on the use of air support indicates that Guderian placed a premium on the need for local air superiority, that is, air superiority over heavy concentrations of armorded forces which comprised the main effort of his operations. Such control of the air was necessary to allow close-support aircraft to support advancing armored columns. Reflections on the damage German armored columns suffered at the hands of Allied airpower during Operation Cobra and the

Ardennes counter-offensive in 1944 show how right Guderian was to be concerned about maintenance of local air superiority during crucial phases of operations.

Having examined Guderian's conception of combined arms operations by looking at the combined arms organizations he employed, his methods of organizing corps and groups for combat, and his use of artillery and tactical air power, it remains to draw some conclusions. Three principles that lay behind his conception of combined arms operations suggest themselves. First, Guderian's insistence on combined arms organizations built around the tank implies he took it as a tenet that one should:

> Conduct operational art with combined arms divisions built around the tank; all other arms should be integrated organizationally and tactically to support tanks.

Second, his employment of artillery indicates his adherence to the tenet:

> Concentrate and centralize control of artillery for penetration of tactical defenses but decentralize control for fluid exploitation operations.

Third, about air operations he held that:

> Tactical aircraft must support armored operations by maintaining local air superiority over concentrations of armored forces, and then should provide provide air reconnaissance and close-support airstrikes.

These conclusions are not earthshaking, and one could derive more or other tenets if he made the effort. There are

lesser principles, perhaps corollaries, that jump out from the present analysis, but these three appear to be the absolutely key tenets of combined arms operations by which Guderian conducted operational art. Guderian would have said that without adherence to these principles, one cannot attain operational decisiveness. Whether Guderian was correct in thinking this about operational art is not here at issue. Right or wrong, Guderian thought combined arms divisions built around the tank, and flexibly supported by artillery and tactical air is the first step toward operational success.

## OFFENSIVE OPERATIONS

One does not have to look far to support the claim that Guderian's conduct of operational art can be characterized as offensive rather than defensive. A place to begin is his 1937 article "Armored Forces" in which he explicitly says:

> The mission of armored combat forces is the delivery of surprise attacks with concentrated strength, with the view to gaining the decision at the point determined by the command....They are, therefore, exclusively an offensive arm whose advantage over other ground forces consists in the capacity to fight while in motion.<41>

This observation, of course, lies open to the challenge that "Armored Forces" merely reflects Guderian's theory of operational art, not what he practiced in combat. And to this the appropriate response is to look at his operations in World War II. All reflect that whether he was in Poland, France, or Russia between 1939 and late 1941, Heinz Guderian was attacking, attacking, attacking--almost never defending! In fact, his attempt to execute mobile defensive warfare just southwest of Moscow in December 1941 led to his relief. So, he never really had the opportunity to conduct defensive operational art, but given his theoretical views on the subject it is safe to say that he would have been unhappy with the prospect of conducting defensive operations for any length of

time.

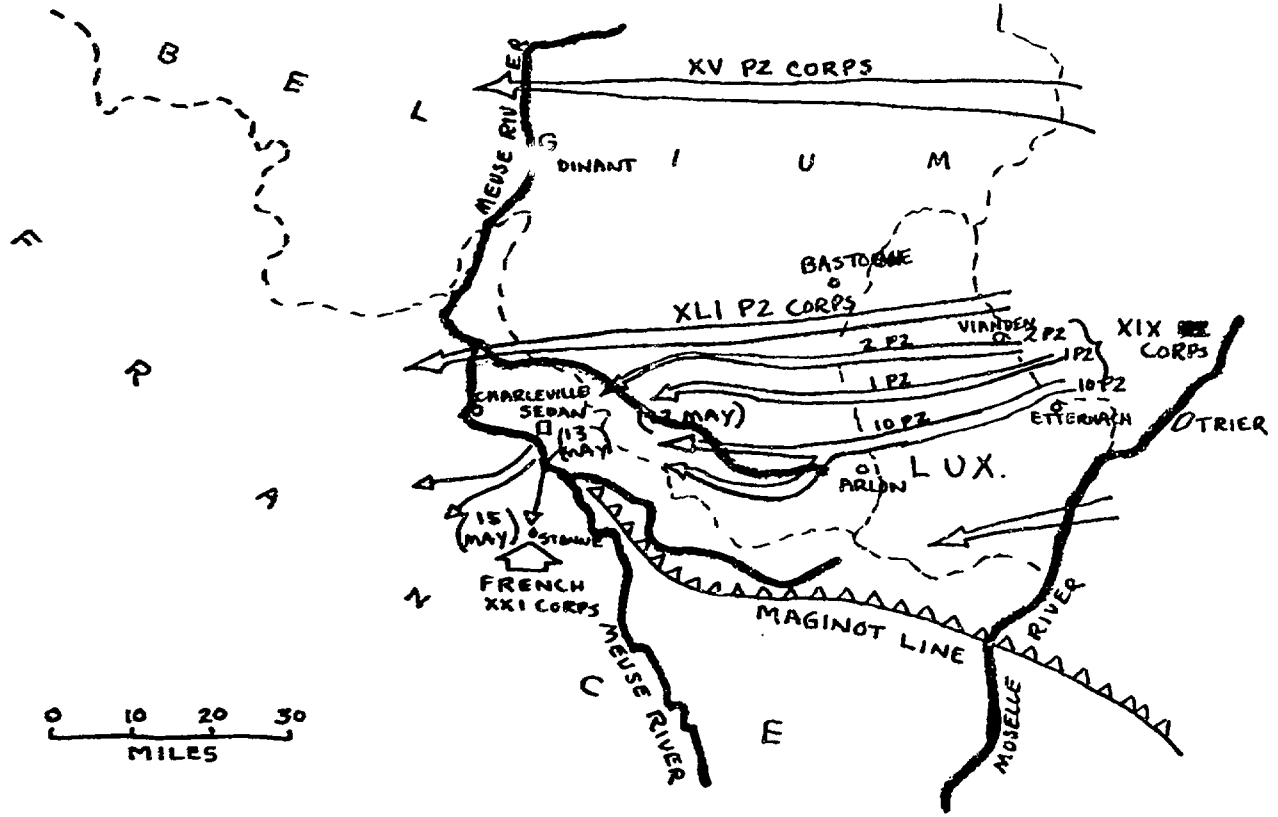
Given that his operations were offensive in character, Guderian's operational art can be characterized as attacks on narrow frontages employing tanks in the spearhead to achieve penetration and operational depth quickly, while retaining a flexible reserve for protection and exploitation of success. From this analysis four tenets of offensive action which guided Guderian in the conduct of his operations can be derived.

Strangely, the 1936 German Field Service Regulations appear to contradict Guderian's view that attacks should be conducted on a narrow frontage, for that manual states:

> The attack must be launched on a broader front than that intended for the break through, in order to tie and hold down the enemy on either side.(42)

But this passage can be misleading because in a subsequent paragraph the manual refers to the decisive attack, which is distinguished by: (1) narrow zones, (2) unified fire from all arms, and (3) the reinforcement of fires by specially allotted heavy infantry weapons and artillery.(43) Clearly, here the manual is making reference to a main attack designed to penetrate tactical defenses rather than a broad offensive. Guderian probably thought the broad offensive concept entailed the concept of a decisive attack; otherwise, penetration would not occur and enemy reserves would not be tied down along a wide line of contact. So although not inconsistent with the German field regulations of the day, his conception of

OPENING PHASE of FLANDERS CAMPAIGN
(May 1940)




Map 2

operational art confines itself to a decisive attack on a narrow frontage by a corps or group to ensure penetration of tactical defenses followed by exploitation to operational depths. Guderian's concept is best captured by his oft repeated maxim: "Klotzen, nicht Kleckern," by which he meant "Fist, not Fingers." To ensure penetration, Guderian thought a mailed fist was necessary. At the tactical level it required a tank brigade of four battalions which could cover a zone of attack of 1500-4000 meters wide and 3000-4500 meters in depth.(44) As his operations in Flanders and Russia show, he thought armored heavy corps should be similarly concentrated for the purpose of achieving breakthrough and penetration to operational depths. At the opening of the Flanders Campaign (See Map 2), Guderian crossed the Luxembourg border with three panzer divisions abreast in his XIX Army Corps. 2nd Panzer Division in the north attacked through Vianden; 1st Panzer Division in the center--making the main attack--moved through Wallendorf; and 10th Panzer Division, with Infantry Regiment Gross-Deutschland protecting the corps left flank, attacked through Etternach. The distance between Vianden and Etternach is about 20 Kilometers, giving each division a frontage of about 6.3 Kilometers assuming no variation in width between main and supporting attacks. Later, in his crossing of the Meuse River on 13 May Guderian concentrated his three panzer divisions on a ten-Kilometer front around Sedan to ensure he penetrated quickly the French defenses in his sector. In both these

instances Guderian concentrated an armored corps consisting of some 828 tanks on a very narrow frontage.(45)

The opening phase of the Russian Campaign also illustrates Guderian's view that attacks by armored forces should be conducted on narrow frontages. His Second Panzer Group attacked into Russia on 22 June 1941 with four panzer, two motorized, four infantry, and one cavalry divisions along a line of departure of about 88 kilometers.(46) Although the average frontage for Second Panzer Group was 8 kilometers per division, this figure is misleading. All the terrain along the Bug River, the line of departure, was not suitable for tanks, which Guderian thought should conduct the main attacks in narrow zones of attack. Nor does it address the depth of his attack, which Guderian provided for by giving XLVI Panzer Corps, consisting of 10th Panzer Division and SS Das Reich Division, and the Gross-Deutschland Regiment, the mission to follow his panzer group's left wing, which was to pass to the north of Brest-Litovsk. As Guderian saw it, "the essentials of conducting panzer offensives were suitable terrain, surprise and mass deployment in the necessary width and depth."(47) Unfortunately, Guderian never really stipulates what the necessary width and depth might be, but surely if pressed on this point he would reply that the width and depth of a panzer attack depends largely on the terrain and the enemy defenses in the area under consideration; to say more would be to demonstrate tactical ignorance. The general proposition which

emerges, however, is that relatively narrow attack sectors are essential to penetration of tactical zones of defense. But that is only part of it, for Guderian's words "mass deployment" refer specifically to armored concentrations.

Massing forces on narrow frontages does no good unless the right sorts of forces are massed, and Guderian clearly thought tanks should be the weapons a corps or group commander should seek to concentrate. Two reasons drove his thinking on this subject. First, because of their high degree of mobility, armored units could be concentrated more rapidly than foot-mobile infantry divisions.(48) Second, only tanks, with their armor protection against small arms fire, could penetrate tactical defenses rapidly without suffering unacceptable losses and then continue the attack into the operational depths of an opposing force. About the first reason, one could say that motorized divisions could concentrate just as rapidly as panzer divisions. This is true, but Guderian understood the psychological shock effect that concentrated armored units have at both the line of contact and against thinly held lines of communication and rear areas. He thought it imperative to hit the enemy with speed, surprise, and shock from the outset to knock the enemy off balance and then keep him reacting to events.

In his book The Blitzkrieg Era and the German General Staff, Larry Addington describes Guderian's crossing of the Meuse River on 13 May and illustrates how Guderian employed

armored forces. Around Sedan the Meuse is 60 yards wide and unfordable; French defenses on the west side consisted of pillboxes and entrenchments with a density of eight pillboxes and eight machineguns every mile, or one every 200 yards of front. Field artillery batteries were behind these infantry emplacements. To overcome these defenses, Guderian directed close support aircraft to attack French artillery units for half a day, and then had German tanks roll directly to the water's edge, firing point blank into the pillboxes. German motorized infantry units--organic to the panzer division--brought up pneumatic boats and began crossing the river.(49) Under the combined suppressive fires of the tanks, anti-tank and anti-aircraft weapons, the infantry quickly established a bridgehead, enabling engineers to bridge the Meuse. Once this crucial step had been taken, the armored units were then in a position to cross the Meuse and continue the attack without passing through other divisions. As will be seen later, Guderian thought avoiding passage through other units was immensely important. The main point here is that Guderian concentrated his armor up front to achieve penetration and ensure that it would be in a position to race into the operational depths of the defending enemy.

One may well wonder what value there is in achieving operational depth anyway. Considerable, if Guderian's operations in Poland, Flanders, and Russia are to be taken as representative of the potential benefits. In the Polish

Campaign, for instance, Guderian recounts that by 4 September 1939 his XIX Army Corps had pushed across the Polish Corridor to the Vistula River and had totally destroyed two or three Polish infantry divisions and one cavalry brigade, capturing thousands of prisoners and hundreds of guns.<50> The emergence of Guderian's XIX Army Corps from the Ardennes and its subsequent race to the English Channel during the Flanders Campaign is well known. The consequent loss of major Allied forces north of the Aisne River proved devastating to Allied attempts to defend France, and led to the strategic consequence of France's capitulation. The point about operational depth is illustrated by the fact that the distance from Sedan to Abbeville is 238 kilometers, a distance Guderian covered in seven days.<51>

Similarly, Guderian's panzer thrusts to operational depths in Russia destroyed the fighting power of tremendous numbers of Russian units. Two major encirclements of Russian forces in which Guderian's Second Panzer Group participated amplify the point about operational payoff. Between 22 June, D-day for Operation BARBAROSSA, and 29 June 1941--just 7 days--Guderian's Second Panzer Group, consisting of nine divisions and an independent infantry regiment, attacked 440 kilometers into the Russian hinterland and reached the city of Bobruisk along the Beresina River, thereby forming the southern pincer of the gigantic Minsk pocket. In the Minsk pocket, closed by Hoth from the north and Guderian from the south, 32 Russian rifle

divisions and 8 tank divisions were caught, totalling 290,000 Russian prisoners, 2500 tanks, and 1400 guns. By 16 July 1941 (D+25) Guderian's lead elements had entered Smolensk and covered some 660 kilometers.(52) In the Smolensk pocket Guderian's panzer group participated in the capture of 185,000 prisoners, 2030 tanks, and over 2000 guns.(53) These facts support the understated claim that the payoff for reaching operational depths quickly can be significant. However, it must be remembered that operational success is measured by the operational or strategic effects operations bring about. Unlike the Polish and Flanders Campaigns in which Guderian's operations played a decisive part in achieving the strategic goals of the collapse of armed resistance and surrender of the armed forces, in the Russian Campaign his operations failed to achieve Hitler's envisioned strategic goals, however successful they may seem.

A final point about the offensive nature of Guderian's operational art which deserves mention is his employment of an operational reserve. The first point on which Guderian insisted was that it was NOT one of the functions of the reserve to reinforce failure; rather, its function was to exploit success wherever it may occur. Another important function of the reserve, which is amply demonstrated by Guderian's conduct of operations, was to provide flank security for strung out, attacking panzer columns. Both of these functions had some impact on Guderian's decision about whether there should be a

reserve in a particular situation, and if so, what its size and composition should be.

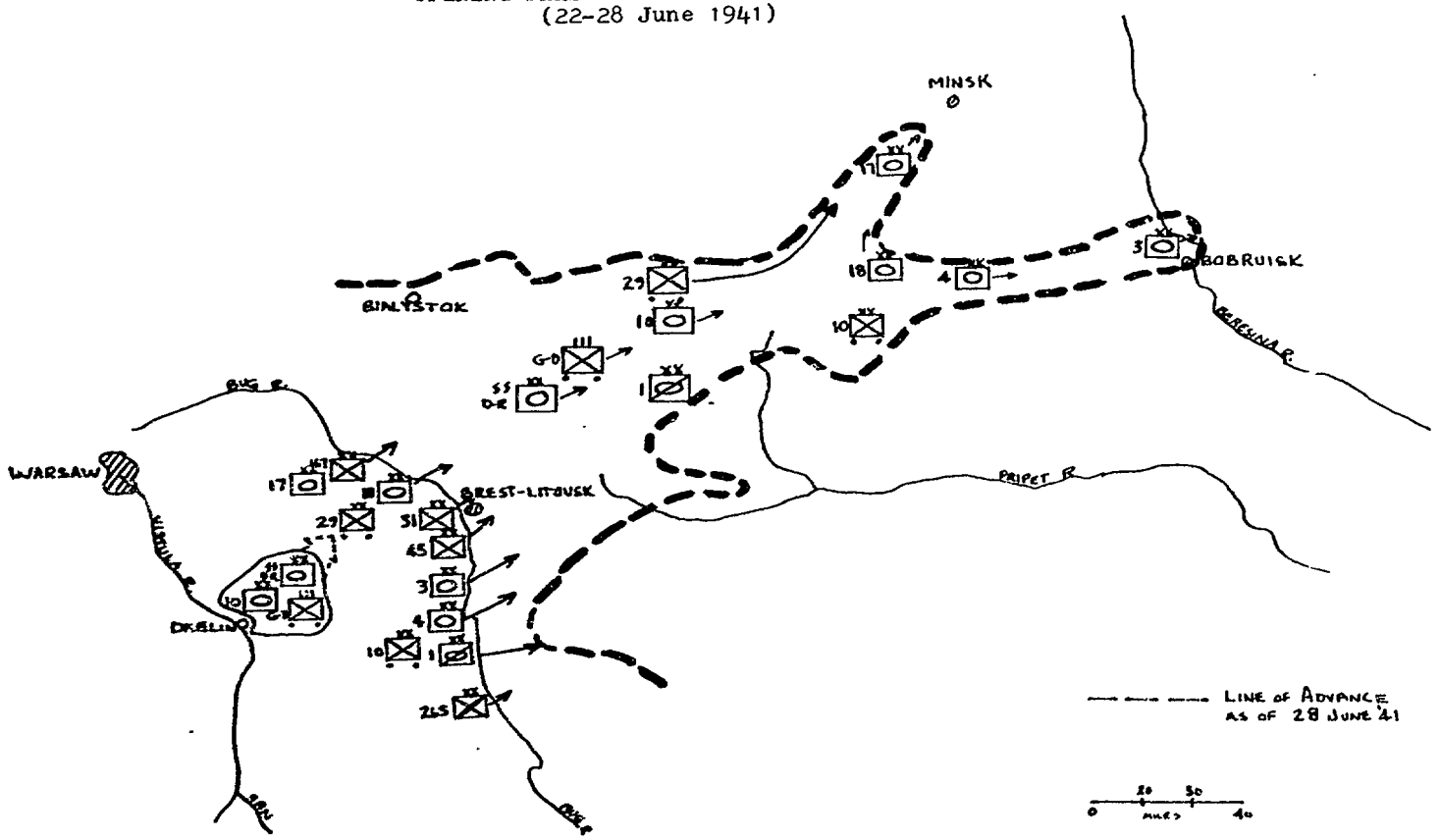
Generally, Guderian did employ an operational reserve in the course of his operations in Poland, Flanders, and Russia. At corps level he usually employed a regiment-size unit such as the Infantry Regiment Gross-Deutschland whereas at the panzer group or army level he kept a corps-size reserve whenever the situation permitted. These, however, are only broad generalizations to which there are clear exceptions. The reasons for the exceptions may help illuminate Guderian's thinking on the employment of operational reserves.

At the beginning of both the Polish and Flanders Campaigns, Guderian did not employ a recognizable reserve in his army corps, in each case for good reasons. In the Polish Campaign he attacked into the Polish Corridor employing one panzer and two motorized divisions abreast, with his panzer division making the main effort in the southern portion of the corps sector. Here, Guderian did not employ a reserve for three discernible reasons. First, he reinforced 3rd Panzer Division, his main effort, with corps troops such as artillery. Second, his corps southern boundary, the Zempolno River, provided some protection for his southern flank. And third, 23rd Infantry Division, the Army reserve, had the mission to follow 3rd Panzer Division, thereby providing a reserve for all intents and purposes. In the latter stages of the Polish Campaign when his XIX Army Corps attacked from East Prussia toward

Brest-Litovsk, Guderian employed the separate Lotzen Brigade, which was attached to his corps as a reserve element protecting the left flank of his attacking divisions. Similarly, in the Flanders Campaign Guderian attacked into Luxembourg with no corps reserve. But again, there were good reasons for this, not the least of which was the fact that the sixty-five kilometers of Allied front running through the southern Ardennes was defended by the inconsiderable force of only four French cavalry divisions and some odd Belgian units. So the enemy Guderian expected to encounter was not formidable in his sector. Additionally, following behind Guderian's corps was XIV Army Corps, providing depth and security for Guderian's panzer divisions. He did, however, withdraw Infantry Regiment Gross-Deutschland from his southern flank and move it into corps reserve on the evening of the second day of operations in France.

It is arguable that Guderian envisioned Gross-Deutschland Infantry Regiment's role on the flank of XIX Army Corps as being a reserve mission, for in his operations in Russia he frequently employed a one or two-division reserve which followed the main attack echeloned to the rear for both depth and flank protection of the unit it followed. This was precisely the function of XLVI Panzer Corps in the opening phase of BARBAROSSA (See Map 1). That corps, consisting of one panzer and one motorized division as well as Infantry Regiment Gross-Deutschland, followed Guderian's left-wing corps,

OPENING PHASE of the RUSSIAN CAMPAIGN
(22-28 June 1941)




MAP 1

echeloned just inside of the northern most elements of the left wing. Note, first, that his Army Group Reserve was composed of one-fourth of Guderian's mobile forces under a corps headquarters. Second, its mission was to follow the corps making the main attack, protect the Army Group's left flank, and be prepared to pass through the attacking corps if so directed. As it developed, within two days Russian counterattacks against Second Panzer Group's northern flank from around Bialystok prompted Guderian to commit the 29th Motorized Division from Panzer Group Reserve to secure the left flank.(54) This fact suggests two points about Guderian's employment of operational reserves in offensive operations. First, at the army group level he appeared to commit reserves in division-size elements. He practiced this throughout the remainder of the campaign in Russia. Seldom did he commit a complete corps. Second, he appears to have made an effort to reconstitute a reserve as soon as possible. In the case cited above, he did not do this because he still had 10th Panzer Division and Gross-Deutschland Infantry Regiment available as an army reserve.

Additionally, Guderian's retention of a corps-sized reserve had an ancillary function which his remarks in Panzer Leader suggest. About operations around Moscow in December 1941 he says:

> I decided to...assemble XXIV Panzer Corps in

> the Orel area as army reserve so as to give the units of that corps a short rest and to create an operational, mobile force at my disposal.<55>

It is clear that Guderian saw the reconstitution of a reserve as a means for refitting and resting his units. His operations throughout the Russian Campaign show that he continued to revitalize the fighting power of his units by rotating them into a reserve status when he deemed appropriate. Here perhaps the analogy of rotating the point man is apt: Guderian recognized the potential hazarards associated with keeping units in combat without respite.

Guderian's statement about a mobile reserve here was echoed later when he served as Chief of the Army General Staff. About Rommel's plan for the defense of the Atlantic Wall he says:

> It is...a matter of considerable regret that Rommel failed to understand the need for possessing mobile reserves.<56>

Guderian's stance on the question of mobile reserves raises a subject which has been intensely debated since the Allied landings on Normandy. This debate about whether a forward defense was better than one which relied on mobile reserves is not here at issue, but Guderian's comment illustrates that he thought it proper to conduct operational art--defensively or offensively--employing an operational reserve comprising from one-fourth to one-third of the mobile combat forces available. In defensive operations Guderian thought operational reserves

should be used to counterattack the flanks of an attacking enemy.<57> Offensively, his conception was that the reserve gave the corps or army commander the depth and flexibility necessary to protect vulnerable flanks and maintain the momentum of offensive operations by committing the reserve whenever and wherever it could exploit a weakness in the enemy defenses.

By this time it should be clear that Guderian's conception of operational art, though not devoid of defensive concepts, was primarily offensive in character and can be summarized by four tenets:

> Main attacks should be conducted on a narrow frontage to ensure penetration: "Klotzen, nicht Kleckern."
>
> Heavy concentrations of armor forces supported by other arms should serve as the spearhead of main attacks.
>
> Main attacks should have as their object the quick attainment of operational depth to cut enemy lines of communication and stop employment of enemy reserves.<58>
>
> A mixed reserve of tanks and motorized infantry should follow the main effort to exploit success and protect the parent unit's most vulnerable flank.<59>

Taken together, these four tenets describe the offensive essence of Guderian's operational art. He apparently believed each of these principles was a key element in setting up the conditions necessary for operational decisiveness. But as we

will now see, also key to operational decisiveness was the need to gain and maintain the momentum of the attack.

## MOMENTUM

Physicists generally define momentum quantitatively as the mass of an object multiplied by its velocity or speed. For the present purposes, this definition is useful because it illuminates the essential ingredients Guderian thought necessary for offensive operations to attain the depth and, ultimately, decisiveness necessary to succeed. His study of offensive operations conducted in World War I, especially the Battle of Cambrai, led him and other thinkers to the conclusion that sufficient mobile reserves--exploitation forces--were never planned, and as a consequence, operational decisiveness was never obtained. In part the difficulty was technological because there were no tanks for much of the war and, moreover, supporting arms such as artillery were not as mobile as the tanks and so no genuine combined arms team was possible. The advent of the tank, the airplane, and the self-propelled howitzer changed all that. Guderian recognized the significance of the technological changes and melded the ideas of men like Liddell Hart, Fuller, and de Gaulle into a workable doctrine. One of the essential ingredients of that doctrine, as we have already seen, is the requirement for offensive action by

concentrations of armored forces. Here the physicist might say that, in very crude terms, concentrations of panzer divisions in narrow zones of attack constitute the mass variable of the momentum equation. Pressing the comparison, we should readily see that Guderian thought all that remained to achieve the desired momentum was to get masses of tanks moving rapidly toward their objectives. Not surprisingly, then, Guderian thought the success of a panzer corps or panzer group attack depended greatly on the speed with which it was carried out. In fact, he thought that a high tempo of operations, a tempo to which the enemy was unable to react, was absolutely crucial to operational success.(60) The purpose of this section on momentum is to show how Guderian gained and maintained momentum and, in consequence, lay out the principles of momentum which guided his planning and conduct of operational art.

It is clear from both his writings and operations that Guderian thought one sure method of gaining momentum in the first place is by surprising the enemy. The requirement here is not for complete surprise; all that was needed, Guderian thought, was an element of surprise sufficient to render the defending enemy incapable of reacting in a manner capable of disrupting the attacking commander's plan. Nor was it sufficient merely to have tactical surprise, for the effects created would not have the decisiveness Guderian sought. What was needed was some way of achieving operational surprise which would render the enemy's reactions to an attack irrelevant

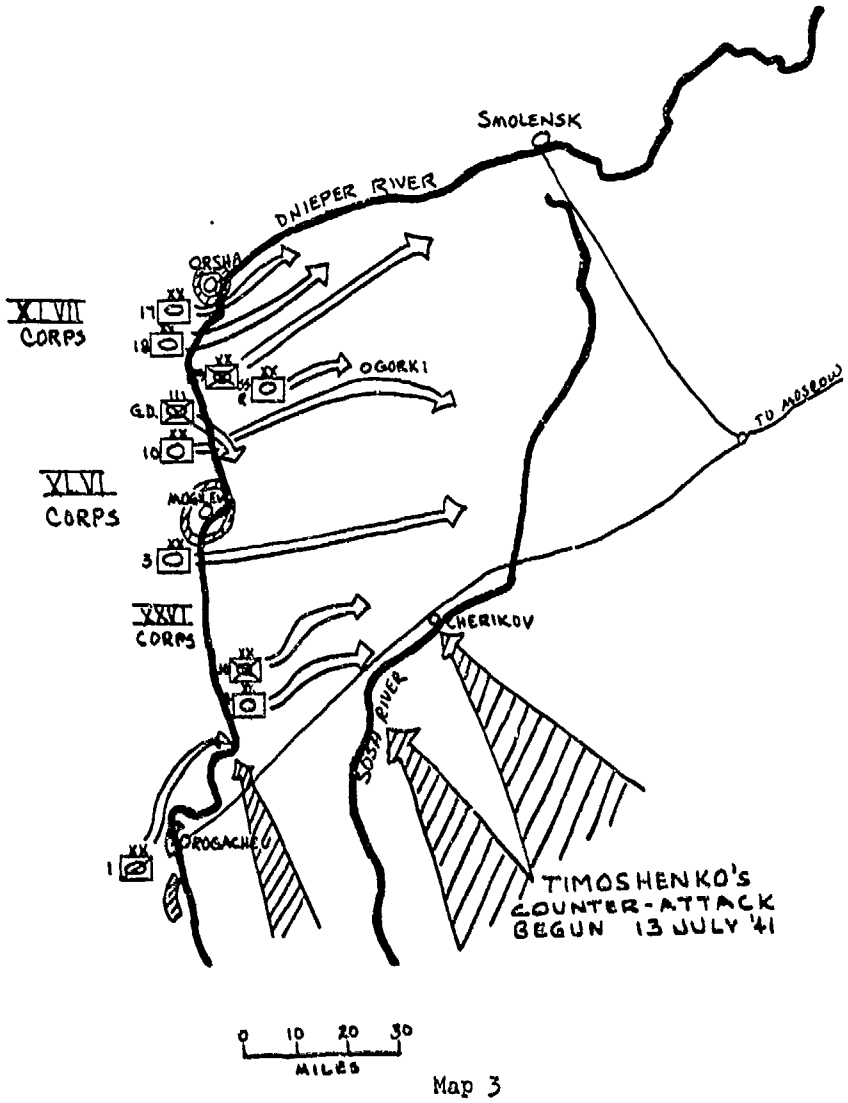
because of their lack of timeliness. Translated from the theoretical into the practical, the question he faced was how to achieve surprise with massed armor formations with all their tanks and other vehicles. To bring the problem into clearer focus, we need only to digest the fact that a panzer division of 1939 had over 2600 tracked and wheeled vehicles and could easily occupy fifty miles of road space.(61) The problem, of course, is magnified if one wants to conduct a surprise attack with a corps consisting of three such divisions. In spite of the magnitude of the problem, Guderian found two methods of achieving the surprise and, hence, the initial momentum he needed to gain decisive results: night movements and avoidance of forward passage through infantry units.

In every campaign in which Guderian participated he made extensive use of night movement to conceal his intentions from the enemy and gain surprise. For the opening phases of the Polish, Flanders, and Russian Campaigns, all attack preparations involving forward movement of his units were conducted at night. Guderian's XIX Army Corps, for instance, was notified on 31 August 1939 that it would attack into Poland the next day at 0445 hours. His corps subsequently moved into planned attack positions during the evening of 31 August and jumped off on time 1 September.(62) Similarly, preparations for the opening phase of Operation BARBAROSSA required virtually all movement to be accomplished under cover of darkness, with H-hour set for 0415 hours, 22 June 1941. Guderian thought that

to aid in achieving surprise intense but short artillery preparations of about one hour's duration were appropriate. In fact, he weighed the relative merits of dispensing with the artillery preparation for the opening phase of BARBAROSSA, thinking that perhaps the surprise effect was more important than the increase in German casualties without the preparation. Ultimately, he decided to go with the one-hour preparation because he was convinced the Russians were completely in the dark about German operational intentions.(63) Subsequent operations in the Russian Campaign indicated that movement under cover of darkness was the rule rather than the exception in Guderian's conduct of operations.

Guderian's crossing of the Dneiper River on 10 July 1941 (D+19) illustrates not only his use of darkness to mask his intentions and achieve surprise but also his fervent desire to avoid passing through less mobile infantry divisions, which would impede his efforts to gain momentum. By 7 July 1941 Guderian's Second Panzer Group had reached the formidable Dneiper River line, a natural obstacle along which Russian forces would be able to establish a coherent defense if given time to do so. Guderian's panzer thrusts had carried his units over 450 kilometers in nineteen days, completely outrunning the slower moving infantry divisions from the armies following his panzer group. Estimating that it would take 14 days for those infantry divisions to close to the Dneiper River and seize bridgeheads for his panzer corps, Guderian decided to move

DNEIPER RIVER CROSSING
(July 1941)




Map 3

under cover of darkness into attack positions on the west bank of the Dneiper in preparation for crossings on the morning of 10 July. The concentration of his 17th and 18th Panzer Divisions south of Orsha and the 10th and 3rd Panzer Divisions around Mogilev (See Map 3) took place smoothly during the nights of 8 and 9 July. Guderian's surprise crossing of the Dneiper caught the Russians off guard, an advantage Guderian exploited by ordering his lead units to continue attacking during the night of 10 July.(64)

As suggested earlier, this example also illustrates Guderian's aversion to passing mechanized formations through foot-mobile units. General von Kluge, Guderian's immediate superior, objected to Guderian's scheme for crossing the Dneiper without the support of infantry divisions, claiming it was too risky--a point to be addressed in a later section on risk. For the present discussion, Guderian's counter-argument was that waiting for the infantry units to catch up to the armor formations would destroy the momentum of the attack, which Guderian deemed essential for success. Consistent with his earlier arguments about crossing the Meuse and Aisne Rivers in France the previous year, Guderian thought passing mobile units through infantry units only impeded gaining and maintaining momentum. In fact, about the crossing of the Aisne he says:

> I did not care for the idea of attacking through the infantry divisions, since their numerous and large supply columns tended to

block the roads....<65>

In both of those earlier operations he argued successfully that the equipment and horse-drawn vehicles of the infantry divisions not only served to complicate command and control but also clogged the road nets, which were vitally needed to move tanks and armored reconnaissance vehicles along. As in those earlier operations, Guderian's superior--von Kluge in this case--relented, and Guderian crossed the Dneiper without the aid of the infantry divisions, thereby retaining the high tempo and momentum of operations he desired. The payoff later at Smolensk, of course, was phenomenal: 185,000 prisoners and over 2000 tanks captured.

Guderian's technique of night movement raises an issue worth examining: how did he control such movement? His own words in "Armored Forces" provide part of the answer.

> Careful determination of the various approaches in friendly territory, especially for night movements, will add greatly to a smooth traffic flow. Guided by an ample number of road signs and traffic guards, the tanks may reach the concentration zones quietly and without the use of lights.<66>

Here Guderian is suggesting the obvious first step toward success--study the map, see the terrain and its supporting road nets. This is exactly what he did in his operations because rapid concentration of armored formations and deep exploitation into operational depths require supporting road networks, a point Guderian clearly appreciated. Use of traffic signs and

guides are other common sense steps to take for control during night movement, but deserve amplification. Although not established regularly until the beginning of the Russian Campaign, German panzer divisions had an officer designated as the Staff Officer for March Supervision (STOMA). By the opening of BARBAROSSA, each panzer division had a designated officer working in the operations section whose position today we might call the G-3/Traffic Regulation and Control Officer (G-3/TRACO). The TRACO wrote the Traffic Control Annex for an operation order and, employing assets from the division military police company and division motorcycle messenger platoon, ensured traffic moved in accordance with that annex in support of the overall concept of operation.(67) The creation of this staff position attests to the importance placed on traffic regulation and, hence, secrecy of night movement for purposes of concentration--all directed toward achieving operational surprise and momentum so vital to operational success.

In addition to movement at night to achieve undetected concentration of armored forces and avoidance of passage through other units to gain momentum, Guderian retained momentum by moving divisions along multiple parallel axes, bypassing points of resistance, and always exhorting his subordinate commanders to maintain a high tempo of operations--speed, he thought, was absolutely essential.

Seldom did Guderian allow one unit to follow immediately

behind another. Rather, he thought that movement along multiple parallel axes was much preferable because it reduced the probability that his corps or panzer group's attacks would stall out, and this for several reasons. First, with multiple divisions or corps attacking along parallel axes, mutual support among those formations, especially flank security, was possible. This point is clearly illustrated by Guderian's attack with XIX Army Corps in the Flanders Campaign. He crossed Luxembourg and the Meuse River with three panzer divisions abreast, with 1st Panzer Division in the center designated as the main effort. 2nd and 10th Panzer Divisions were in positions to protect the 1st Panzer Division from flank attacks.

A second reason for use of parallel axes was that should one division get held up because of stiff enemy resistance, the main point of attack--or schwerpunkt as it is sometimes called--could be shifted to another division or corps which was enjoying success. This process of shifting the schwerpunkt had the additional benefit of confounding the enemy because it continually presented him with a new threat, requiring the enemy commander to react rather than deliberately execute his own plan. Nowhere was this effect more pronounced than in the Flanders Campaign. The French high command's inability to react to a changing situation in a timely enough fashion is well documented and needs no further description here. What is important for present purposes is to understand how Guderian

retained the momentum of his attack: advance on multiple axes so flexibility in the point of main effort could be maintained. By itself, however, the concept of multiple axes was not sufficient.

Guderian also directed his commanders to bypass enemy strongpoints and centers of resistance and let follow-on infantry units reduce such pockets. As an example, in the Russian Campaign Guderian was violently opposed to having his panzer divisions or corps participate in pocket reduction operations. After closure of the Minsk-Bialystok pocket on 27 June 1941, Guderian opposed delaying panzer elements from executing subsequent operations which entailed crossing the Beresina River and seizing the first operational objective of the campaign, the area of Smolensk-Elnya-Roslavl. About this phase of the operation he says:

> My views concerning the next stage of the operations were as follows: to detach the minimum amount of the Panzer Group for the destruction of the Russians in the Bialystok pocket, while leaving the major part of this operation for the following infantry armies: thus our rapidly mobile, motorized forces would be able to push forward and seize the first operational objective of the campaign....(68)

Evidently, Guderian's concern was that valuable and irreplaceable combat power needed for achievement of operational objectives would be dissipated by using panzer and panzer-grenadier divisions to reduce enemy pockets of resistance. Moreover, and this is more fundamental, Guderian

thought such pauses in the tempo of operations would destroy the momentum of the attack, allow the enemy to establish coherent defenses, and seriously jeopardize the attainment of key operational objectives.

As this discussion illustrates, Guderian's conception of operational art demanded a high tempo or speed of operations. In the Flanders Campaign his army corps covered 50 miles in the first two days of the campaign; on 20 May alone, in excellent tank country, his lead elements covered 56 miles.(69) In the seven days between 13 May and 20 May his panzer units covered 149 miles, an average distance of 21 miles per day. Similarly, in the Russian Campaign his panzer units covered 273 miles in the first 7 days, and by 16 July 1941 (D+25) his forces had penetrated 413 miles into the Russian frontier. Here the average distances achieved were 39 miles for the first seven days, the maximum distance in any one day having been 72 miles.(70) Writing about Guderian's operations in The War Lords, John Strawson says:

> The essence of BlitzKrieg was...surprise, speed and concentration. The three things were of course self-sustaining. They fed upon each other. Surprise facilitated speed; speed fostered surprise; concentration enhanced both.(71)

This is an apt characterization both of Guderian's operations and of the dynamics among surprise, speed, and mass. As suggested at the beginning of this section on momentum, mass

multiplied by speed gives a momentum vector. In order to achieve the initial momentum, Guderian thought surprise indispensable, and his operational methods illustrate that he went to great pains to achieve operational surprise whenever he could. A surprise armor attack--surprising in its location, force composition, changing direction, and speed--enabled his panzer units to punch through weak defensive areas into the rear of tactical defenses. Taken by themselves, however, such procedures would not, Guderian thought, be sufficient. He thought maintenance of momentum was essential if seizure of operational objectives and, hence, operational decisiveness were to be achieved. Therefore, he sought to move panzer divisions and corps along parallel axes toward operational objectives. Parallel movement would allow attacking units to support one another, bypass strongpoints when necessary, and conduct converging attacks when necessary to seize operational objectives. But in order to maintain a high tempo of operations, congested areas and enemy centers of resistance had to be bypassed. And mobile forces could not be tied up reducing pockets of resistance; otherwise, speed and momentum and, eventually, the initiative would be lost.

To summarize briefly, the following five tenets guided Guderian in his efforts to gain and maintain the momentum in his conduct of operational art:

> Surprise attacks by heavy concentrations of armored forces are essential for operational success.

Avoid passing through other friendly formations because such passages reduce momentum.

Attack on multiple parallel axes.

Bypass enemy strongpoints with mobile forces; use less mobile forces to reduce areas of resistance.

Keep moving at the greatest possible speed--reinforce success.

It is arguable that of these five tenets Guderian probably regarded surprise and speed as the two essential elements. And since he saw that speed of operations begets surprise and further amplifies its effects throughout the enemy command and control structure, it is also probably true that he thought speed was the absolutely key principle for success in mobile operations. It is no wonder, then, that his troops affectionately called him "Hurrying Heinz."

COMMAND and CONTROL

Guderian's exercise of command and control over panzer divisions and panzer corps reveals his tenets for controlling highly mobile combat forces and also gives a glimpse of his leadership style, personality, and character. This is so because a command and control philosophy is intimately tied to the commander's leadership style and philosophy. Guderian's command and control procedures offer evidence that he thought there were three tenets for an adequate concept of command and control for the sort of mobile forces he commanded: (1) lead from the front; (2) have a small, highly mobile command post; (3) employ wireless-radio communications to the greatest possible extent.

In his book German Generals of World War II, Major-General F. W. von Mellenthin tells a story about Heinz Guderian which aptly reflects the importance Guderian accorded his first principle of command and control: lead from the front. von Mellenthin's story is worth recounting in full.

> During the Campaign in France, Colonel Dingler was detached by the Army High Command to Guderian's Panzer Corps as a liaison officer. In searching for the general's command post, Dingler ran into artillery fire and got the impression that the German attack in that sector was not going according to plan. In a ditch at the roadside he spotted a divisional commander taking cover with one of his staff

> officers. He joined them and asked where he could find General Guderian. With a laugh they told him, "If you want to speak to the general, grab a rifle and inch your way up to the crest in front of us. He's up there among the men, taking potshots at the French."(72)

Although this story overstates the case and raises the question whether a corps commander should be spending his valuable time "taking potshots" at the enemy, its fundamental point is clear: Guderian thought all commanders should be well forward so they could exercise command and control through personal presence. Guderian's comments on the command and control of armored forces, which he recorded in 1936-37 in "Armored Forces," reflects that his sentiments were not after-the-fact reflections on the control of such units. He stated: "All commanders must post themselves far in front, where they may constantly supervise the advance of their units and bring their personal influence to bear."(73) Guderian put teeth into this tenet as well by spending much time down at regiments, battalions, and companies trying to assess the capabilities of his soldiers and the dynamics of the changing combat situation.(74) The German phrase for it is "finger spizengefuehl," and it means a feel through the fingertips. Like most of the German officer corps, Guderian believed that the only way a leader can have a true feel for the ebb and flow of a battle is to be where the action is--forward. Moreover, he also thought that in fast-moving operations, the only place

from which the commander can effectively influence the action by making timely decisions is forward at the critical spots on the battlefield. In virtually every operation in Poland, Flanders, and Russia Guderian located himself well-forward with the combat units where he thought his most threatened formations were. For example, in the opening phase of his XIX Army Corps' attack into Poland, he accompanied the 3rd Panzer Brigade of the 3rd Panzer Division, the corps main effort, in an armored command vehicle. In relating this story, Guderian proudly points out that he was the first corps commander ever to accompany tanks into battle in that fashion.<75> Although he thought that many times in combat the mere presence of the commander might be sufficient to maintain the high tempo of operations he believed necessary for success, Guderian also understood that commanders, even very senior commanders, had the responsibility to take charge immediately should inevitable friction begin to slow the pace of operations and jeopardize success. Another example involving the 3rd Panzer Division in the Polish Campaign illustrates Guderian's consistent adherence to his principle of leading forward. At one point early in the Polish Campaign the 3rd Panzer Division's attack stalled out along the Brahe River in the Polish Corridor when its commander was called back to Army Group Headquarters. Guderian heard about the stalled attack from a young lieutenant who boldly told Guderian the sad situation at the riverline. He

immediately went forward, picking his way among idle German and burned out Polish vehicles, took charge of a confused situation, ordered reconnaissance units across the river, and established a bridgehead into which he began moving tanks as rapidly as he could.(76) This example is no isolated incident; Guderian had an uncanny ability to be at the right place--the critical place--at the right time: he evinced finger spizengefuehl at every turn. But he never could have done so if he had stayed in and around his corps or panzer group headquarters.

Several factors allowed Guderian to put his principle of "lead forward" into operation. First, he practiced what he preached. By going forward he set the example; he virtually forced his subordinate corps, division, and regimental commanders to go forward also. One of his methods of operation was to meet corps and divisional commanders at their forward command posts. There is no evidence that he ever insisted on formal briefings, preferring instead to discuss the current situation and future operations over a simple operations map. Second, there is ample evidence that Guderian believed that a corollary to his three-tenet command and control philosophy was "Keep it simple." On this score, Guderian recounts the story of his encounter with General von Hindenburg at the close of the 1933 maneuvers. Hindenburg remarked that "'[i]n war only what is simple can succeed. I visited the staff of the Cavalry Corps. What I saw there was not simple.'" Guderian's reflection

on Hindenburg's remarks was: "He was quite right."(77) The connection between simplicity and success in fast-moving operations should be clear: a simple plan which clearly conveyed the commander's intent or overall purpose and which leaves the execution largely up to subordinate commanders will have a greater probability of success than an elaborate plan of any sort, which would surely become irrelevant once the friction of war intervened.

After the war Guderian lamented that Hitler's control over the Army High Command in the later stages of the war led to a change in the standard "'procedure of assigning missions' by which the subordinate commander received a mission with its manner of execution left to his own initiative."(78) This procedure gave way to rigid orders that were frequently outdated by events. A third point is that he also knew he could not command such fast, fluid operations by relying on information coming up from regiment to division to corps. Because the fronts on which he advanced were relatively narrow, he was able to focus his attention on the critical aspect of the operation--the schwerpunkt--and get critical information first hand.(79)

A final factor must have been the degree of trust and confidence he was able to hold in his staff, especially his chiefs of staff. Throughout his book Panzer Leader, Guderian makes it clear that he spent little time at his main command post, where his chief of staff and the bulk of his staff

officers worked. During the critical battles around Smolensk, for instance, during which Guderian's and Hoth's panzer groups encircled more than ten Russian divisions and 2000 tanks, Guderian was absent from his panzer group headquarters for twenty-two hours.<80> Hence, he relied heavily on the competence of his chief of staff to run operations while he was forward. An interesting fact that supports this view is that Guderian made every effort to take his corps and group staffs with him as he moved from one command to a new command. When he gave up command of the XIX Army Corps at the conclusion of the Polish Campaign, Guderian took his staff with him for the attack into France. Then, when he took command of Panzergruppe Guderian for the second phase of the campaign in France, he took his staff from XIX Army Corps with him.<81> In essence, they became his new panzer group staff, so the mechanism for smooth operations was built into Guderian's own established staff procedures and the thinking of his staff officers. This is an important point because as Kenneth Macksey argues:

> Neither the wider frontage [of a group] nor the increased enemy resistance made any difference to Guderian's conduct of operations. He handled a Group as he handled a Corps--by personal leadership at the front by wireless--and overcame the paucity of the roads by working his staff and drivers that much harder in his efforts to keep in touch with the tanks at the spearhead of the action.<82>

The salient feature of this comment is that it reflects that Guderian commanded and controlled a group of two to four corps

in the same manner he controlled a corps of three divisions: he led from the front. For Guderian, size of the organization mattered very little. But in order to apply this first tenet of his command and control philosophy, Guderian had to adhere to two other tenets: employ a small, highly mobile forward command post and make extensive use of wireless communications and an airplane.

Consistent in his application of the principle of equal mobility among combined arms units, Guderian deemed it essential that he operate out of a small, mobile forward command post. In "Armored Forces" he states that "maneuver being rapid and it being necessary for the commander of a tank unit to be at the head of his command," only armored signal vehicles that possess high mobility can be used.(83) Furthermore, the requirement for high mobility virtually dictated that his forward command post be small and austere; otherwise, his command post could never displace rapidly and be responsive to his need to remain with the schwerpunkt. Guderian describes his own command staff at the beginning of the Russian Campaign as a command staff consisting of two armored wireless trucks, a "number of cross country vehicles," and some motorcyclists.(84) Complementing this command post arrangement and his command and control philosophy was Guderian's use of a light liaison plane, a Fieseler Storch (FI 156). He frequently used this dedicated plane to transport himself quickly to one of his corps so he could be on hand to influence the action.

Having enhanced mobility through the use of a plane proved particularly beneficial in the Russian Campaign because of the vast distances his ground units covered at a rapid pace. Frequently, he would leave his forward command post by plane and have it move by the most expeditious land route to meet him at a predetermined location, where he would once again move by armored command vehicle.

The final critical element which allowed Guderian to operate forward as he did with a small, flexible command post was his reliance on radio communications. His training and experiences as a commander and staff officer in signal units during World War I convinced Guderian that wireless communications would be an essential part of an operational doctrine which envisioned the employment of armored vehicles on a fluid, fast-moving battlefield. Otherwise, there would be no way a corps or group commander, whose personal presence was required at the forward edge, could ever maintain control over some 300,000 men in four corps and as many as thirteen divisions. There had to be a secure, wireless means of communication. Hence, Guderian ensured that his panzer divisions, including most of his tanks and all his subordinate commander's command posts, were linked by wireless communications. In the two armored cars which comprised his mobile command post he had redundant secure wireless communications, enabling him to communicate rapidly with his chief of staff and major subordinate commanders. For his attack

into France in 1940 almost all of the tanks in his three panzer divisions had radios which enabled them to receive short "frag orders" in response to rapidly changing circumstances. By contrast, only about one-fifth of the French tanks were similarly outfitted.(85) Moreover, in Guderian's judgment command facilities on German tanks were first class, always better than the enemy's.(86)

There are, it seems, good reasons to hold that Guderian thought three tenets of command and control were of paramount importance in the conduct of operational art.

> First, all commanders--including operational level commanders--MUST lead from locations that are well forward.
>
> Second, a small, highly mobile command post, supplemented at times by an airmobile capability, is required to maintain control in fast-moving warfare.
>
> Third, secure wireless communications linking the key headquarters and armored formations are essential to deliver timely orders in a rapidly changing situation.

It should also be clear that other factors played an important role in binding this command and control philosophy together. Certainly a commonly understood--at least among armored and motorized officers--doctrine for the employment of armored forces played an important part. A rigorous pre-war training program and a General Staff which shared a view on how to fight were also instrumental in allowing Guderian and other

commanders to command and control in the manner he did. Today it might be said that leaving the main command post and the formulation and execution of plans to staff officers engenders an element of risk as well as trust. Guderian probably would have agreed with this but gone on to point out that war itself is a risky business anyway. How he dealt with risk is the final subject of this chapter.

RISK

By now it should be apparent that Heinz Guderian was no ordinary field commander by any standards, even Lord Wavell's! There is evidence of what some would call rashness, others foolhardiness, on Guderian's part. Absenting himself from his main command post for twenty-two hours while critical battles raged during the closing of the Smolensk pocket, for example, leaves Guderian open to charges of taking unreasonable operational risk. Crossing the Meuse, Aisne, and Dneiper Rivers without the support of infantry divisions might be thought foolish on Guderian's part. A much more serious charge might be levied against Guderian as reflected in General von Bock's words to General Halder, Chief of the General Staff, concerning the Flanders Campaign:

> You will be creeping along ten miles from the flank of the Maginot Line as you break through, and hoping that the French will watch inertly. You are cramming the mass of tanks together into the narrow roads of the Ardennes as if there were no such thing as air power. And then you hope to lead an operation as far as the coast with an open southern flank 200 miles long, where stands the mass of the French Army.(87)

This statement by von Bock represents a serious criticism of Guderian's operational art because it suggests he was taking extraordinary gambles in operating the way he did.

Nevertheless, the historical evidence shows that Guderian was no gambler; rather, he was an able practioner of the operational art who saw, weighed, and--when appropriate--took calculated risks and adopted measures to minimize those risks. General von Bock's criticism of the Flanders operational concept is a useful place to begin an analysis because it points to two critical areas of Guderian's operations which entailed the acceptance of risk: concentrating armored formations in the presence of enemy air power and attacking with long exposed flanks.

According to Shelford Bidwell and Dominick Graham in their book Fire-Power, the fighting echelons of a panzer division could occupy fifty miles of road space just in administrative march column.(88) Considering the fact that panzer divisions had over 2600 wheeled and tracked vehicles, their assertion is probably true, and whether in administrative or tactical march order, armored and motorized columns moving along the narrow roads of a place like the Ardennes are lucrative targets for an enemy with air power. Guderian surely recognized this but thought several factors would operate to reduce the risk. First, there were good reasons to believe neither the French nor the British expected an attack in strength through the Ardennes. Moreover, because of the generally poor trafficability for vehicles in the Ardennes, there was no reason for the Allies to think an attack by tanks would ever come through there. These two factors of surprise

alone--location of attack and force composition--were reasons for Guderian to consider massing armored columns for an attack through the Ardennes. Furthermore, he believed highly mobile armored forces were inherently capable of achieving a third element of surprise--timing of the attack--because of the rate at which they could be concentrated. In the course of one night several panzer and motorized divisions could be moved from dispersed assembly areas far behind the line of departure to concealed attack positions for an unexpected early morning attack. Here, then, were three ways in the Flanders Campaign Guderian thought his armored forces could gain the surprise he thought essential for operational success. He also knew that night movement into selected attack positions the evening before would serve to reduce any risk of an enemy air attack. He further reasoned that since the Luftwaffe's first priority in the campaign was the seizure of air superiority, even if just locally, his panzer columns would have little to fear from French or British air power as they moved through the restrictive Ardennes terrain. Finally, air reconnaissance showed that the Ardennes region was only lightly defended by four French cavalry divisions and some Belgian units strung out on a sixty-five kilometer front.(89) Hence, the most direct approach toward the British-French center of gravity in the Flanders Campaign was through the Ardennes, where some 45 German divisions, including seven panzer and three motorized divisions, were to attack.(90) Guderian knew all this, and

because he believed the element of surprise and concentration at night would give his units an advantage, he thought the calculated risk entailed by concentrating armored forces in the presence of air power was reasonable. He also thought the size of the opposing enemy force and the overwhelming size of Germany's own forces weighed heavily in favor of accepting the risk, especially considering the gigantic payoff should the operation succeed. In order to succeed, however, those 45 divisions had to get through the Ardennes bottleneck quickly, so speed was essential.

It was on this question of speed that Guderian's and von Bock's analyses diverged. Notice that in his vision of an attack through the Ardennes von Bock described the attack as "creeping along." Clearly, Guderian had no such thing in mind. In fact, we have already seen that his whole conception of operational art was built on the premise of great speed of operations. And all that was required was a speed of operations faster than that with which the enemy could deal. So Guderian envisioned a critical period of movement through the Ardennes during which he would be vulnerable; but he also saw that his vulnerability would be reduced by the Luftwaffe's seizure of local air superiority and the speed with which his panzer formations moved through the Ardennes. As it turned out, of course, Guderian was right on all counts.

General von Bock's second objection, that of long exposed flanks, is more difficult to defend against. Bidwell and Graham

aptly describe the risk of exposed flanks by pointing out that the German panzer units reached out like a tentacle "no more than 30 miles wide and 200 miles long open to attack from either flank...."(91) Such a tentacle, of course, was vulnerable to counterattack or air strafing. And, in fact, around Arras on 21 May 1940 a British tank counterattack against the SS Division Totenkopf in a corps adjacent to Guderian's sent shivers up the German chain of command.(92) Long exposed flanks of the sort Guderian had in not only the Flanders Campaign but the Polish and Russian Campaigns as well were certainly causes for alarm about the risk such methods entailed. Even so, Guderian had his ways of dealing with risk to flanks.

One way he dealt with the risk of counterattacks to exposed flanks has already been suggested--security through speed. Guderian thought maintenance of momentum through speed of operations would prevent the enemy from putting together any coherent counterattack plan for two reasons. First, because his attacks were along parallel axes Guderian could continually shift the schwerpunkt of his attack to a new location, thereby confounding any enemy counterattack plans against one of his attacking columns. Second, any orders given by enemy commanders were rendered irrelevant by the time executing units received them because of the fast pace of operations; the situation had simply changed--requiring new orders--by the time the unit began to carry out its latest orders. But Guderian had other

ways of dealing with the threat of flank attacks. During the campaign in France, for instance, he refused to allow 10th Panzer Division, on the corps southern flank, to be diverted from its mission on the unconfirmed report that French cavalry were moving toward its flank. Instead of stopping 10th Panzer to deal with this threat to the corps' flank, Guderian moved the division a little north and had it follow a parallel route toward its objective with all due speed.<33> As it turned out, the report was false, but Guderian's reaction here reflects his usual approach: Keep moving toward the operational objective!

Guderian also reduced the risk to his flanks through his employment of air power. He always made widespread use of his air reconnaissance assets to watch exposed flanks. He found this technique especially useful during BARBAROSSA when he far outdistanced the follow-on infantry armies. In addition to his air reconnaissance units, Guderian used his close air support aircraft to protect his exposed flanks. Two cases in particular come to mind. First, as already noted in an earlier section on combined arms warfare, as Guderian crossed the Meuse River during operations in France, Luftwaffe units attacked French transport and rail centers as far as Reims, France, a distance of 85 kilometers. These air attacks in depth continued even after Guderian turned XIX Army Corps west toward Abbeville and the coast. In fact, the Luftwaffe pounded French units along the Aisne River as Guderian made his sweep to the coast, thereby protecting his southern flank from French

counterattacks. Similarly, in Operation BARBAROSSA Guderian used his air assets, both reconnaissance and combat, to protect his panzer group's right flank against a potential Russian counterattack during his encirclement of Russian forces in the Bryansk area.(94) In addition to air assets, Guderian used organic units as well to provide flank protection.

With few exceptions, Guderian echeloned his operational reserves in depth so they could provide his attacking panzer corps with flank protection. As suggested earlier, his use of the Gross-Deutschland Infantry Regiment on the left flank of XIX Army Corps for the attack into France indicates that he saw the threat to his left flank and attached the Gross-Deutschland Regiment to 10th Panzer Division to protect that flank. In the Russian Campaign, it is clear he took measures to reduce risk to vulnerable flanks. First, his use of the 1st Cavalry Division on the 2nd Panzer Group's right flank is unmistakable evidence of an attempt to reduce risk. He saw the Pripet Marshes on his group's right flank as providing some protection, and he assigned the 1st Cavalry Division to XXIV Panzer Corps, the right wing, because he knew this division was best suited to screen his right flank. While on the right flank of his group he had marshy terrain and a cavalry division in his favor,for his main attack on the left flank he had no such good fortune. Consequently, he assigned XLVI Panzer Corps, Group Reserve, the mission to follow the left wing, echeloned to the rear to provide depth and flank protection for the main

attack.(95) Moreover, in all these operations Guderian was keenly aware that there were other units--albeit less mobile--following his panzers, which would provide further depth and flank protection for his own exposed units.

A final technique Guderian employed to protect his flanks centered on his astute use of terrain. Frequently, he anchored one of his boundaries along a riverline or other obstacle, natural or manmade. In Poland he protected his corps' main attack and the corps' southern flank by anchoring it along the Zempolno River. In France the Ardennes Canal, Aisne, and Somme Rivers afforded some protection for Guderian's southern flank. His northern flank was not as vulnerable because enemy units to his north had Reinhardt's panzer corps to worry about.(96) Guderian began the Russian Campaign with the Pripet Marshes protecting his right flank, and he used riverlines whenever he could to protect his flanks, though a glance at a map of Russia suggests that the orientation of riverlines did not especially favor this technique. Guderian's answer to risk on his flanks was four-fold: (1) speed of operations; (2) use of air power for reconnaissance and interdiction; (3) depth and echelonment of operational reserves; and (4) use of terrain such as riverlines for protection.

Two other points about risk acceptance deserve mention. An operational technique of Guderian's which entailed some risk was his habit of outdistancing follow-on infantry armies. This practice prevailed in all three of his major campaigns but was

especially common in the Russian Campaign. The thought here is that by greatly separating himself from the slower infantry armies, Guderian put his units out of supporting distance of other units, subjecting his units to the possibility of being cut off, surrounded and destroyed. Moreover, the special capabilities of infantry units could not be brought to bear in support of the attacking panzer columns. Here, Guderian's crossing of the Dneiper River in Russia comes to mind. His lead panzer divisions reached the Dneiper on 7 July 1941, but infantry divisions from the army following his panzer group were not to reach the river for fourteen more days. General von Kluge wanted Guderian to delay crossing the Dneiper until those infantry divisions closed and could establish bridgeheads for a secure--less risky--crossing of the river. Guderian would have none of that and argued successfully that it was more important to attack across the river while Russian defenses were weak. In Panzer Leader he says he weighed carefully the risks associated with this move but was convinced the risk was justified, especially since panzer divisions had their own motorized infantry and engineers which were eminently capable of establishing and securing bridgeheads.(97) The inherent combined arms organization of the panzer and panzer-grenadier divisions helped reduce the risk of separation between supporting arms. The other factor, of course, was Guderian's standby solution--speed, speed, speed! This technique was acceptable until the Russians began to use anti-tank mines and

anti-tank guns in concert and in great numbers as they did in the Battle of Kursk in July 1943. There, it will be recalled, one reason the German IX Army's attack into the Kursk salient failed was that tanks and infantry became separated, resulting in the isolation and destruction of the tanks.(98) But that was in 1943, long after Guderian had finished commanding field units. Hence, he never faced the Russians when they had perfected a means of separating tanks from supporting infantry.(99)

No discussion of operational art would be complete without some mention, even if in passing, of logistical considerations, for historically such considerations have placed constraints on the conduct of operations which the commander exceeds only at some risk. Although there is no reason to believe Guderian's operational art was an exception in this respect, he appears not to have been unduly concerned about the logistical risks his rapid tank thrusts entailed. As Kenneth Macksey has observed, Guderian "was not in the habit of visiting the lines of communication," which of course is entirely consistent with his view that commanders belong forward.(100) Three reasons can be adduced which may help explain Guderian's approach to the potential problem of outrunning his logistical support.

First, panzer and motorized divisions may have carried fuel sufficient to allow them to achieve their operational objectives before an operational pause for resupply was

necessary. For the Polish Campaign panzer and motorized divisions drew fuel sufficient for 450 miles (725 Kms) and carried one basic load of ammunition. One additional load of ammunition was Kept at forward railway depots while two more were Kept ready to go on railway sidings.(101) These facts suggest that inherent basic loads and rapid exploitation of captured railroads allowed Guderian to achieve operational objectives without a pause in operations. In both the Polish and Flanders Campaigns, Guderian's initial operational objectives--each within 250 miles--were well within his units' operating ranges. The wide expanse of Russia presented a different challenge, but even so, Guderian's first operational objective, the area around SmolensK, was about 425 miles from his line of departure, maKing it a close call to say the least.

A second reason which may aid in explaining Guderian's attitude toward logistical risK lies in his uncanny ability to read terrain. In all three of his campaigns, Guderian attempted to seize Key roads, communication centers, railroads, and airfields to ensure his units could be resupplied by rail, road, or air. Reflecting his thinKing on this subject during the critical battles for Moscow in December 1941 he remarKed, "Our most urgent tasK now was the capture of Tula. Until we were in possession of this communications centre[sic] and its airfield we had no hope of continuing to advance...."(102) Even if this single example of Guderian's concern for logistical risK is pathetically inadequate, it does show he made some

plans to ameliorate what he recognized as a potential threat.

A final explanation of his handling of logistical risk lies in Guderian's conception of operational art itself. He seemed to believe that logistical risk would be minimized by the very speedy nature of his operations. That is, quick tank thrusts into operational depths before logistics became a significant factor would minimize the risk. Of course, such a view presupposes enemy collapse or capitulation before logistical factors have their inevitable impact. Further, Guderian had the luxury in his operations of knowing there were infantry armies following his mobile units, mopping up any residual enemy resistance which might threaten his lines of communication. In both the Polish and Flanders Campaigns, which were relatively short campaigns in space and time compared to the Russian Campaign, Guderian's assumptions held true and the payoff was tremendous. The great expanse of Russia, however, swallowed Guderian, his panzer group, and the infantry armies following them. In spite of the outcome of the Russian Campaign, Guderian's approach to logistical risk is defensible if one accepts his argument that had Hitler not diverted his panzer army from its original objective of Moscow, it would have had the time and combat power sufficient to cause a decisive Russian collapse. This is not the place to pursue Guderian's argument, but it does help illuminate his thinking on the subject of logistical risk--be bold!

In assessing Guderian's operational methods, three tenets

of risk come to the fore, though others probably suggest themselves as well.

> First, to achieve tactical penetration and operational depth, accept risk while concentrated and to exposed flanks while moving; use air power, night movement, reserves and terrain to reduce this risk.
>
> Second, rapid achievement of operational depth requires one to accept the risk of wide separation between main attack and follow and support forces; reduce this risk through speed of operations, momentum, and employment of organic combined arms organizations.
>
> Finally, reduce logistical risk through rapid seizure of transportation centers to ensure resupply by rail, road, or air.

These three tenets return to the question posed at the beginning of this section on risk: Was Guderian foolhardy or bold in his acceptance of risk? Here, Carl von Clausewitz's words on boldness in On War may shed some light on the question:

> Even foolhardiness--that is, boldness without any object--is not to be despised....Given the same amount of intelligence, timidity will do a thousand times more damage in war than audacity....Boldness governed by superior intellect is the mark of a hero....Boldness can lend wings to intellect and insight; the stronger the wings then, the greater the heights, the wider the view, and the better the results; though a greater prize, of course, involves greater risks.(103)

Reflecting on Clausewitz's remarks, the reader may judge for

himself the answer to the question posed. But since he is not here to defend himself, we must leave Guderian with the last word: "[On War] had a large share in shaping the spirit of generations of general staff officers...."<104>

## CONCLUSION

Undoubtedly there is much more that could be said about General Heinz Guderian's operational art than has been said here already, though by now the reader may be praying that nothing of the kind is in store. Indeed, it is not; but it would be useful to summarize the broad conclusions toward which each of the five sections above--combined arms operations,offensive action, momentum, command and control, and risk--points. Without enumerating again the eighteen tenets which define Guderian's concept of operational art, it is accurate to say his concept of operational art was offensive operations whose object was to envelop and destroy enemy forces. These offensive operations were characterized by great momentum born of speed of operations and concentrations of armor, operational depth, and combined arms operations employing tanks at the schwerpunkt, which were controlled from the vicinity of the forward committed units, and which entailed an acceptance of risk to flanks and lines of communication to achieve operational decisiveness.

It is probably not at all amazing that a review of the tenets arrived at bear a remarkable similarity to the Principles of War. In fact, we should be surprised if they were

not similar; otherwise, an inconsistency deserving of explanation would confront us. In some measure, all the Principles of War are reflected in Guderian's operations. He employed mass, surprise, unity of command, economy of force, offensive, maneuver, simplicity, and objective in one way or another. What this analysis shows is HOW Guderian put those principles into action at the operational level of war. For even if one agrees that the fundamental principles of war do not change, it remains the task of the military commander to apply correctly those principles to a current operational problem and achieve the desired outcome. The commander who does this consistently well is more than just lucky. Considering all the obstacles to success in war, he is brilliant. Whatever else one might wish to say about Heinz Guderian and his operational methods, it remains true that he was successful in war, and brilliantly so.

## ENDNOTES

1 Actually there is more to the story than this. Guderian's relationship with von Kluge was a factor which contributed to his relief. See Heinz Guderian, Panzer Leader (New York: Dutton and Company, 1952), pp. 264-271.

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6 Kenneth Macksey, Guderian, Creator of the Blitzkrieg (New York: Stein and Day, 1975), p. 244. Hereafter cited as Macksey.

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8 Macksey, p. 62.

9 Panzer Leader, p. 24.

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11 Heinz Guderian, "Armored Forces," in The Infantry Journal Reader, ed. J.I. Greene (Garden City, New York: Doubleday, Doran and Company, 1943), p. 473. Hereafter cited as "Armored Forces," this work is an abridged English translation of Guderian's "Achtung! Panzer!" which was published in Germany in the Winter of 1936-37.

12 "Armored Forces," p. 461.

13 "Armored Forces," p. 462.

14 Handbook on German Military Forces. War Department Technical Manual, TM-E 30-451 (Washington, D.C.: U. S. Government Printing Office, 1945), p. II-84.

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16 "Armored Forces," p. 463.

17 Panzer Leader, pp. 519-520.

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19 According to Handbook on German Military Forces, 1945 panzer divisions had only 103 tanks by Table of Organization. Guderian thought that was a woefully inadequate number. Before the Polish and Flanders Campaigns, he argued successfully for larger formations of brigade size, which he employed in the Polish and Flanders Campaigns. After 1940 the number of tanks in panzer regiments and brigades was reduced from the 400 cited earlier to as few as 150 by war's end.

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26 Panzer Leader, p. 137.

27 Panzer Leader, pp. 145-46; pp. 148-49.

28 Panzer Leader, pp. 147-49.

29 Panzer Leader, pp. 482-83.

30 Panzer Leader, p. 482.

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32 The Rise and Fall of the German Air Force (1933 to 1945), Air Ministry Pamphlet No. 248, (British Air Ministry (A.C.A.S.I.), 1948, pp. 47-48.

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53 Addington, pp. 195-198.

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56 Panzer Leader, p. 331.

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86 Panzer Leader, p. 31.

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97 Panzer Leader, pp. 167-68.

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99 For further discussion on this point, see Field-Marshal Lord Carver's remarks in The Apostles of Mobility, p. 59.

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# CHAPTER 3: GENERAL GEORGE S. PATTON,JR.

## PART I: The Man

More than any other American soldier, General George S. Patton, Jr. epitomizes the American combat commander. His fame requires no embellishment here, nor is there obvious reason to believe Patton was not eminently successful in the conduct of operational art during World War II. His conduct of operations during TORCH, with II Corps after Kasserine, as commander of Seventh U.S. Army during HUSKY, and as commander of Third U.S. Army on the continent of Europe all indicate he was an able practioner of the operational art. In this chapter, analyses of these campaigns and Patton's own writings serve as bases of evidence from which are drawn conclusions about the major tenets which apparently guided Patton in his conduct of operational art.

In a fashion similar to that employed in the preceding chapter on Heinz Guderian, this chapter approaches an understanding of Patton's operations by focusing attention on four broad categories of analysis: combined arms operations, offensive action, command and control, and risk. The difference in categories between the chapters reflects the difference in emphasis that Patton and Guderian placed on what has been characterized as Momentum. Additionally, it is arguable that a separate category on Logistics or Sustainment is in order, but

the fact is, this chapter is an analysis of the manner in which General Patton conducted operational art, and consequently, should be an accurate reflection of his tenets even if those tenets imply that he placed little emphasis on logistical matters.

Known as "Old Blood and Guts" by his soldiers, Patton had a long and illustrious career in the U.S. Army, only the highlights of which are recorded here to serve as a suitable point of departure for a discussion of Patton's operational art in World War II. Born in southern California on 11 November 1885 to wealthy parents, Patton grew up without wanting for much. His ability to quote long passages from classics such as Homer's Iliad attests to his love of ideas, but his inability to read or write at the age of twelve suggests he was less interested in more practical affairs. It also helps explain why it took Patton five years to graduate from West Point, a development all the more surprising considering that Patton attended Virginia Military Institute for a year before going to West Point!

In spite of numerous childhood illnesses, Patton grew up to be physically strong and aggressive. After graduating from West Point in 1909, he was posted to Fort Sheridan, Wyoming, taking with him his new bride Beatrice Ayer Patton. As a cavalry officer, he had to be comfortable on horseback, but Patton was an accomplished equestrian. In 1912, he was the first American Army officer to compete in the Olympic Games on

the U.S. Modern Pentathlon Team and finished a respectable fourth among military athletes of the world.

Patton saw his first combat action in Mexico as General J. J. Pershing's aide during Pershing's punitive expedition in pursuit of Pancho Villa. In close combat he killed some of Villa's men, including Villa's bodyguard, thereby securing for life the affection and respect of General Pershing. Later, in World War I Patton served as Pershing's aide and Headquarters Commandant and then joined the fledgling American Tank Corps. He supervised the training of the new American Tank Corps and led the 304th Tank Brigade into battle at Saint-Mihiel and the Meuse-Argonne offensive and was wounded severely by machinegun fire in the latter action. He emerged from World War I as a colonel in command of a tank brigade, decorated with the Distinguished Service Cross and the Distinguished Service Medal.

During the inter-war years Patton attended a number of schools as either instructor or student at the Cavalry School, Command and General Staff College, and the Army War College. When World War II began Patton was serving at Fort Myer, Virginia and was sent immediately to organize and command a brigade in one of two newly created armored divisions. Soon he took command of the 2nd Armored Division at Fort Benning,Georgia, trained it, and led it through the Louisiana Maneuvers of 1941. All of Patton's experience in World War I, his schooling in the inter-war years, and his armored command

just prior to America's entry into World War II prepared him well for his role as a corps and army commander.

At the opening of American participation in the war against Germany, Patton served in the North African Theater as Western Task Force and I Armored Corps Commander for Operation TORCH, and later, for a short period, as the Commander of II (US) Corps in the aftermath of that corps' defeat at Kasserine Pass. Then Eisenhower had Patton help plan Operation HUSKY, the invasion of Sicily, and appointed Patton to command Seventh (US) Army during the Sicily Campaign. In both those campaigns Patton clearly demonstrated he could effectively command large military units and achieve decisive results. Consequently, in spite of reservations because of the infamous "slapping incidents" on Sicily, Eisenhower selected Patton to command Third (US) Army once it became operational on the continent of Europe. Patton's reputation as a great field commander and practioner of operational art rests largely on the repeated successes of Third Army in its remarkable advance from the Cotentin Peninsula across Europe to Pilsen, Czechoslovakia. Not surprisingly, then, this chapter draws heavily on Patton's operations while he was in command of Third Army in Europe from 1 August 1944 to 9 May 1945.

Much has been written and said about Patton's flair for showiness and grandstanding, focusing especially on his flashy uniforms, obscene language, and, at times, outrageous behavior. Hidden in such discussions is the thought that under all

Patton's flamboyance there was really little tactical substance, that perhaps he was not the capable practioner of operational art the surface evidence suggests. However, in spite of the public preoccupation with Patton's outward form, the evidence indicates that he understood soldiers well, knew how to get the most out of his subordinates, and how to fight large military formations. Recognizing him for the warrior he was, Pershing said of him, "This Patton boy! He's a real fighter!"(1) As this chapter will show, Pershing was quite right.

## PART II: Operational Tenets

### COMBINED ARMS OPERATIONS

There is a certain irony associated with George Patton's rise to fame as the pre-eminent American practioner of tank and mobile warfare in World War II. The irony is that it was Patton who, during his tour of duty in the Office of the Chief of Cavalry between 1928 and 1931, argued most obstinately and effectively against supplanting the horse cavalry by the tank or the mechanized arm. In a paper titled "The Value of Cavalry" Patton exalted the cavalry by pointing out that cavalry could operate anywhere, but "[m]echanical forces do not possess this universal availability."(2) He went on to say:

> The limitation inherent in...vehicles, such as their inability to operate at night, to live off the country, or to penetrate wood and mountains indubitably stamp them as auxiliaries and not as supplanters of Cavalry.(3)

Surely these are strange words for a man who went on just fifteen years later to command some of the American Army's largest armored and motorized formations, all without horse cavalry. Author Martin Blumenson attributes Patton's pre-World War II cavalry views to his love of horses and the horse

cavalry tradition and his loyalty to the Chief of Cavalry for whom he wrote. Had not less passionate thinkers prevailed, Patton might not have had much in the way of combined arms divisions to command in World War II. As it was, between 1920 and 1935 only thirty-five tanks were even built in the United States.<4> It was not until 1938 that an American designed tank was accepted and standardized. Moreover, the applicable doctrine had long been that tanks assist the infantrymen in the attack. The 1939 doctrine simply stated that "tanks are employed to assist the advance of infantry foot troops, either preceding or accompanying the infantry assault echelon."<5>

The point of these remarks is to set the stage for a discussion of Patton's conception of combined arms operations, for it is clear by what he later wrote and by the way he fought that he thought combined arms organizations and their correct employment were important to the success of operational art, notwithstanding his comments about cavalry and the value of infantry-armor teams. It is fair to say that Patton's employment of infantry and armored divisions was in part the result of his own studies and ruminations on the subject of combined arms and the result of the Army's tactical organizations he inherited as a field commander. Prior to a discussion of his combined arms employment tenets, it is appropriate to describe briefly the organization of the American armored and infantry divisions circa 1944.

The 1944 American infantry division was a triangular

U.S. INFANTRY DIVISION
(1944)

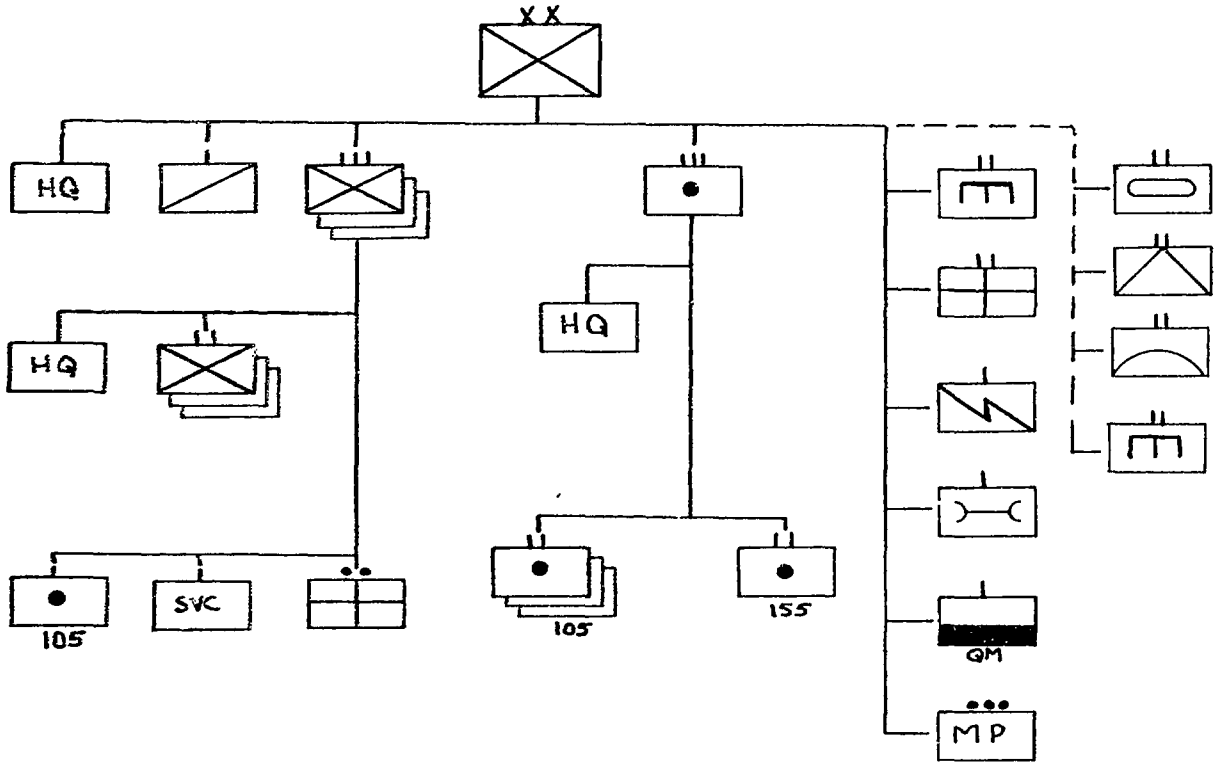



Chart 3

division, so called because it was composed of three infantry regiments, each of which contained three battalions, and so on (See Chart 3). The division artillery was composed of four battalions of field artillery, organized in three battalions of 105-mm (36 tubes) and one battalion of 155-mm (12 tubes) howitzers. In addition, each infantry regiment had its own cannon company of six 105-mm howitzers that were linked with the division artillery Fire Direction Center (FDC) radio net. In addition to the infantry and artillery, the primary combat arms elements of the division, combat support units included a reconnaissance company, engineer battalion, antiaircraft artillery/antitank weapons battalion, chemical mortar battalion, and signal company. Employing a corps "pooling" concept, a corps commander could augment the combat capability of a division by attaching extra artillery, engineers, or quartermaster trucks. Six quartermaster truck companies, for example, could make an infantry division completely mobile. Generally, infantry divisions in the European Theater of Operations (ETO) controlled on a semi-permanent basis one tank battalion and one tank destroyer battalion, which the corps commander could allocate, employing the pooling concept, as he saw fit. When suitably augmented with combat support units, a division commander could form three formidable regimental task forces or combat teams each with their own field artillery cannon company. In the words of Robert Kent Greenfield,

> The infantry regiment was virtually a small division. It served itself; it had a reconnaissance platoon; it

U.S. ARMORED DIVISION
(1944)

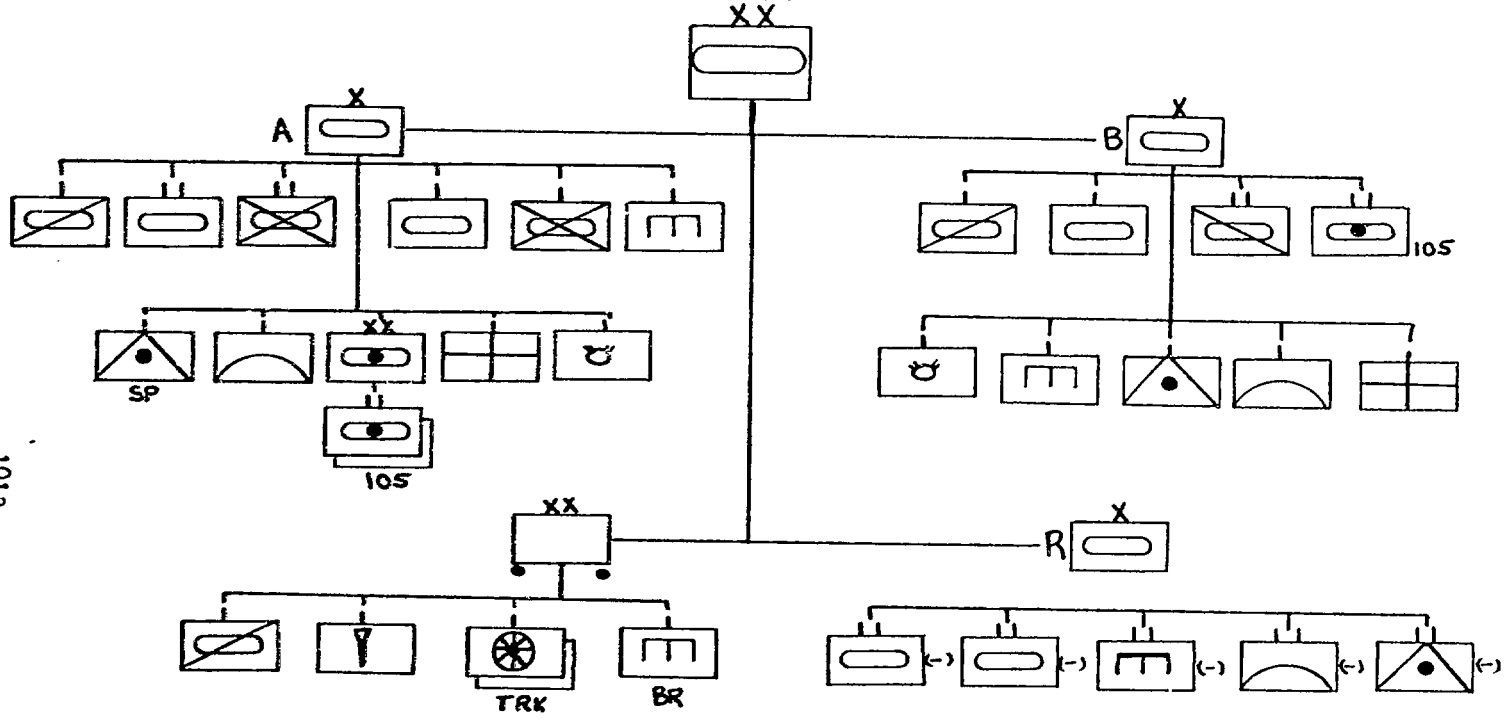



Chart 4

had proportionately far more antiaircraft and antitank weapons than the division; and after the inclusion of howitzers it had its own artillery.(6)

All things considered, the infantry division with which Patton fought was a flexible organization over 14,000 strong that could be task organized into regimental combat teams for specific missions.

Complementing this basic infantry building block was a hastily conceived armored division structure that itself packed quite a punch. The 1944 armored division was an 11,000-man organization with 263 medium and light tanks as its primary weapon (See Chart 4). Armored divisions were organized into the main combat elements of two armored regiments of three tank battalions each; an armored infantry regiment composed of three battalions; and a division artillery composed of three 105-mm (SP) howitzer battalions.(7) Combat support elements included a reconnaissance battalion, engineer battalion, and signal company. Division trains included a maintenance battalion, supply battalion, medical battalion, and military police platoon. By January 1945, armored divisions were equipped with some 2,276 vehicles of all types, 466 of which were half-tracks used to move armored infantry and reconnaissance elements into battle.(8) Like the infantry division, the armored division could be--and frequently was--augmented by an independent tank battalion or tank destroyer battalion. For command and control purposes, by Table of Organization, the armored division had three task force headquarters called Combat Commands A, B, and

Reserve. These three headquarters made it easy for the division commander to tailor his combat commands for specific missions, terrain, and enemy threats.

Doctrinally, the armored division was viewed primarily as an exploitation organization to be committed after the infantry division had created a tactical penetration. The concept of motorizing or mechanizing all the infantry in standard infantry divisions was entertained but rejected by the War Department in 1943 in favor of the organization of some fifteen independent armored infantry battalions, which could be plugged into an armored division to give it additional infantry strength. The War Department also pressed for the fielding of independent tank battalions for close support within the infantry divisions.(9) Armored divisions were to exploit the infantry breakthrough, but there remained a fundamental disparity in the organic mobility between infantry and armored divisions and a shortage of infantry in the armored divisions, problems for which Patton had his own solution.

## Tactical Employment

In a 1921 paper titled "Tactical Tendencies" Patton revealed his view of the supremacy of tactics over strategy:

> [T]actics is the daily lot of all. Splendid strategy may be made abortive by poor tactics while good tactics may retrieve the most blundering strategy.(10)

Unsurprisingly, by the time he took command of Third Army on the continent of Europe, Patton had definite ideas about how armored and infantry divisions should be employed tactically. Moreover, he did not hesitate to make his views known to subordinate commanders either. Key to his operational views were his views on the tactical relationships of infantry and armor which follow.

In War As I Knew It Patton makes clear what the relationship between the tank and infantryman is in both armored and infantry divisions. He says:

> In the infantry division the purpose of the tank is to get the infantry forward. In the armored division the infantry has the task of breaking the tanks loose.(11)

Demonstrating that he was dead serious about how he expected his division and corps commanders in Third Army to employ infantry and armor, Patton published a series of letters of instruction to his subordinate commanders in the Spring of 1944. In "Letter of Instruction No.3" he makes clear the tactical use of infantry-armor teams. When operating against known antitank guns or extensive antitank minefields, or where necessary to force a rivercrossing, the assault should be led by the infantry. Tanks, on the other hand, lead when small minefields or anti-personnel mines are encountered, or against what Patton termed "normal infantry and armor resistance."(12) Here Patton is referring to armored infantry, for he goes on to say that normally the armored infantry and artillery are used to make a hole to allow tank battalions to move forward; then

the armored infantry and artillery follow close behind. Moreover, Patton did not envision armored infantry remaining mounted when they went into action. His tactical concept, which he labeled "marching fire," called for the infantry to dismount when required and assault forward firing from the hip or by holding the rifle butt just under the armpit. This infantry assault was to be supported by every weapon--machinegun, mortar, artillery, AT gun. Patton's opinion was that "[a]ny gun not firing was not doing its job."(13) In his own words, Patton pointed out that

> armored infantry is nothing but a form of cavalry--that is, it uses its vehicles to deploy mounted, saving time, avoiding fatigue. It does not use its vehicles--except rarely--for a mounted charge.(14)

Tanks, thought Patton, do any charging that needs to be done. On this subject in 1927 he wrote:

> Tanks are in reality a modern version of heavy cavalry....When satisfactory machines are available, they should be formed into separate corps and used, when terrain permits, for the delivery of the final shock in some great battle; when so used they must be employed ruthlessly and in masses.(15)

Interestingly, although this 1927 remark by Patton may have been thought of by some to be an indication of how he would use tanks in World War II, Patton did not at all employ tanks in the manner this passage suggests, a point to be addressed later on. However, his phrase "when terrain permits" is worth highlighting because it raises two important points about

Patton's tactical methods that had an impact on his operational methods. First, tanks cannot go everywhere. Patton recognized this, but appeared later to adhere anyway to the maxim "The best tank country is enemy territory devoid of AT weapons." It illustrates, as well, his tactical appreciation for terrain and suggests correctly that he had the same appreciation for terrain operationally. Second, his remark about terrain helps explain why Patton thought armored divisional reconnaissance units were important. Since tanks cannot go everywhere, Patton thought it vital to get armored reconnaissance units far out in front of tank units to observe and report on the terrain, routes, and built up areas as well as the enemy. Such reconnaissance elements were vital but, because of the fast pace of armored operations, were of no use if combat information did not get back to higher headquarters rapidly.

Patton's commitment to a combined arms concept at the tactical level is further reflected in his remarks on the use of tanks and the objective of armor. In "Letter of Instruction No.3," for example, he exhorts his commanders to keep tanks out of villages and towns; combat in built up areas is a task for dismounted infantry. If armor must be employed for the capture of a town, it should attack the town from the rear, taking care while enveloping or bypassing to stay out of range of flanking anti-tank fire coming from the town.(16) But Patton thought that neither towns nor enemy armor were the true objectives of armored forces in any event. In his opinion, "the true

objective of armor is enemy infantry and artillery, and above all his supply installations and command centers."(17) And clearly the way to get to such objectives is to attack the enemy's flanks or rear. Whenever a turning movement to gain a flank or rear attack met opposition, Patton thought a small part of the enveloping force should be detached and continue with a wider envelopment against the enemy. He believed that just one company of tanks in the enemy's rear--supported by armored infantry and artillery--can win an engagement. Patton's qualifier "supported by armored infantry and artillery" indicates he believed that only when the various arms are integrated can tactical success be achieved.

Recognizing that the infantry division, more so than the armored division, was vulnerable to an enemy tank attack, Patton prescribed the following measures in the Third Army to fill out his tank-infantry team concept in infantry divisions. First, he directed that each infantry division in the Third Army would have one separate tank battalion permanently attached. Reflecting both his concern and his concept, Patton stated:

> In this Army we will try to keep at least one separate tank battalion permanently attached to each infantry division. This will permit the division commander to attach one medium tank company to each infantry regiment and still retain Battalion Headquarters, a light company and possibly a medium tank company as a mobile reserve to exploit a success or to intervene against a counterattack.(18)

Tanks, then, were to exploit when possible and keep the

infantry out of trouble when necessary. Also, the image that emerges from this passage is one of tank battalions spread far and wide in little "penny packets," a problem that surfaces at the operational level as well. Second, Patton attached out from Third Army assets tank destroyer battalions when they were needed and directed that they be placed far enough forward so that they could prevent tanks from overrunning infantry. Further, he directed that tank destroyer units not be held in reserve because they were not likely to get to the front in time to affect the outcome of a battle.<19>

Artillery also was clearly part of Patton's combined arms concept. He thought attacks must be fully coordinated to be successful--tanks, infantry, and guns must work as a unit. Patton thought that

> whenever possible, it is desirable that the guns operate under divisional control, and with their forward observers in tanks, immediately take under fire enemy anti-tank guns....Success depends upon the coordinated use of the guns and the tanks, with the guns paying particular attention to hostile artillery, and above all to anti-tank guns and observation posts.<20>

Not only does this passage reflect Patton's commitment to combined arms but it illustrates his view that massing of artillery fires can best be achieved by leaving guns under divisional control. For static situations--defense and tactical penetration--this approach made good sense, but in more fluid situations requiring combat commands or regimental combat teams to take widely separated routes to separate objectives

centralization did not work well. In fact, it was common practice to attach one field artillery battalion to each combat command or regiment for mobile operations.<21> Nevertheless, Patton's belief in massing artillery fires was supported in practice whenever possible. During Third Army's counterattack in the Battle of the Bulge, 108 battalions of field artillery supported attacking units. 35 battalions alone, firing 94,230 rounds in five days, supported III Corps' attack to relieve Bastogne.<22> Colonel Robert Allen on Patton's G-2 staff said that the artillery made the difference in the Bulge by smashing German assaults and clearing the way for a steady, albeit slow, advance. The terrain in the Ardennes canalized German movements and reduced artillery targets to a few key highway bottlenecks, enabling the artillery to fire a program of long-range harassing and interdicting fires on those key points.<23>

In the Lorraine Campaign, a relatively static period of operations from September to November 1944, the artillery's ability to mass its fires at critical points and times was tactically decisive time after time. For XII Corps' attack on 8 November, for instance, the supporting artillery fired a one and 1/2 hour preparation against pinpoint targets employing 42 battalions, including 5 from XX Corps. Those targets included 221 artillery positions, 40 command posts, 14 assembly areas, and 12 defiles. Not one round of enemy artillery fire was received because of the massed counter-battery fire XII Corps delivered.<24> Another example of the tactical effect of massed

artillery is illustrated by 90th Infantry Division's assault across the Moselle River during the Lorraine Campaign. On 8 November 1944, elements of two regiments of the 90th Infantry Division in Walker's XX Corps conducted an assault crossing of the rain-swollen Moselle River and initially achieved surprise because of an elaborate deception plan and the fact that the Germans were not expecting offensive operations in such bad weather. Severe German counterattacks on 9 and 10 November threatened the 90th Division's toehold across the Moselle, the effects of which were amplified because the Moselle began to rise, cutting off committed infantry units from other divisional elements. Seventeen artillery battalions firing around the clock were used to break up German counterattacks until divisional armor units could cross the Moselle.(25) Eventually, the 90th Division succeeded in establishing a bridgehead, but its tactical success rested largely on the massed employment of field artillery units. In both of these examples--the Bulge and Lorraine--poor weather that impeded the use of supporting air power forced Patton and his subordinate commanders to rely heavily on the artillery as a key member of the combined arms team.

But whenever possible Patton made extensive use of supporting air assets that were available to him, thereby rounding out his combined arms conception with an almost fully integrated air-ground team. Patton recognized the value of air

power and worked hard to establish a good working relationship with General Weyland, Commander of XIX Tactical Air Command (TAC), which was in support of Third Army throughout operations in Europe. Weyland's liaison officer to Patton's headquarters sat in on all operations briefings, and Patton did not hesitate to call General Weyland personally if he needed air support. XIX TAC operations included air reconnaissance, deep interdiction, and close air support, all of which Patton made great use. He was particularly pleased whenever XIX TAC planes worked closely with ground units. On 14 August 1944, two weeks after the breakout from the Normandy beachhead, Patton observed the effects of such air-ground cooperation and recorded his thoughts:

> Just east of LeMans was one of the best examples of armor and air co-operation I have ever seen. For about two miles the road was full of enemy motor transport and armor, many of which bore the unmistakable calling card of a P-47 fighter-bomber--namely, a group of fifty-caliber holes....(26)

In that same passage Patton goes on to explain what two ingredients are necessary for successful air-ground teamwork: intimate confidence and friendship between air and ground; and ruthless driving on the part of the ground commander. His operations indicate that Patton was adept at meeting both requirements.

Evidence that Patton employed XIX TAC assets deeply to interdict movement of enemy reserves and to protect his army's flanks is illustrated by Colonel Robert Allen's recollections of operations while serving as Patton's deputy G-2. In Lucky

Forward, Allen points out that during Third Army's sweep to the Loire River after the breakout from the Normandy lodgement in early August 1944, the Germans were having great difficulty moving reserves because of allied airpower's isolation of the battlefield. On 8 August 1944, for example, XIX TAC flew 717 sorties in support of Third Army operations, dropping three bridges, destroying 29 locomotives, 137 freight cars, 505 motor vehicles, and 29 tanks.<27> On 9 August XIX TAC flew an additional 780 sorties with similar results. In his own memoirs Patton makes it clear that he relied heavily on XIX TAC both to watch and protect his flanks and help him advance tactically.<28> The number of vehicles destroyed or bridges dropped does not of itself illustrate the operational significance of XIX TAC's air support. What is important to know is what effect such air attacks had on German ability to move reserves or react to Third Army's movements, or, equally important, how such air attacks enabled Patton to maneuver his army to a position of advantage. In the latter respect, it is plausible to suppose that XIX TAC's reconnaissance and deep interdiction operations 80 miles out to the Loire River were what allowed Patton to leave his southern flank strung out and exposed along the Loire for over 300 miles, covered only by an infantry division and two cavalry groups. XIX TAC provided him the eyes to see deeply and, consequently, the time needed to react to potential threats to Third Army's flanks.

In the Bulge Campaign XIX TAC flew from dawn until dusk every day the weather permitted. At night a P-61 Night Fighter

Squadron attacked German supply routes. In five days XIX TAC claimed 3200 vehicles, 293 tanks and armored vehicles, 1800 freight cars, and 11 bridges.(29) Although the precise effect XIX TAC's operations had during the Bulge is incalculable, continuous daylight air operations forced the Germans to move at night, making their tactical and supply operations more difficult and slowing the momentum of the German attack. These few examples illustrate a method of operation that Patton adhered to throughout his series of campaigns in Europe. Even during the Lorraine Campaign, when the weather was particularly poor for air operations, XIX TAC managed to get aircraft into the air in support of Patton's operations, attesting to the excellent relationship his command enjoyed with his supporting air component.

Patton's published letters of instruction and the time he spent with front line units and commanders indicate he was both serious and sincere in imposing his tactical principles on his corps and division commanders. Within his guidelines there was certainly enough room for tactical innovation and initiative, which Patton was always quick to recognize and appreciate. But tactical organizations and principles were only building blocks for Patton's conception of operational art. What needs elucidation now is the way Patton organized and employed corps in combat.

According to U.S. Army doctrine in 1939, divisions were to be lean and simple organizations, offensively oriented, to which attachments of combat support elements could be made as

necessary. Corps were purely tactical headquarters that were structured to handle any mix of infantry and armored divisions. When organized for combat, each corps had a headquarters with support elements, a corps artillery headquarters, two or three infantry and one or two armored divisions, one or two cavalry groups of two squadrons each, and a corps artillery group composed of four or five artillery battalions. The corps Fire Direction Center either controlled or allocated field artillery battalions and was tied into divisional artillery FDCs, making it possible to coordinate every field artillery tube in the corps, a technique Patton rather liked.<30>

Field armies had the task of allocating divisions to corps and assigning supporting combat support and combat service support units where needed. Patton's Third Army also controlled six engineer groups, one anti-aircraft brigade, and one tank destroyer brigade, in addition to its many logistical support units.<31> Doctrinally, logistics flowed from the communications zone (COMMZ) through the field armies to divisions, bypassing corps. In practice, corps commanders and their staffs did get involved in some logistical matters. A division slice in the European Theater was 15,000 organic divisional troops, 15,000 corps and army troops, and 10,000 COMMZ troops, for a total of 40,000.<32>

During tactical operations in the European Theater of Operations Patton's Third Army controlled as few as two corps with seven divisions and as many as four corps with eighteen divisions--540,000 men. Generalizations that describe how and,

more important, why Patton organized Third Army for combat are as hazardous to make as they are difficult to support, for he says very little about what specific factors among mission, enemy, terrain, and forces available he considered in task organizing a particular corps. One safe generalization that can be made is that he tried to organize corps so that each controlled at least one armored division. In War As I Knew It Patton recalls that on 7 April 1945 General Bradley asked Patton to lend First Army the 13th Armored Division for an operation. At the time, the 13th Armored Division was assigned to XX Corps, and Patton deemed it essential to replace 13th Armored Division in XX Corps with another armored division. He remarks,

> In order to replace the 13th Armored Division, I transferred the 4th Armored Division from the VIII Corps to the XX, leaving the VIII Corps temporarily without an armored division, but this was not too disadvantageous, as the country in its zone of action was not suitable for armor.(33)

Patton's comment implies he wanted to ensure each of his corps had an armored division, even if the terrain in that corps' zone of action was not suitable for tanks. This approach to task organizing corps is further supported by the simple fact that usually Patton organized corps with two infantry divisions and one armored division. A couple of examples illustrate the point.

For Operation COBRA in which Patton's Third Army made its debut in Europe, Patton controlled four corps, nine divisions, and three cavalry groups, organized as shown below.(34)

VIII Corps
  8th Inf Div
  83rd Inf Div
  6th Armd Div
  4th Armd Div

XII Corps (Not operational until 4 Aug)
  80th Inf Div

XV Corps
  79th Inf Div
  90th Inf Div
  5th Armd Div

XX Corps (Not operational until 4 Aug)
  2nd (Fr) Armd Div

As shown, the army task organization was that which was in effect 1 August 1944. At the time, neither XII nor XX Corps was operational but became operational on or about 4 August 1944. So, on 1 August Patton's army was organized in two corps, one with two armored and two infantry divisions, the other with one armored and two infantry divisions. By 14 August XII Corps and XX Corps were fully operational with their assigned divisions, reflecting the following task organization.(35)

VIII Corps (Still in Brittany)
  8th Inf Div
  83rd Inf Div
  6th Armd Div
  80th Inf Div elements
  TF Alpha (1st Tk Dest Bde)

XII Corps
  35th Inf Div
  4th Armd Div

XV Corps
  79th Inf Div
  90th Inf Div
  5th Armd Div
  2nd (Fr) Armd Div

XX Corps
  5th Inf Div
  80th Inf Div(-)
  7th Armd Div

This task organization also reflects Patton's proclivity to spread his armored divisions throughout his army rather than retain them in one separate corps to be "used...for the delivery of the final shock in some great battle...." The point is that Patton never employed his armored divisions in one armored corps as he had said in 1927 they should be used. The way he actually task organized his army may leave Patton open to the charge that he doled out his armored assets in penny packets, thereby losing his ability to deliver crushing armored thrusts against the enemy. Even so, Patton's thinking on this subject may be open to a favorable interpretation. His organization of XV Corps for that corps' mission to close the Falaise Gap may have been correct. XV Corps had two armored and two infantry divisions with which to close the gap against German panzer and supply trains units attempting to escape to the east. His instructions to Major-General Haislip, XV Corps commander, were to lead with his armored divisions and follow with his infantry divisions. Recognizing the organic shortage of infantry in the armored divisions but also their capability to deliver shock action, Patton directed Haislip to

> utilize all available transportation, including tanks, to maintain one infantry combat team in the immediate rear of each armored division; the remaining combat teams of the two infantry divisions to proceed by marching.<36>

Here is evidence that Patton was thoroughly flexible in his approach to organizing and fighting his units and that he had a fairly clear vision of what was required tactically. But the key point is that given his mature conception of how infantry and armor fight together, his assignment of an armored division to each corps--for exploitation at the corps level--makes sense. Unfortunately, what it ultimately led to was further "penny packeting" by corps commanders. For instead of keeping the combat commands of the armored divisions together, corps commanders frequently parceled out combat commands across the corps front. One is reminded here of Guderian's maxim "Klotzen, nicht Kleckern" because Patton's manner of organizing and fighting more closely approximates the maxim "Kleckern, nicht Klotzen." Consequently, Patton can be accused of failing to economize and mass his forces appropriately. Spread out on a front some 450 miles as his army was in its sweep across France after the breakout at Avranches, Patton attempted to be strong in armor everywhere with the result that he was strong nowhere. Fortunately, Patton correctly recognized that the Germans were off balance after his breakout and their defeat at Mortain, and mass was not the critical aspect for success in pursuit operations; speed was!

A similar charge, harder to refute, can be levied against

Patton concerning his conduct of operations in the Lorraine Campaign. In that campaign XII Corps' fight to secure Nancy was Third Army's big battle in September 1944. In November 1944 XX Corps' seizure of Metz was Third Army's decisive battle, yet Patton did not reinforce either of these corps while they were engaged in the Army's decisive operations.<37> In Lorraine Third Army fought dispersed because of Patton's tendency to assign missions beyond the capabilites of his units. The real failing at the operational level is that separate corps and division battles were not linked together in a coherent and unified campaign plan. The only plan appeared to be to attack east and get to the Rhine River before any other Allied units. What worked during the halcyon days of rapid movement across France against a retreating enemy did not work well at all against a determined, dug-in enemy in Lorraine.

For Patton, what applied tactically also applied operationally. With corps generally composed of two infantry and one armored divisions, it is easy to see what Patton had in mind operationally. In "Letter of Instruction No.2," he directed his corps and division commanders to hold the enemy frontally and maneuver into his rear, pointing out that flank or rear fire is three times more effective than frontal fire. He went on to say,

> Hit hard soon, that is with two battalions up in a regiment, or two divisions up in a corps, or two corps up in an army--the idea being to develop your maximum force at once before the enemy can develop his.<38>

Patton's imaginative "two up-and-one back" advice fits nicely

with the two infantry and one armored divisions task organization for his corps. The infantry divisions, he thought, were particularly well suited to attack frontally, penetrating or fixing the enemy, so that the more mobile armored division could pass through or around and strike in some depth against the enemy's artillery, command posts, and supply services. Moreover, this operational view is consistent with the doctrinal view that saw the infantry division as the organization capable of tactical penetration but not well suited for exploitation or pursuit operations. Patton's remarks about Seventh Army's operations on Sicily illustrates his point.

> I feel that the future students of the Command and General Staff School will study the campaign of Palermo as a classic example of the use of tanks. I held them back far enough so that the enemy could not tell where they were to be used; then when the infantry had found the hole, the tanks went through in large numbers and fast.(39)

In this passage, Patton is referring to 2nd Armored Division's exploitation after infantry penetration of the German-Italian lines in the southwest corner of Sicily on 22 July 1943. Under the command of Major-General Hugh Gaffey, 2nd Armored moved rapidly up the west coast of Sicily, conducting converging tank attacks against what slight resistance enemy units were able to offer. In this action 2nd Armored passed between elements of the 3rd Infantry and 82nd Airborne Divisions, a classic case of armored exploitation as Patton envisioned it.(40) This same technique was followed time and time again in Third Army's

operations on the continent. In one of XV Corps' attack shortly after the breakout through Avranches in early August 1944, 5th Armored Division from that corps was ordered to pass through 90th Infantry Division and attack to secure the city of Fougères and its surrounding roadnet, which it did. Colonel Robert Allen describes Third Army's Eifel Campaign, which began immediately after the Bulge Campaign came to a close in late January 1945, as classic Patton breakthrough operations. He says:

> [Patton employed] armored-motorized infantry teams, with close air support knifing through the enemy; other infantry following close behind the spearheads, mopping up by-passed enemy forces and pockets and strengthening the shoulders of the breakthrough.(41)

Allen says such operations were typical of Patton's way of fighting, and by all accounts he is correct.

Most of the techniques described thus far have focused on offensive operations, so a word or two is in order on Patton's conception of the employment of corps defensively. The short and long of it is that Patton did not view defensive operations very favorably at all. Even when he was forced to go on the defensive at the beginning of September 1944, Patton exhorted his corps and division commanders to conduct aggressive patrolling, reconnaissances in force, and limited objective attacks to maintain the offensive spirit in his soldiers. In "Letter of Instruction No.3" Patton devotes only one small paragraph to the use of armored divisions in defensive operations. He says:

> In defensive operations, armored divisions should be placed to counterattack enemy assaults. Counter-attacks should be rehearsed and lines of approach reconnoitered so the enemy can be violently destroyed.(42)

The little he says in this passage indicates he thought the infantry divisions should be forward in defensive positions while armored divisions should be held back as mobile reserves in a counterattack role. An analysis of the Lorraine Campaign, the nearest thing to defensive warfare Patton was involved in, suggests armored divisions were generally used in this fashion. Perhaps the best example is 6th Armored Divison's counterattack in support of the 35th Infantry Division on 29-30 September 1944. Both the 35th Division and the 4th Armored Division of XII Corps under Major-General Eddy were being attacked east of Nancy, France, by elemants of the German 15th and 539th Divisions, which were having some local success against XII Corps units. Patton ordered 6th Armored Division, a XX Corps unit, to counterattack in support of XII Corps and 35th Division at once. This story is memorable because Eddy got "weak knees" and ordered the 35th Division to withdraw rather than hold; further, he did not order 6th Armored to counterattack as Patton had directed. When Patton heard about Eddy's actions, he immediately countermanded Eddy's order, directed 6th Armored to counterattack as planned, and went to the scene to ensure the action he had directed took place.(43) Even this example is not fully representative of the manner in which armored divisions were employed defensively.

Because of the inherent command organization of the armored division--two combat and one reserve command--the tendency was to employ combat commands rather than whole divisions in countattack roles. The manner in which 9th Armored Division was dispersed at the opening of the Bulge Campaign is further evidence of the tendency throughout the European Theater of Operations to disperse armored divisions into separately employed combat commands. Consequently, defensively the clear focus in Patton's command was at the tactical level, not operational.

That Patton was serious about employing his "two up-and-one back" concept at the army level as well as corps and below is revealed in his war diary, published under the title War As I Knew It. While visiting General Bradley's headquarters on 20 September 1944, Patton saw a map study that, he says, confirmed his belief that one army composed of three corps could have attacked straight into Germany towards Frankfurt. His concept was to

> drive through with two corps abreast and the third one echeloned to the right rear on the general axis, Nancy-Chateau Salins-Saarguemines-Mainz or Worms, then northeast through Frankfurt.(44)

Patton's thinking here reflects quite a simple plan operationally, though it is not clear how he thought this particular operation would have supported the overall theater strategy. Presumably, seizure of a bridgehead over the Rhine River followed by seizure of the industrial region around Frankfurt-Kassel-Coblenz would force Germany to surrender

unconditionally. Believing the Ruhr was more vital, Eisenhower and Montgomery did not see it the way Patton did, which suggests that Patton's ability to conduct operations in support of theater strategy was questionable, a point to be discussed later. The more immediate question Patton's operational concept for seizure of Frankfurt raises is his concept of operational art itself. In War As I Knew It Patton makes a distinction between strategy and tactics. He says:

> Use steamroller strategy; that is, make up your mind on course and direction of attack, and stick to it. But in tactics, do not steamroller. Attack weakness.(45)

Precisely what Patton meant by "strategy" and "tactics" is not clear, for he does not define either term. What he implies is that strategy sets the end or objective, which is fairly well fixed, and tactics are the very flexible means for achieving strategic goals. How operational art, a term Patton never used, fits into this conception is not clear. What is clear is that Patton's scheme for seizing Frankfurt is an operational concept reflecting the steamroller approach. This steamroller approach to operational art, however, is inconsistent with Patton's own most successful conduct of operations. For example, his turning movement with XV Corps in an effort to close the Falaise-Argentan Gap in mid-August 1944 is a perfect example of attacking the enemy's weakness--his flanks and rear. Patton believed his XV Corps units easily could have closed the gap, thereby encircling most of eighteen German divisions caught between First and Third Armies. Similarly, in the Palatinate

Campaign Third Army executed an envelopment across the Palatinate region in March 1945 that smashed German Army Group G against the Rhine River. Here is operational art at its best--or worst considering that many of the 18 divisions at Falaise escaped from the encirclement, albeit without most of their equipment. "Operational art" may not have been part of Patton's vocabulary, but his sometimes artful maneuver of corps to achieve a decisive advantage over the enemy as he did at Falaise, the Bulge, and in the Palatinate indicates he understood how to conduct operational art.

## Conclusions

From this section on Combined Arms Operations it is fair to draw three broad conclusions--call them tenets--about Patton's conduct of operational art. First, it is quite clear Patton believed in an integrated combined arms concept at the division and corps level. Infantry and armored divisions were his combined arms building blocks, which suggest a first tenet:

> Corps should lead with infantry divisions to achieve tactical penetration; then armored divisions should pass through or around to exploit or pursue.

Second, Patton's method of task organizing corps employing a mix of infantry and armored divisions in a 2:1 ratio implies the tenat:

> Task organize corps to be infantry heavy and employ combined arms teams with tanks dispersed, not concentrated.

This tenet may be hard to accept, but Patton's failure to organize an armored corps or even an armored heavy corps and his, at least, tacit acceptance of the dispersed employment of armored divisions in combat command-size units support this tenet as one by which he operated. Third, Patton believed massed artillery fires under centralized control are an integral part of a complete combined arms concept. Hence, a third tenet:

> Control of artillery should be centralized whenever possible to ensure it is massed and coordinated with infantry-armor attacks.

That Patton fought employing a combined arms concept should not be surprising, for he was a cavalryman who pioneered the use of tanks in World War I. He also worked closely with the infantry all his career and in World War I saw the devastation artillery could inflict. There is no evidence Patton ever thought one arm alone could be decisive, in spite of his obstinate arguments about cavalry while he was in the Office of the Chief of Cavalry. What is of interest--maybe even surprising--is the manner in which Patton actually put the various arms together in his corps and demanded they be used. His dispersion of armor assets, for instance, is especially curious because Patton is widely regarded as the pre-eminent American armor advocate in World War II. In fast-moving operations the dispersion of armor had no obvious detrimental

effects. But in more static situations, Lorraine for instance, the dispersion of armor even surprised some high-level German commanders. In defense of Patton, it can be argued that such dispersion of armored units was the logical outcome of Eisenhower's broad front strategy. A fundamentally linear battlefield 950 kilometers long and a limited number of all types of divisions virtually dictated that armored divisions had to occupy and hold large frontages, and could not, therefore, be held in reserve or massed. Patton's own defense on this criticism would probably have been to point out that he had intended neither to stop nor defend in any case, which suggests another topic of analysis: Offensive Action.

OFFENSIVE ACTION

Attack

George Patton did not much care for defensive warfare. While his command post was at Etain, France, Patton visited Verdun, especially the battlefield at Fort Douamont. Pointing out that Fort Douamont was a magnificent but futile monument to heroism, he remarked that "Douamont epitomizes the folly of defensive warfare."(46) Colonel Paul Harkins, Patton's Deputy Chief of Staff throughout World War II, echoes Patton's sentiments about defensive warfare in one of his prefaces in War As I Knew It:

> He [Patton] conducted American troops through three years of successful operations against the enemy. He never issued a defensive order. His theory--ATTACK, ATTACK, ATTACK, and, when in doubt, ATTACK again--shortened the war by never giving the enemy a chance to organize or reorganize enough to make a concerted attack against him.(47)

Harkins' claim that Patton's operational technique shortened the war is debatable. What is not debatable is that Patton thought attack was one key element of successful operational art. Undoubtedly, if Patton had had his way, there never would have been a Lorraine Campaign, or at least Patton would never have been part of it. Clearly, his conception of tactical and

operational art was continuous offensive action. According to Beatrice Ayer Patton, his wife and most ardent supporter, Patton's opinion on this subject was not the result of untutored conjecture. About the subject of offensive action she says:

> From his reading of history he believed that no defensive action is ever truly successful. He once asked me to look up a successful defensive action...any successful one. I found three, but they were all Pyrrhic victories.(48)

Although she does not mention which three defensive actions she had in mind or what the criteria are for a "successful" action, Beatrice Patton's point is clear enough. Patton was a great student of military history who, as she puts it, practiced his hobby of warfighting by studying "history seasoned with imagination and applied to the problem in hand...."(49) Evidentally, what history had led Patton to believe was that in the final analysis in order to win on the battlefield one must engage in offensive action, namely ATTACK! Even a cursory look at Patton's campaigns confirms this operational tenet.

To begin, Patton had some broad idea of what was going to be required on the continent of Europe once Third Army became operational. In his mind, the lessons of history, and more recently those of North Africa and Sicily, were that succes was due to offensive action and the use of maneuver against the enemy. Additionally, piecemeal attacks are not the way to go; coordinated--synchronized?--attacks are what produce

success.<50> In a speech to Seventh Army soldiers at the conclusion of the Sicily Campaign, Patton said that the enemy will be true to his principles and will attack. Stopping his initial attack will then prompt the enemy to counterattack with several divisions in an effort to create large salients in friendly lines and then operate laterally. Patton went on to say:

> The answer to such attacks is to attack him on the flank of his salient. For such operations armor and guns [artillery] are the surest answer. To make such attacks against large counterattacks, we must know where we are going, and we must attack with violence, speed and precision.<51>

Two aspects of this passage deserve comment. First, by the end of the Sicily Campaign Patton had a fairly clear idea about how his principal adversary conducted operational art. He was, then, well studied and knew his enemy's operational methods. Second, he had an idea--even if unrefined--about how he intended to deal with German operational methods and what the requirements would be: combined arms conducting offensive operations with speed and precision.

Patton made every effort to infect his subordinate commanders with his belief that one should always attack. Once during XII Corps' attacks around Nancy in August 1944 Patton went forward to visit General Eddy at his corps headquarters and found Eddy to be dispirited. Elements of the 35th Infantry Division had just been pushed off a hill northeast of Nancy, surrendering a tactical advantage to the Germans that allowed

them to fire into the town. The 4th Armored Division was also being heavily attacked; things were just not going well for XII Corps. Patton told Eddy two stories designed to help him keep things in perspective. First, he reminded Eddy of U.S. Grant's words "'In every battle there comes a time when both sides consider themselves beaten; then he who continues the attack wins.'" Second, he recounted Robert E. Lee's remark at Chancellorsville: "'I was too weak to defend, so I attacked.'"(52) As Patton remembers it, 35th Division retook the hill at once. This example and the discussion thus far suggests one operational tenet and one corollary to it. Patton clearly believed in and operated by the principle:

Always attack.

A corollary to this principle of attack is "Never give up ground." In his "Letter of Instruction No.2" to corps and division commanders Patton firmly establishes this corollary, saying, "it is cheaper to hold what you have than to retake what you have lost."(53) The corollary also suggests that Patton did not have a very firm understanding of defensive operational art. If the true objective of operational art is the destruction of enemy forces, then giving up ground in order to destroy them with multiple division counterattacks may be necessary. It is not clear that Patton understood, in the way Guderian, Manstein, and other German generals did, that

defensive operational maneuver may be necessary and desirable at times. The most generous reading of Patton's operations could suggest he understood defensive operational art but that he did not want his subordinates thinking anything other than offensively.

This offensive attitude about tactics and operations Patton pressed on his soldiers unremittingly. One technique he insisted on was for all division and corps commanders to secure a bridgehead as soon as coming to a river. Patton's purpose was at least three-fold in demanding this operational technique. First, seizure of a bridgehead is offensively oriented and, as such, does not give friendly soldiers time to think about stopping and going over on to the defensive. Second, it disrupts the enemy's plan, steals or retains the initiative, and causes the enemy to react rather than deliberately proceed with his own plan. Third, a bridgehead across an obstacle facilitates future--offensive--operations. Even during the Lorraine Campaign Patton insisted that his entire army remain offensively oriented by conducting reconnaissances in force, active patrolling, and limited attacks to seize terrain for future offensive operations. Patton's actions in the Lorraine Campaign reflect a way of looking at war that should not escape the reader. An offensive spirit is crucial to success tactically as well as operationally, and Patton spent much of his time as a commander imbuing his commanders and soldiers with this offensive spirit. To what extent this offensive

spirit made up for tactical or operational errors on the part of Patton or his commanders remains unknown.

Patton also recognized that the timing of attacks is crucial to success. Reflecting his view that a good plan executed at the right time--usually immediately--is better than a "flawless" plan executed at some future time, Patton invariably directed his corps and divisions commanders to attack even in the most obscure of situations. At the beginning of the Bulge Campaign, for instance, Eisenhower called a meeting of senior commanders at Verdun on 19 December 1944 to discuss what should be done about the German counter-offensive. When asked when he could make a stong attack with six divisions, Patton replied that he could make a strong attack with three divisions in three days, but that he could not attack with more than that until some days later. In spite of Eisenhower's resistance to the idea, Patton convinced Eisenhower that a strong attack in three days with three divisions was better than waiting to attack with six because of the surprise gained.<54> Patton's point, of course, was that the timing of the attack would surprise the Germans and likely upset their timetable. Patton's seriousness about this point is further revealed in his insistence that General Millikin's III Corps attack as soon as it could during the Bulge Campaign. As it turned out, III Corps was able to attack on 22 December, wholly ignorant of what lay in front of it and one day ahead of Patton's prediction. Patton remained convinced that the timing

of this attack materially aided in the early relief of Bastogne.(55) Later in the Bulge Campaign when General Middleton, commanding VIII Corps, asked to delay his corps' attack because his troops were tired from a long march, Patton denied the request and ordered Middleton to attack. In the event, the timing could not have been better because VIII Corps' attack on 29 December "ran directly into the flank of a German counter-attack consisting of two and a half divisions."(56) Needless to say, Patton was exuberant over this success and claimed, probably correctly, that the timing of VIII Corps' counterattack helped keep open the tenuous corridor between Arlon and Bastogne.

Speed of Operations

There is no doubt that a second key operational tenet of Patton's under the category of Offensive Action was:

Speed of operations is essential to success.

Evidence that supports the claim that this tenet on speed was crucial to Patton's conception of operational art is abundant and comes from a variety of sources. First, Patton's advice to his son which he recorded in a letter to the junior Patton on 21 August 1944--just at the end of Patton's rapid sweep across western France--is revealing. He writes:

I have one principle in these operations...and this is

> to--"Fill the unforgiving minute with sixty seconds worth of distance run." That is the whole art of war, and when you get to be a general, remember it.<56>

It requires no great powers of analysis to see what Patton was proclaiming in this passage, and it relates to Patton's thinking about time and timing discussed above. Because time is irretrievable, Patton thought that to be successful tactically and operationally a commander must "go all out" with the time available since the commander never knows for sure how much time is available. Patton's opinion was that in war opportunites are always fleeting and must be ruthlessly exploited or created to the maximum extent. In War As I Knew It he declares, "In small operations as in large, speed is the essential element of success."<58>

Patton had definite ideas about how speed of operations could be attained and retained. According to him, one way speed can be acquired is by making the necessary reconnaisance. His concept was to get armored reconnaissance units out in front far enough to maintain contact with enemy units and to find suitable road nets that will support armored or mechanized columns. Reconnaissance elements not only can find where the enemy is, but, equally important, they can find where he is not. When relayed in a timely manner to higher commanders, such information can enable tactical commanders to penetrate, envelop, or send enemy units into headlong flight. Speed can also be gained by providing proper artillery and air support and by using every available man. Patton's point was that

properly integrated combined arms can overcome enemy defenses and ensure that soldiers are exposed to fire for the shortest possible time.

Patton also thought speed of operations was essential at the operational level as well as the tactical. Many times throughout operations in Europe Generals Bradley and Eisenhower had to reign in Patton because to them he appeared to be overly hasty in his movements, prone to accept unwarranted operational or logistical risk. Patton, on the other hand, thought speed of operations was essential because it almost ensured the commander who attacked faster would retain the initiative. One example of his thinking centers on the Normandy breakout operation. Patton was afraid the war would end before he got into it and, consequently, he was not satisfied with Eisenhower's, Bradley's, or Montgomery's thinking on Operation COBRA. He says:

> I was also certain that, by pushing harder, we could advance faster. I stated at the time, and still believe, that two armored divisions, preceded by a heavy artillery concentration using air bursts, and followed by two infantry divisions, could have cut straight down the west coast to Avranches without the necessity of waiting for an air blitz.(59)

It is notable that Patton is advocating not only speed of operations in this passage, but the use of concentrations of armor to penetrate and exploit, something he never actually did in any of his operations. Similarly, Patton believed that a rapid single-army thrust through the Saar region of Germany

into the Frankfurt-Coblenz area of Germany would precipitate the capitulation of Germany. He believed that he could have accomplished this maneuver within ten days after crossing the Seine River on 21 August 1944, thereby shortening the war by almost a year. As implausible as Patton's claims may sound, there is some evidence that Patton's impatience with Eisenhower's and Bradley's cautiousness was not unfounded. Major-General Richard Schimpf, commanding the German 3rd Paratroop Division, says this of Patton's operations:

> We always confidently relied on Allied hesitancy to exploit success to give us time to withdraw and regroup in order to slow up the next thrust. But with your General Patton it was different. He was very aggressive in exploiting a penetration. His breakthrough at Avranches was an outstanding example of this. So was his phenomenal campaign in the Palatinate.(60)

Schimpf is simply pointing out that unlike other Allied commanders, Patton realized the advantages to be accrued from knocking the enemy off balance, stealing the initiative, and then keeping him off balance by developing tactical and operational dilemmas faster than the enemy can cope with them. Supporting Patton's analysis on the single-army thrust concept, Schimpf goes on to say that

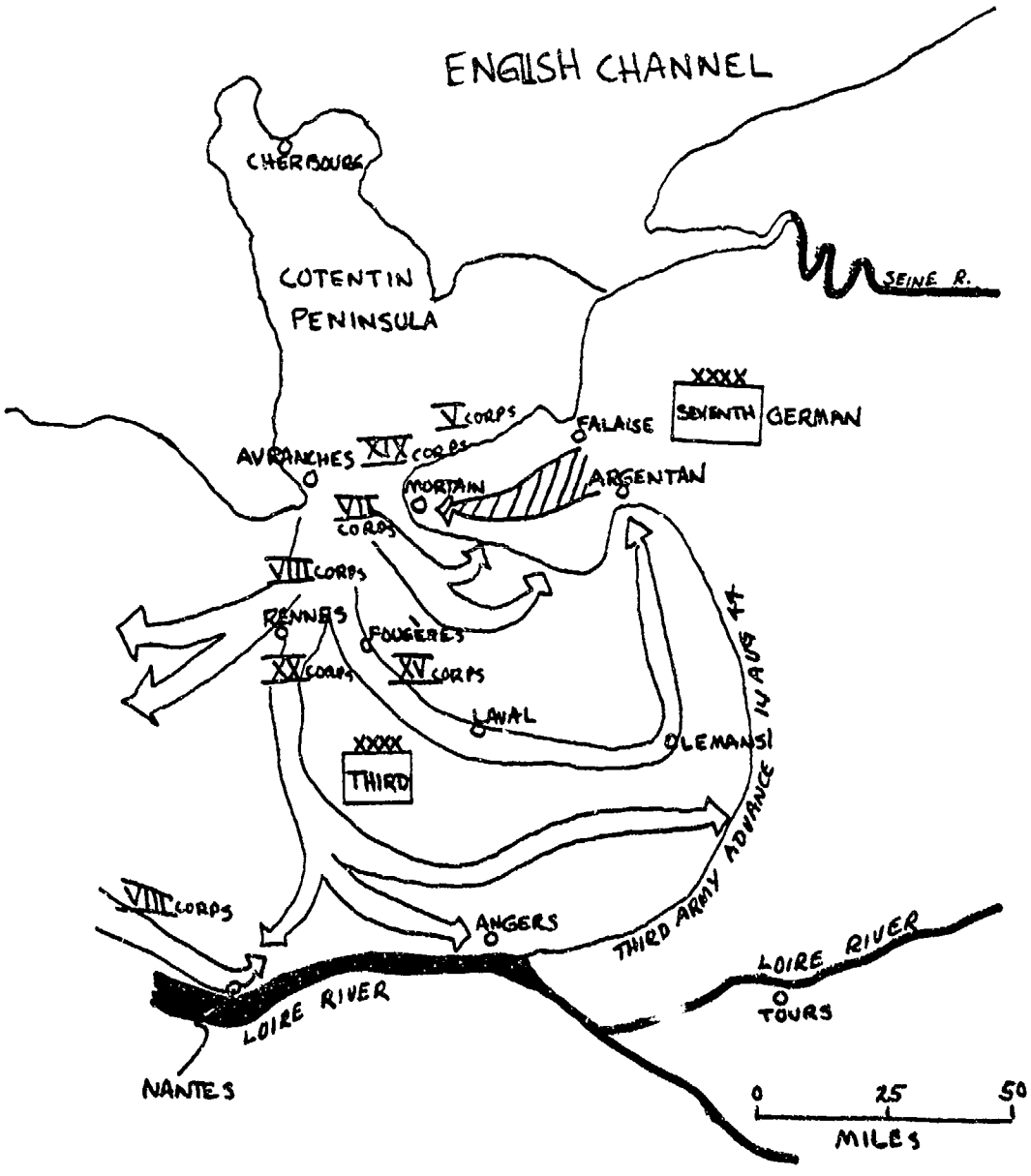
> [t]here is no question that if your Third Army had not been halted before Metz in September, it could have penetrated the Siegfried Line very quickly and been on the Rhine in a short time. At that time we were powerless to cope with the situation in that portion of the Front. But when your Third Army was halted, we obtained the time to regroup and we used that opportunity to the utmost.(61)

Even if Schimpf and Patton are wrong in their assessments of this speculative argument, the essential features of Schimpf's remarks ring true: speed of operations develops favorable operational situations which, to be operationally decisive, must be exploited in a timely fashion. Patton had a great feel for the value of speed tactically and operationally, though he may have been only vaguely aware that there are other considerations in war. What, for example, would have been the effect on theater strategy if Patton, knife-like, had thrust his army into the industrial Saar as he proposed? Chapter 4 examines this question and its implications not only for Patton, but Guderian as well. Suffice it here to say that Patton thought speed of operations is absolutely essential for success at the operational level of war.

## Envelop the Enemy

It has already been pointed out that Patton thought frontal attacks alone made little sense tactically. He foresaw that forward movement would probably result in meeting engagements, which the tactical commander should develop immeditately by maneuvering a portion of his force around to one flank of the enemy. Should this tactical envelopment be met with yet another enemy force, a still wider envelopment should be effected. There is evidence that Patton thought that

FALAISE-ARGENTAN GAP

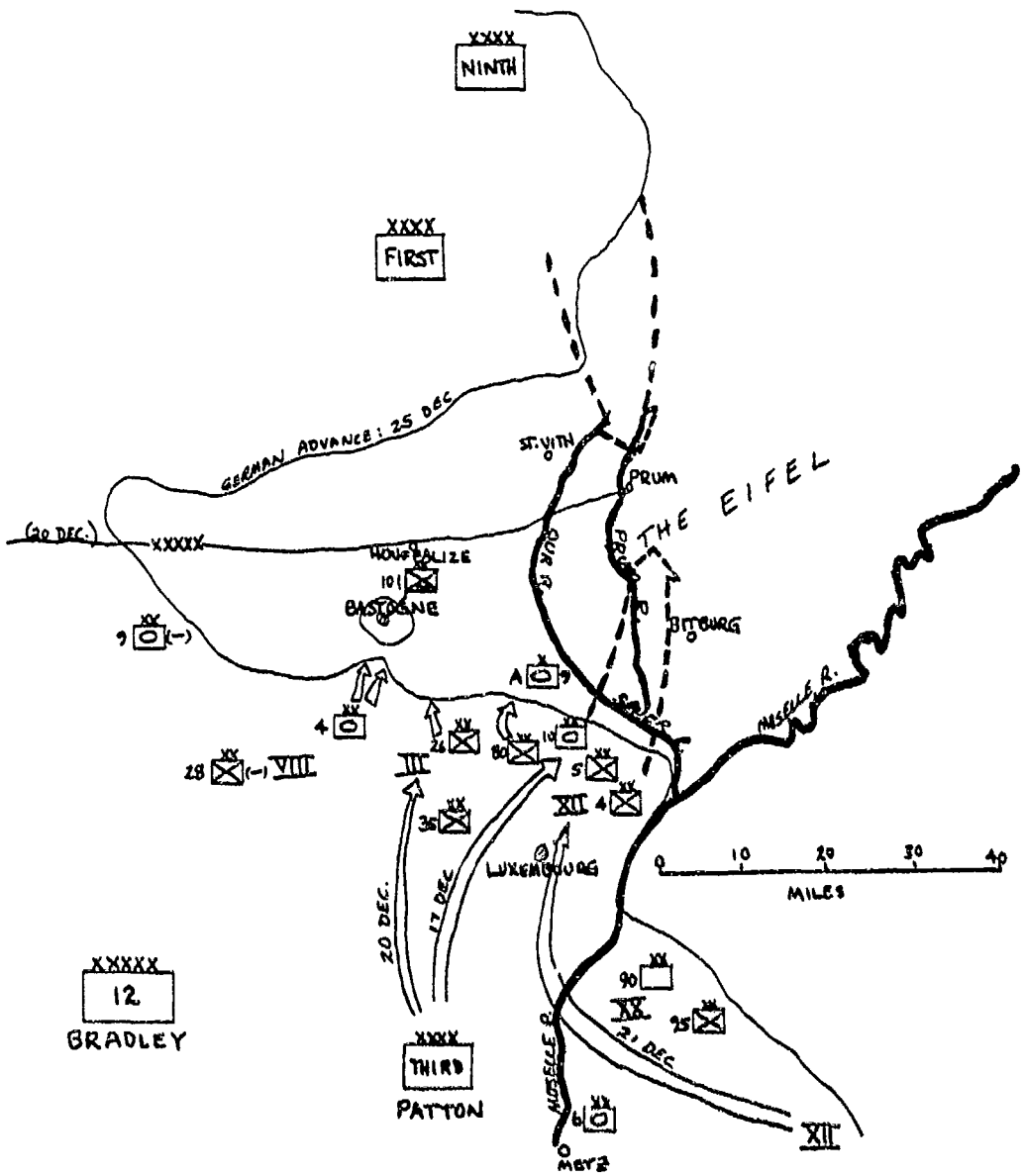



Map 4

operations designed to envelop the enemy were also appropriate at the operational level. A few examples from his operations in Europe show this to be the case. First, Patton's employment of XV Corps in a turning movement against Fifth Panzer Army, Panzer Group Eberbach, and Seventh Army at Argentan illustrates Patton's operational style (See Map 4). That Patton thought--before the fact--such an envelopment might come about is reflected in his remark to General Haislip, XV Corps Commander. After setting that corps in motion into the 80-mile gap between the German left flank at Mortain, France, and the Loire River to the south, Patton told Haislip not to be surprised if, in short order, he received orders to move northeast or due north toward Argentan.(62) Evidentally, Patton had studied the map and had seen the possibility of enveloping Fifth Panzer Army between the British at Falaise and the Americans at Argentan.

A similar account can be given for Patton's conception of the Bulge counterattack plan. His initial reaction to reports that the Germans had launched a sizable attack through the Ardennes, overrunning Middleton's VIII Corps, was that Allied commanders should have the intestinal fortitude to allow the German attack to develop and reach its culminating point. Then, Patton's Third Army should counterattack the German attack but do so by crossing the Our and Sure Rivers and enveloping the German thrust at a greater depth than Eisenhower envisioned.(63) Such an envelopment--in conjunction with a

THIRD ARMY'S COUNTERATTACK at the
BATTLE of the BULGE
(Dec 1944)

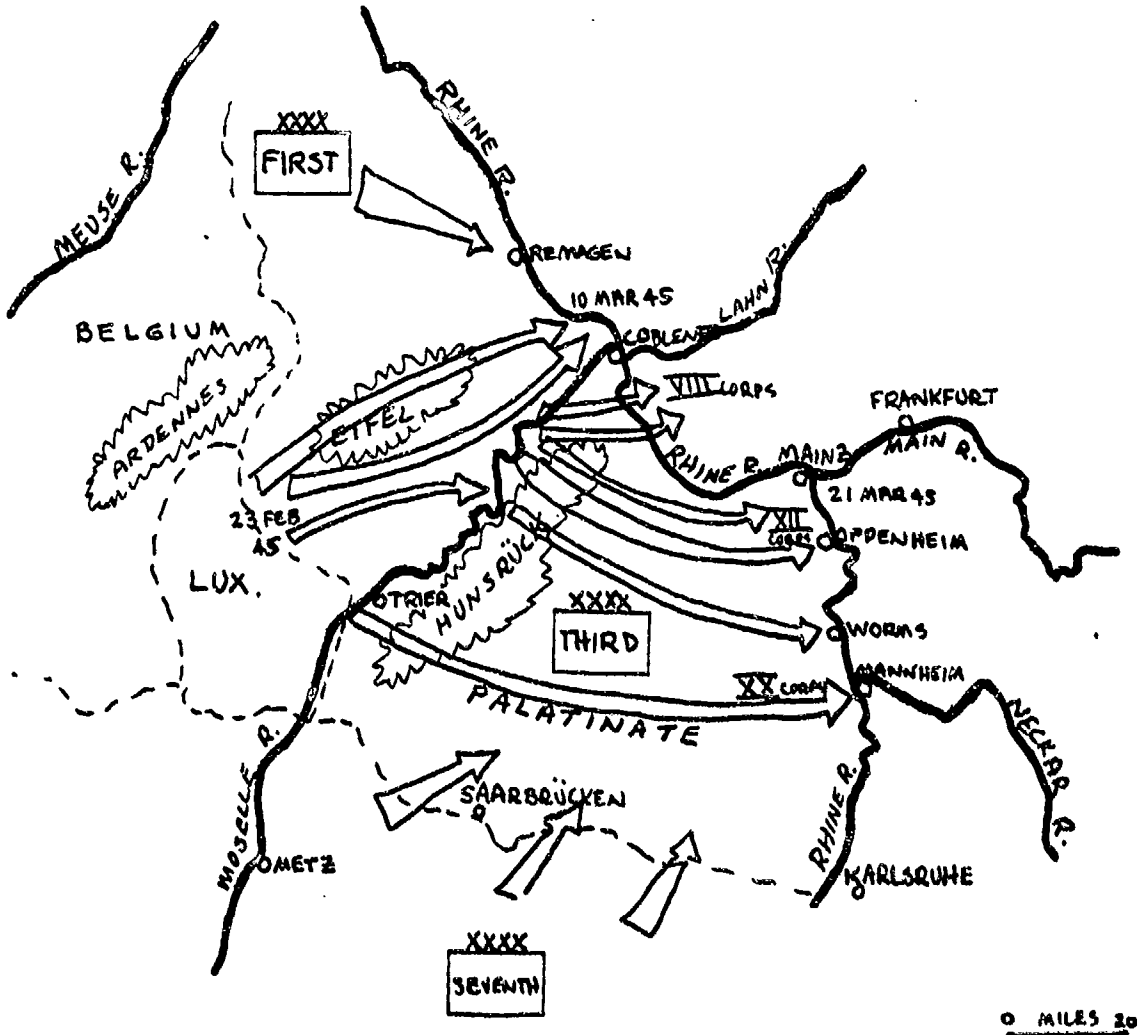



Map 5

similar thrust from Montgomery's forces--would not only strike the weakest elements of the attacking German armies, but would encircle more German units than would a thrust across the waist of the Bulge toward Houffalize (See Map 5). Moreover, Patton thought a deeper enveloping counter-thrust toward Bitburg and Prum would put Allied armies, particularly his of course, in a better position for subsequent operations into Germany. Eisenhower, he thought, would never have agreed to such a risky plan, and he probably was right.

Patton's Palatinate Campaign, which so impressed MG Schimpf, best reflects his attempts to operationally envelop enemy forces (See Map 6). After piercing the Siegfried Line near Bitburg and Prum in the immediate aftermath of the Bulge Campaign, Patton's army punched through the Eifel region of Germany toward Coblenz on the Rhine River. His army's rapid seizure of bridgeheads across the Moselle River put Third Army in a position to take enemy forces in the Siegfried Line that were holding up Seventh Army. Hitting elements of the German First and Seventh Armies in the rear and flank, Third Army enveloped and crushed Army Group G against the Rhine River. With Walton's XX Corps on the right flank, Eddy's XII Corps in the center, and Middleton's VIII Corps on the left, Third Army swept through the Palatinate, leading with armored combat commands, bypassing pockets of resistance and charging to the Rhine. In ten days Patton's army destroyed German Army Group G and forced the surrender of over 70,000 Germans in one four-day

EIFEL AND PALATINATE CAMPAIGNS
(Feb-Mar 1945)




Map 6

period alone.(64) The effect of Patton's envelopment of Army Group G was that, with few exceptions, German soldiers surrendered in droves, German command and control evaporated locally, and serious resistance collapsed. As Patton recognized, the operational payoff for bold--even risky--rapid envelopments, employing whole corps as the enveloping force, can be operationally decisive. This campaign and Patton's attempts to envelop Fifth Panzer Army at Argentan-Falaise imply that he attempted to adhere to the principle:

> Operationally envelop the enemy whenever possible; that is, maneuver rapidly into the enemy's rear.

In fact, so rapid was Patton's movement through the Palatinate that elements of General Patch's Seventh Army got caught up in Patton's race to the Rhine. At the conclusion of the Palatinate Campaign, Patton received a telegram from Lieutenant-General Gerow, Commanding General of 15th U.S. Army, in which Gerow said, "Congratulation on enveloping three Armies, one of them American."(65)

The conclusion to be drawn at this point is that Patton conceived of operational art as essentially a series of offensive actions. To be decisive, such offensive operations should be characterized by an incessant series of tactical and operational level attacks, executed with great speed, culminating, if possible, in an envelopment of large enemy forces to ensure their defeat.

COMMAND and CONTROL

In early August 1944, General Haislip, commanding XV Corps in Third Army, and Patton got into a vicious argument because Patton could not find Haislip's forward command post. Patton complained that Haislip was running away from him, and when told it was Third Army's responsibility to maintain communications with its corps, Patton was not mollified. Finally, Haislip said,

> All right. Take your choice. Do you want me to sit back and wait for your lousy units to get in their communications, or do you want me forward where the fighting is? You can't have both.<66>

When Haislip finished, Patton calmed down and allowed as how Haislip had something there. The story is interesting not only because it is mildly amusing--Patton getting a dose of his own medicine--but also because it illuminates a central tenet of Patton's operational art:

> Command and lead at the front.

Patton firmly believed that there was no good substitute for the personal presence of the commander or of leaders generally. In "Letter of Instruction No. 1" to division and corps commanders Patton specified that "[e]ach, in his appropriate sphere, will lead in person."<67> In that same document he made it clear that he expected either the commanding general or his chief of

staff and one member of each staff section to visit frontline units every day. This policy applied to signal, medical, ordnance, engineer, and quartermaster sections as well as combat and combat support units. Moreover, in his own headquarters individuals who visited forward units would be present at the next day's staff briefing to report on any significant observations that might benefit the whole command. Patton had good reasons for insisting on compliance with these policies. One reason was to ensure that staff officers who do the planning at the higher echelons of command do not lose touch with the realities combat units have to face in executing a plan. A second reason was the simple fact that more senior officers, Patton thought, have more time; hence, it is they who should go forward to see the junior officers. An exception to this general rule occurs when a coordinated plan is necessary and requires a meeting of several junior and senior commanders.

One of the reasons Patton was willing to endure the testy response of General Haislip was that he had no patience for commanders who were unwilling to go forward where the action is to personally influence events and make timely critical decisions. On the hazards of commanding too far to the rear, Patton says:

> It will be remembered that on January 8 [during the Bulge Campaign], I was urged by high authority to attack. At 1030, on the tenth, two days later, I received a direct order to pull out an armored division and put it in reserve south of the city of Luxembourg as a possible counter-measure to the supposedly impending break-through. These two

> instances...indicate the inadvisability of commanding from too far back.(68)

This bitter comment was directed at Eisenhower, who in Patton's estimation was too far to the rear to have any real sense of what was going on in and around Bastogne during the Bulge Campaign and, consequently, at best was ambivalent about what to do and at worst prone to issue contradictory orders. In fairness to Eisenhower, it should be pointed out that in the aftermath of the German Bulge offensive the Combined Chiefs of Staff directed Eisenhower to retain an operational reserve, and Eisenhower was trying both to have Patton attack and give up a division as a SHAEF reserve. These salient facts notwithstanding, Patton's main point remains intact: command can be facilitated if commanders are willing to go forward. An example that illustrates the application of the principle is the manner in which Patton put into effect Eisenhower's order to send an armored division to the city of Luxembourg. To arrange for the relief and withdrawal of 4th Armored Division, Patton went forward to Bastogne and met with the commanders of 4th and 6th Armored and the 101st Airborne Divisions. Although the affected commanders only received the order to relieve 4th Armored Division at about 1030 hours on 10 January 1945, before dark two combat commands of the 4th Armored Division started for Luxembourg via Arlon.(69) Both this action and Patton's remarks about Eisenhower's failure to spend a significant amount of his time with forward armies and corps suggests an

operational tenet by which Patton exercised command and control:

> Commanders should identify ahead of time critical events, their locations, and times of occurrence and be there to make decisions and overcome friction.

The oft-repeated and amusing story that recounts Patton's encounter with the officers of an unnamed armored division just before the breakout at Avranches further reveals Patton's thinking on commanding forward. The story goes that while visiting troops near Coutances, France, on 29 July 1944 Patton found an armored division lined up on a road. All the officers from division headquarters were studying a map for the purpose, so they said, of finding a suitable place to cross the Sienne River. Remarking that "One look is worth a hundred reports," Patton informed them all that he had just waded across the river, hampered only by the inaccurate fire of one enemy machinegun.<70> Patton's point is clear: there is no good substitute for personal forward reconnaissance by commanders, whether tactical or operational, as his comment about Eisenhower shows.

Patton appears to have made it his business to be at critical locations at the critical time. And these locations were usually forward where some crucial phase of an operation was on going. For example, recognizing that the potential was high for things to go wrong in and around Avranches while his two operational corps passed through that town, Patton made

sure he was there to prevent or reduce friction. His traffic directing in Avranches to untangle traffic jams seems laughable until it is realized that German generals did the same thing in both Ardennes offensives, illustrating the need to anticipate friction and have a plan to deal with it even if it means turning traffic cop for a while.

Another example, which has already been described, is Patton's handling of General Eddy's decision to withdraw 35th Infantry Division during the Lorraine Campaign. As Patton remembers it, he had ordered the 6th Armored Division to counterattack in support of the 35th Infantry Division from XII Corps because the 35th Division was under tremendous pressure from at least two German divisions. When General Gaffey, Patton's Chief of Staff, visited XII Corps the next day to see how 6th Armored Division's attack was going, he discovered that not only had the 6th Armored not been committed but that Eddy, XII Corps commander, had ordered the 35th Division to withdraw. Patton told Gaffey to countermand the withdrawal order, and he went forward to the command post of the 6th Armored Division to have a tete-a-tete with the corps and two division commanders. He found that all three general officers were fatigued and shaken by a near miss from German artillery earlier in the day. Patton then directed 6th Armored to attack the next day and left, telling Eddy he had perfect confidence in him. As it turned out, 6th Armored's attack went off well and produced a tactical success. Here again Patton exemplifies his belief that

nothing can serve as an adequate substitute for the presence of the commander at the critical point. And Patton clearly believed the principle applies at the operational as well as the tactical level of command.

Consistent with his principle that commanders should be located forward, Patton operated two forward command posts (CPs): a Forward Echelon and an Advanced Tactical Headquarters of the Forward Echelon.(71) In fact, it was Patton's policy that all divisions and corps have a CP consisting of at least these two echelons, which roughly corresponded to the contemporary American configuration of a main CP and Tactical CP. Patton further stipulated that the Advanced Tactical CP "should be as small as possible and mobile with minimum radio traffic."(72) According to Patton, at army and corps the Forward Echelon should consist of the Commanding General, Chief of Staff, Secretary of the General Staff, G-1, G-2, G-3, Engineers, Field Artillery, Antiaircraft Artillery, Signal, and cooperating air. In addition, representatives from the Provost Marshal, Special Troops, Headquarters Commandant, liaison officers from G-4, Ordnance, Medical, Quartermaster, and G-5 Sections should also be present.

The Advanced Tactical Headquarters (ATH) should consist of the Commanding General, forward echelon Chief of Staff, and a small operations section of G-2, G-3, Engineers, Field Artillery, and Signal. Third Army also maintained a Rear CP commanded by the G-4, where the G-4, G-5, Chemical Warfare,

Finance, Medical, Quartermaster, Ordnance, Signal, Engineers, Adjutant General, Inspector General, Judge Advocate General, Special Services, and Chaplain performed their main business.<73>

The ideal location for a corps CP was within one-half hour's drive from the farthest division CP. Such proximity would certainly facilitate the use of wire communications, which Patton much preferred over radio. In fact, Patton never used the radio to talk to his commanders. In order of preference, he communicated orders to them face-to-face or by telephone. He much preferred to issue orders verbally, general-to-general as he put it, and then follow with a written memorandum confirming what was transmitted orally.<74> This technique of Patton's amplifies what has already been said: Patton believed personal leadership was an absolute requirement for successful commanders. Evidently, he was nervous about placing too much reliance on radios, for he says that in all attacks one should make the maximum use of wire as the primary means of communication and use radio as a secondary means. In highly mobile warfare reliance on wire is difficult at best. In an interesting letter written to his son on 21 August 1944, during Third Army's sweep across western France, Patton confirms this point. He says,

> The great difficulty we have experienced here is that we have moved so fast and so far that we are nearly always out of communication.<75>

Unfortunately, Patton does not mention with whom he was out of communication. But his fear of enemy air attacks against CPs may have been part of the problem because he says that large radios should not be kept in the vicincity of a command post. They should be separated from the CP and remoted in with telephone; "[o]therwise, the enemy air will home on them and get the command post."(76) Remoting radios into a CP takes time, and in highly fluid operations, there is not much time to lay wire and establish either radio or telephone communications with higher headquarters or anyone else for that matter. As it was, Third Army's Forward Echelon (Main) moved an average of once every three days between 1 August 1944 and October 1944, when units settled in for the Lorraine Campaign.(77) Thus, given Patton's preference to rely on verbal face-to-face communications and his reluctance to use radio at all, it is no wonder he was out of communication with other echelons of command. Like Guderian, Patton attempted to alleviate his command and control problems by making extensive use of a small plane to travel, though, unlike Guderian, he did not rely on the radio.(78)

Another technique that Patton used to facilitate command and control also emulated Guderian's approach. Invariably, when Patton left command of one unit, such as II Corps or Seventh Army, he took with him some key members of his staff. These were men whose judgment Patton trusted and who obviously had been battle tested. When Patton left Seventh Army to form Third

Army in England, for instance, he took with him sixteen officers from his Seventh Army staff.<79> Out of a Third Army staff strength of 450 officers, sixteen officers is not many. However, the men Patton selected filled not only key slots, but, with few exception, were regular officers who had long cavalry and armored service. Consequently, helping him plan and control operations, Patton had a small core of battlewise staff officers who shared an understanding about how operations should be conducted. Furthermore, Patton took time to train his incoming corps commanders and their staffs by having them perform duty for a period of time opposite their army counterpart.<80> The result was that newcomers quickly picked up on how Third Army operations were planned and conducted and later led to smoother operations in the corps.

General Patton also mandated that division-size units and higher in Third Army would conduct a daily staff briefing to ensure coordination of effort within the organization. In Third Army the daily staff briefing took place at 0830 in the main CP according to a fixed routine. The briefing began with the G-3 operations officer describing the friendly situation on the whole of the Western Front. The G-3 air officer then gave the friendly air situation, and was followed by the G-2 operations officer, who gave a description of the enemy situation, including dispostions, strengths, movements, prisoner of war figures, capabilities and terrain analysis. The G-2 was followed by the Public Relations Officer, who highlighted the

world news. The Chief of Staff closed with announcements and turned the floor over to Patton, who either spoke or dismissed everyone.<81> The whole affair usually lasted only 15-20 minutes, not much time to make any important decisions. However, Patton never intended for any important decisions to be made during this 0830 daily briefing because the important decisions concerning future operations already had been made at a meeting which daily preceded the formal 0830 staff briefing.

At around 0800 every day Patton held a meeting with key members of his staff to have an exchange of ideas. Included in this informal meeting were the Chief of Staff, deputy Chief of Staff, G-2, assistant G-2, G-3, Chief of Staff of XIX TAC, and Patton. It was at this meeting that Patton usually made key decisions about impending operations, and the visibility and representation of the G-2 section is indicative of Patton's interest in intelligence matters in planning operations and making decisions.

In fact, according to Patton's deputy G-2, Colonel Robert Allen, Patton "never made a move without first consulting G-2. In planning, G-2 always had the first say."<82> Patton's intense interest in intelligence information is echoed by Third Army's G-2, Colonel Oscar Koch, who points out that Patton went to great lengths to obtain timely intelligence, including the creation of the Third Army Information Service. This organization, headed by the commander of the 6th Cavalry Group, Colonel E.M. Fickett, had the task of monitoring the Third Army

radio traffic from battalion to division and their reconnaissance units for the purpose of gaining critical combat information and relaying it to Third Army Advanced Tactical Headquarters rapidly. In addition to monitoring friendly radio traffic, Colonel Fickett's unit also established officer patrols along all frontline battalion and regimental headquarters for the purpose of exchanging information. Because Patton saw that timely reporting was absolutely crucial, he "telescopically" employed 6th Cavalry Group as his eyes and ears, bypassing normal reporting channels.(83)

In addition to his "telescope" technique, Patton made increasing use of air photography as he became more experienced as an operational commander. In Tunisia while Patton was in command of II Corps only two air photography missions were flown in support of II Corps during the 30-day period from January-February 1943. During operations on Sicily, 140 air photography missions were flown in support of Seventh Army during the 38-day campaign. In September 1944 alone 223 air reconnaissance photography missions were flown in support of Third Army operations.(84) In part, differences in sortie rates can be explained by organic or attached air capability. Seventh Army, for example, had a photographic reconnaissance squadron of ten planes in direct support once HUSKY began; II Corps had no such assets.(85) But it is also clear that Patton and his intelligence staff more and more came to rely on the capabilities of air photography to aid in operational planning.

Patton's G-2, Colonel Koch, claims that largely through the interpretation of air photography, the Third Army staff had the Bulge attack "pegged," as he puts it, before the attack and before any other allied headquarters had an inkling the attack would occur.(86) Koch maintains that one reason Third Army knew as much as it did about the impending German offensive was that it was standard practice in Third Army for the G-2 Section to overlap other areas outside Third Army boundaries. Overlapping coverage ensured that Patton's staff had adequate intelligence information about the army's flanks and precautionary security measures could be taken if needed.(87) Both the weak strength of VIII Corps on Third Army's north flank and the evidence of a German build up east of the Ardennes led Koch to believe the Germans could launch an offensive. Hence, Patton could at least get his staff to be thinking about an operational concept to deal with such a capability. A point worth noting here is that Patton's G-2 focused on the enemy's capabilities rather than his intentions when making G-2 estimates. It was apparently left to Patton to judge what the enemy intended to do in particular cases. The operational tenet that this discussion suggests is:

> Establish an intelligence channel that ensures rapid and timely input of combat information, bypassing normal channels.

Patton's reliance on his G-2 and the efforts of Colonel Fickett's 6th Cavalry Group help explain why, according to

Patton's deputy G-2, "Third Army was never surprised and why it was always smashing through vulnerable sectors in the enemy's lines."(88)

Although Patton did have access to Ultra during his European operations, there is conflicting evidence on how extensively he used this source of information. It was intelligence from Ultra that prompted Patton to halt the 35th Infantry, 80th Infantry, and 2nd French Armored Divisions near St. Hilaire just after the passage through Avranches in early August 1944. At the time Patton thought word of an impending German counterattack to cut his army's communications was a bluff.(89) In the event, it was not a bluff and halting elements of XII, XV, and XX Corps turned out to be fortuitous, for they helped halt the German counterattacks in and around Mortain, France. But because of the desire to safeguard Ultra as a source of intelligence, its intelligence products were distributed on a push rather than demand basis; consequently, it is questionable whether Patton was able to rely on it heavily. On the other hand, Major Warrack Wallace, an Ultra recipient on Patton's staff in August and September 1944, claims that although Patton initially was skeptical of Ultra's value, as it proved its reliability over time, Patton came to rely on Ultra more and more.(90) However, precisely how much Ultra influenced Patton's operational planning remains unclear.

A reason that helps explain why Patton's Third Army was "never surprised" may be the use he made of his daily informal

staff briefing. Koch says Patton used this session to exchange ideas after Koch gave a quick intelligence briefing to those present. As Koch describes it,

> [t]his early-hour briefing led to a most fruitful exchange of ideas. But even of greater importance, it made everyone there aware of what the commander had in mind, what he would do under various circumstances that might arise. The staff was kept up to date with Patton's thinking on a daily basis. Future plans were laid and made known and an intimacy of thinking developed.(91)

Koch's comment suggests four points worth elucidation. First, he appears to be saying that these informal sessions with Patton helped to convey Patton's intentions for current and future operations. Second, Koch implies that Patton used the briefing to do some "what-iffing" or wargaming out loud; this undoubtedly got Patton's staff to start thinking, if they already were not, about contingency plans for various operational scenarios that might develop, such as the Bulge counterattack contingency. Third, Patton used these sessions to focus his staff's thinking on future plans, indeed whole campaigns! In "Letter of Instruction No.1" Patton points out that maps can indicate where critical situations will develop and where the commander should be. Moreover, from the operational perspective, Patton says:

> Army and corps commanders are not so much interested in how to beat the enemy from a tactical standpoint as in where to beat him. The where is learned from a careful study of road, railway, and river maps. The question of the tactical means to be used by divisions in securing these points is, of necessity, studied

from large-scale maps.(92)

This quotation reveals more about Patton's understanding and conception of tactical and operational art than perhaps any other of his remarks. It also helps explain why he made as much use as he did of a 1:1,000,000 Michelin touring map. It was just such a small-scale map that enabled Patton to determine where, from the operational perspective, the critical battles would probably take place during a campaign. This is one way Patton raised the probability that he would be at the locations that critical events or battles would likely take place. Koch says that as early as September 1944 Third Army engineers had prepared a preliminary tactical terrain estimate of the Ardennes region. Included in that analysis were the "rivers, canals, road networks, railroads and--as always in Patton's commands--an analysis of the terrain's suitability for mechanized maneuvers."(93) Although many of the future operations Patton's staff studied and planned were never executed, he was always forcing his staff to think ahead and plan for future operations. His technique indicates that he was able to envision future tactical battles and their linkage in a campaign plan and make the further step of linking campaigns together in an appreciation of theater strategy, which suggests he operated by the tenet:

> Success in operational art comes from an intense study of small-scale maps to envision the course of the campaign as a whole and its linked battles.

Nevertheless, it is arguable that Patton did not do this as well as he should. His handling of tactical battles during the Lorraine Campaign implies he did not see the battles for Nancy and Metz as connected in any way. And the manner in which he "dragged" 12th Army Group across Europe suggests he did not, along with many others, see how his operations supported Eisenhower's theater strategy.

The final point Koch's remarks above bring to light is Koch's perception that Patton's early morning informal staff briefings fostered "an intimacy of thinking" among key members of Patton's staff. Patton apparently thought it was immensely important that key members of his staff share his view of how the planning and execution of operations should be conducted; hence, the G-2, G-3, Chief of Staff, and Chief of Staff of XIX TAC were always present at these informal sessions. Consequently, the fact that Patton was frequently absent from his command post--because he was forward with corps and divisions--had no deprecating effect on staff operations. Knowing what and how Patton thought, his staff could, more often than not, do what Patton wanted done during obscure situations or when Patton was out of touch with them.

In theory, Patton thought commanders should never rob subordinates of initiative by over-contolling them. He insisted that subordinates be told what to do but not how to do things. To guard against over-contol, he thought "a general should command one echelon down, and know the position of units two

echelons down."(94) An army group commander, for example, should command his armies and know the locations of his armies and their corps. Patton thought this principle applied all the way down the hierarchy of command, and that any commander who posted on his own map locations of units three or four echelons down would soon fall into the habit of commanding those units and lose efficiency. In practice, Patton himself was not entirely able to adhere to his own principle. Many times he directed division commanders to send combat commands or regiments on specific missions. As an example, the detailed Third Army After Action Report records the following action:

> The Army commander [Patton] verbally ordered the XX Corps to move one regimental combat team from the 5th Infantry Division to Angers, to move one infantry battalion from 5th Infantry Division to Nantes [France] and to move 5th Infantry Division, less attachments, from south of Vitre to the vicinity of Segre.(95)

Given Patton's own principles for exercising command and control--mission orders--it is difficult to justify his telling a corps commander to move a battalion. Even so, it is possible to defend Patton against the charge of over-control by pointing out that in the highly fluid and fast-moving mobile warfare in which he was at his best, Patton had a duty to give on-the-spot orders when he saw things going awry or when he saw an opportunity that demanded immediate exploitation. His comment that one company of tanks on the objective can carry the day comes to mind here. He once remarked that Third Army faced

three enemies: the Germans, the weather, and time. The last of these--time--is unforgiving and irretrievable; hence, his continual concern that valuable time not be wasted or that fleeting opportunities should not go unexploited. Given his aggressive personality and his understanding of the nature of combat operations, it is not surprising that Patton was unable at times to adhere to his own guidance concerning over-control of subordinates.

RISK

In his book Mechanized Infantry Richard Simpkin says that two factors militated against bold and sweeping maneuver in the European Theater: the broad front doctrine of Eisenhower and Bradley; and the fundamental American concepts of the value of firepower and the establishment of a fire base. However, Simpkin goes on to say that

> [a]s General Speidel, Rommel's Chief of Staff, puts it, Patton was "the only Allied general who dared exceed the safety limits in the endeavor to win a decision."(96)

As in the case of Guderian, an analysis of Patton's conduct of operational art reveals that he elected to accept risk--a high degree according to Speidel--in order to achieve operational decision. Therefore, an examination of Patton's approach to risk acceptance and risk reduction is appropriate, and the present discussion focuses on three areas in which Patton accepted risk: exposed flanks, reserve employment, and logistical sustainment.

Flanks

Patton's operations in Europe all indicate that he adhered in his operations to the following operational tenet:

> Accept risk to exposed flanks to achieve operational depth and decision.

Evidence that Patton operated by this principle abounds both in his writing and operations. It is instructive, first, to get a flavor for Patton's whole attitude about risk to exposed flanks. After his morning staff briefing on 31 July 1944, the day before Third Army became operational in Europe, Patton delivered the following remarks on the subject of flanks:

> Forget this goddamned business of worrying about our flanks. We must guard our flanks, but not to the extent that we don't do anything else. Some goddamned fool once said that flanks must be secured, and since then sons-of-bitches all over the world have been going crazy guarding their flanks....Flanks are something for the enemy to worry about. Not us.(97)

Beneath the easily-imagined theatrics that accompanied Patton's remarks, there was undoubtedly seriousness of the first order. Even though this statement was made before Third Army became engaged in pursuit operations across France, it is probable that Patton had a vision or conception of how fast-moving mobile operations should be conducted. Included in that conception were exposed flanks, but tolerably exposed flanks if reasonable precautions were taken and operations were executed at great speed. Patton himself, in fact, cites only two examples of his acceptance of risk: his passage of two corps through Avranches in twenty-four hours; and his decision to leave his army's right flank open during his sweep from Avranches to the Moselle River.(98) Both entailed an acceptance of risk to an exposed flank, and the passage through Avranches exposed Patton's army to destruction from the air as well.

These examples raise the question of how Patton reduced risk to his flanks.

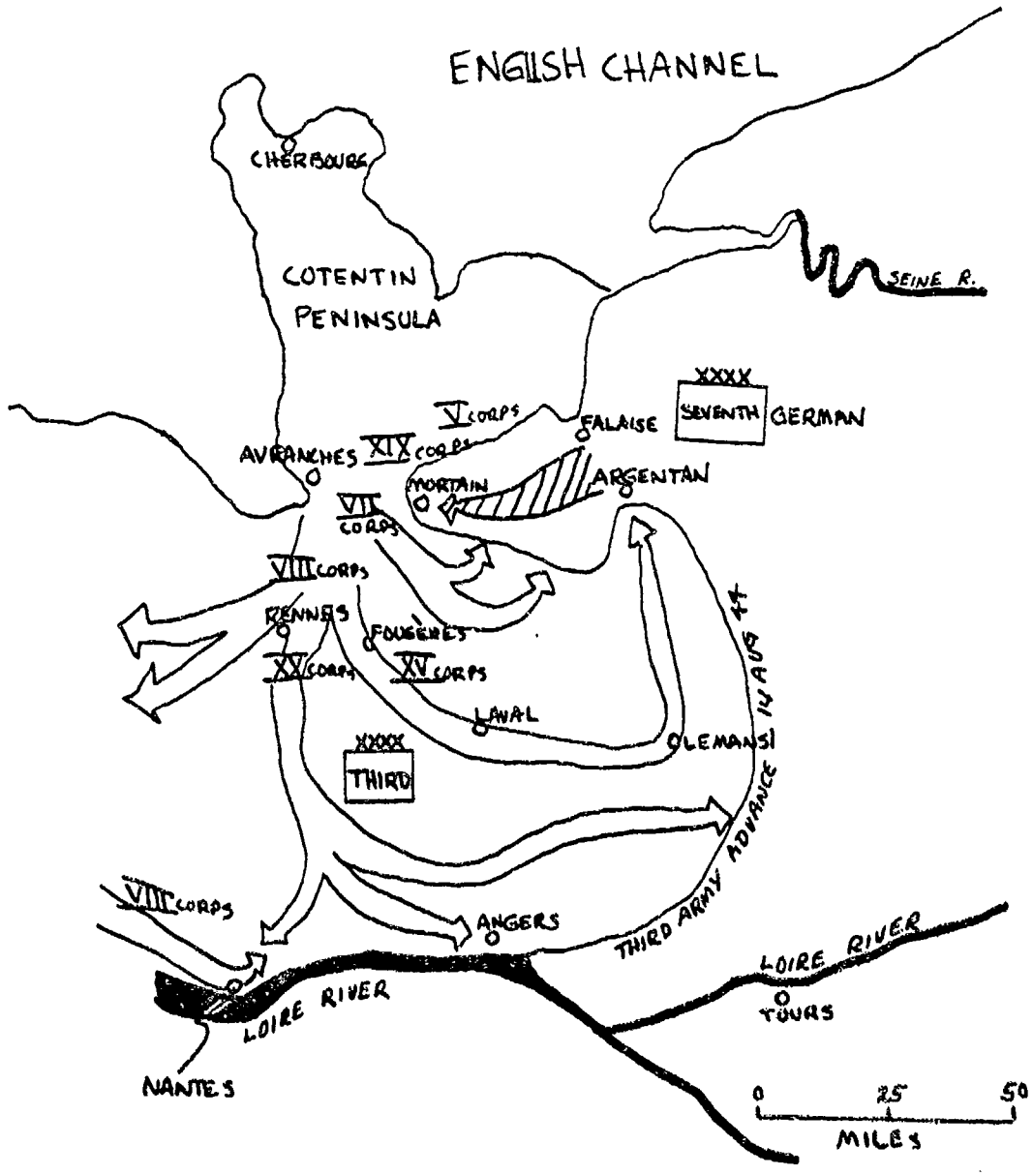
The risk of being concentrated in a narrow corridor and subject to air bombardment as occurred while Third Army was breaking out of the Cotentin Peninsula in August 1944 was unique in Patton's operations. It is arguable that during most of his operations in Europe his corps and divisions were spread out too far and, therefore, were not subject to the threat associated with being concentrated in a defile or corridor. But at Avranches, a single, narrow road about five miles long converged at the Avranches Bridge and funneled all traffic through the town and out the southern side for a distance of two and one-half miles or so. Patton was worried that if a traffic jam should occur while elements of two armored and two infantry divisions were filing through Avranches, losses would be terrific, especially among truck-borne infantry.

Essentially, his plan to cope with this risk was two-fold: (1) keep things moving fast; and (2) do not take counsel of your fears. Recognizing that passage through Avranches would prove to be a critical because high risk event, Patton positioned himself in Avranches to ensure there would be no traffic jam. The passage of VIII and XV Corps within twenty-four hours was one of those things, Patton says, that theoretically could not be done, but was. It was successful because of the "extremely effective use of veteran staff officers and by the active part taken in it by corps and division commanders who, on occasion, personally directed

traffic."(99) Thus, speed of operations proved to be the key ingredient in reducing risk in this operation. But speed was facilitated by employing a battle wise staff and through the close control by senior officers.

The German Seventh Army's counterattack toward Mortain, France, with the object of cutting off Third Army from the rest of Allied forces on the continent raises the further question of risk to flanks and measures taken to reduce that risk. Certainly speed of operations was one way to reduce risk to exposed flanks. If corps move fast enough and achieve sufficient depth quickly enough, it is the enemy who will be worrying about his flanks. Patton thought this because he saw that fast-paced offensive operations rob the enemy of the initiative, causing him to react to a series of rapidly changing tactical situations. He also thought that when infantry and armored divisions work together with infantry leading, "there is little risk from successful enemy counterattacks on the infantry flank because the armored division is the most ideal weapon for counterattacking a counterattack."(100) Patton is suggesting that depth in the corps is another way to reduce risk to exposed flanks. His thinking in this vein at the army level is reflected in his conception for a one-army thrust into the Frankfurt-Kassel area. It will be recalled that his concept called for two corps to advance abreast and a third echeloned to the right rear. Hence, in Patton's opinion risk to flanks can be reduced by advancing in depth, quickly. At Avranches Patton held elements

FALAISE-ARGENTAN GAP




Map 4

of XII, XV, and XX Corps (one division each) on his left flank to guard against Fifth Panzer Army's counterattack. And although Patton believed the predicted German attack was a bluff, it turned out not to be and XX Corps' 35th Division became heavily engaged; but Third Army passed through Avranches without difficulty.

Patton's efforts to reduce risk to Third Army's right flank along the Loire River while his forces swept to the Moselle River (See Map 4) shows evidence of a more sophisticated approach to risk reduction. First, it is notable that Patton used the Loire River itself to protect his southern flank. Second, although he was reluctant to do so, Patton left 35th Infantry Division to cover his army's flank between Vitry and Chalons. Patton did not believe there were any significant German forces south of the Loire River, but he complied with Bradley's order to employ a division as flank guard for his army.(101) In fact, however, Patton's flank was exposed from LeMans to Nancy, France, some 400 kilometers. Hence, an infantry division was hardly adequate to cover Third Army's southern flank in any event. Patton supplemented his protection efforts by employing his cavalry groups along the Loire and making use of groups of Maquis, French guerrilla forces. A third and perhaps the most significant technique Patton used to protect his flanks was to rely heavily on XIX TAC. Several XIX TAC squadrons performed deep interdiction against key bridges and rail lines. Of more importance, however, were the air reconnaissance and air photography missions XIX TAC flew south

of the Loire River in support of Third Army. Patton's G-2 Section and XIX TAC worked out both an air reconnaissance and road and rail cutting plan in support of Third Army's sweep to the Moselle.(102) It is no wonder Patton was not terribly worried about his army's flanks: his G-2 was telling him that the German 64th Corps south of the Loire was in retreat from Seventh Army's advance up the Rhone Valley and could not affect Third Army's flank operationally. The evidence, then, indicates that in addition to speed of operations and depth, Patton thought that risk to flanks could be minimized by employing cavalry groups and by making extensive use of air reconnaissance and deep interdiction operations, as well as natural terrain obstacles such as riverlines.

Reserves

Patton's views on the acceptance of risk in the employment of operational reserves is more difficult to assess than his handling of flanks. This is so because he says very little about how he envisioned the employment of reserves. A convincing case can be made that he did not think much of the idea of retaining an operational reserve. A couple of examples illustrate Patton's inclination either to retain no reserve or to retain a very small one. During XX and XII Corps' 21 August attacks on Melun, Monteresy and Sens, France, Patton committed his entire force without retaining any reserve.(103) Patton recalls this action because he remembers not retaining a

reserve and again had to resist the urge to take counsel of his fears.

A second example, revealing in its own way, occurred just after the breakout through Avranches. Because of the speed of movement of Third Army and the diverging attacks its corps were making as they debouched from the Avranches area, a large hole in the American lines developed between St. Hilaire and Mayenne, France. Then a second gap opened up west of Alencon, and Patton remarks that all he could do was to assemble the 8th Armored Division at Fougères to fill this second gap.<104> What is significant is Patton's admission that he had to assemble a division, which clearly implies he had no such unit earmarked for just such a contingency. An identified reserve would have been able to move straight into the gap.

During the Bulge Campaign when MG Eddy of XII Corps became concerned about an attack into his flank, Patton sent Eddy his only army reserve--a company of tank destroyers!<105> The picture that emerges is one of Patton habitually operating with a small reserve or without one at all. Therefore, a tenet of Patton's was:

> Accept the operational risk entailed by a small reserve to get maximum combat power forward.

Evidence that Patton thought this principle applied operationally lies in his anger at SHAEF's decision to retain a reserve during the Bulge Campaign. Claiming that at that period of the war no reserve was needed, Patton insisted that violent "attacks everywhere with everything" with all available forces

would lead to success.(106) To keep higher headquarters from taking divisions from him for any reason, Patton and his staff exhorted corps commanders to get all their units decisively engaged. However, this should not be surprising, for Patton's very conception of operational art was that it consisted of a series of offensive actions designed to keep the enemy off balance. At the corps level this meant penetrating the enemy's line with the infantry and then exploiting with armor. In a sense, an armored division was a reserve unit in the corps for the purpose of protecting the infantry against a counterattack and exploiting a tactical success. In order to operate in that fashion, Patton had to spread his armored divisions around, retaining nothing at the army level for exploitation or counterattack. It is possible to see in Patton's decision not to retain a reserve at army level a willingness to accept an elevated operational risk while lowering the risk at the tactical level. Hence, Patton's dispersed armor, which could have provided him with an army level reserve, was employed tactically, placing most of Third Army's armored combat power forward and reducing tactical risk. Patton compensated for the increased operational risk by employing air and cavalry assets to survey and guard his army's flanks. His approach to risk reduction placed heavy reliance on his ability to flexibly assemble a reserve or flank protection element if long-range air reconnaissance indicated such a unit were needed; he counted on such reconnaissance to provide him with the critical time he needed to take defensive measures.

Logistical Sustainment

Like Heinz Guderian, George Patton did not spend much of his time considering logistical matters. And like Guderian, Patton's logistical neglect came to haunt him. One would never guess this to be the case, for Patton spoke only in glowing terms about his own logistical arrangements. He thought the system of administration in Third Army, for example, was excellent. The system that allowed administrative matters to pass from army to division, bypassing corps, was the way to do business since the corps was a tactical unit. He says that "[b]ecause of this arrangement we had perfect facility in shifting divisions without losing a moment's time. We never had to regroup, which seemed to be the chief form of amusement in the British armies."(107) Because logistics and replacements flowed from the Communications Zone (COMMZ) through field armies to divisions, field armies had a large role to play in logistical sustainment. In fact, by the time of the Lorraine Campaign Third Army had two quartermaster groups totalling sixty companies and two ordnance groups with eleven battalions between them to carry out its logistical responsibilities.(108) However, in spite of Patton's smug remark about British regroupment, there is little evidence that shows Patton personally had a firm understanding of the relationship between

the attainment of operational objectives and logistical capabilities, or spent much time investigating this relationship. The evidence available indicates he left most logistical matters in Third Army to his logisticians.

Patton gave his commanders little written guidance on logistical matters. Most of what he said was confined to broad generalizations such as: "supply rests on give and take equally," and "supply units must anticipate through reconnaissance the needs of users and get supplies up before they are called for."(109) Here Patton is displaying a measure of sophistication because although doctrinally the American logistical system in World War II was a "demand" system, Patton is almost suggesting a "push" system. The "demand" system in place when he began his sweep across France was able to supply his army with sufficient fuel, ammunition, and personnel in the initial phases of operations. Fuel, of course, was the class of supply in greatest demand as Third Army swept toward the Moselle River. To keep his army adequately supplied during these fast-moving operations, Patton relied mainly on 2-1/2 ton trucks. Patton claims that the successes of Third Army rested largely on two pieces of equipment. He says:

> The C-47 and the 2-1/2 ton truck did more to win this war than any other equipment we had. Third Army could not have executed its history-making sweeps and win its great victories without that plane and truck.(110)

There is evidence that Patton made great use of both the truck and the plane to keep his army supplied. His use of the airplane is, perhaps, overstated, but a few examples illustrate

his point.

Third Army first made use of air resupply on 21 August 1944 when 77 tons of rations were flown into the LeMans, France, area and 51 wounded soldiers were flown out. From 21 August on, Troop Carrier Command (TCC), which flew the C-47 missions in support of Patton's army, made it a practice to establish airstrips immediately behind forward battle lines to effect resupply. By 25 August, TCC had delivered 500 tons of supplies, employing 207 C-47 aircraft. In one day alone TCC flew in over 100,000 gallons of fuel to keep Patton's vehicles running.(111) Later, after Third Army had crossed the Rhine and was at the far end of its logistical tether, TCC was able to deliver what amounted to emergency fuel rations to Third Army. About that action Patton says that had it not been for TCC flying planes into the Limburg [Germany] airport at the rate of 60 aircraft an hour--each plane containing 115 five-gallon cans--Third Army would have run out of gasoline.(112) Colonel Robert Allen makes a much stronger statement about the role of air resupply in the European Theater of Operations. He contends that the war in Europe could not have been concluded in the Spring of 1945 had it not been for TCC's air resupply efforts. He says that the day after the 4th Armored Division attacked out of the Oppenheim bridgehead, for example, TCC carriers began delivering essential supplies to advanced units. On 29 March C-47s unloaded 435,000 gallons of gasoline; three days later TCC delivered 526,000 gallons. On return trips C-47s flew out over 19,000 casualties between 1-8 May 1945.('13) What is

interesting about these comments is that it appears that Patton had to make increasing use of air resupply the farther his army got away from the Normandy beachhead. And this is so because Patton's tactical and operational pace quickly outstripped his logistical capabilities. Consequently, he accepted logistical risk which had potentially disastrous results.

The great bulk of Third Army's logistics was transported not by air but by 2-1/2 ton truck. Stories about the Red Ball Express are familiar, and it is true that at its peak the Red Ball had some 6000 trucks operating day and night and performed monumental logistical feats. But as Patton learned, in the end even 6000 trucks operating night and day were not sufficient to keep his and the other field armies adequately supplied at his rate of advance across Europe. During pursuit operations after the breakout at Avranches, Third Army consumed 350,000 gallons of gasoline a day, and the trucks of the Red Ball themselves consumed 300,000 gallons a day. The province of Lorraine lies about 800 kilometers overland from the Normandy beachhead, a fact that neither SHAEF's nor Patton's logisticians were able to change, but which had more to say about the conduct of operations than Patton was willing to admit. For although there were sufficient stocks of gasoline in the Normandy beachhead, there were inadequate transportation assets to move that gasoline to users.(114) Consequently, when Patton's lead units finally came to a halt at the end of August 1944 because of a lack of fuel, only nine German infantry battalions, two artillery battalions, and ten tanks were defending in Lorraine.

By the time enough gasoline arrived to continue his offensive on 5 September, German units had reinforced Lorraine and were prepared to put up a stubborn defense.(115) Patton's violation of logistical principles caught up with him in Lorraine, for unlike the violation of tactical principles, the effect of neglecting logistical matters is cumulative in nature.(116)

In an effort to alleviate his gasoline shortage, Patton at various times used captured gasoline or hijacked gasoline from other allied armies, and relied on air resupply of gasoline, none of which ultimately solved the problem. He also switched more and more trucks in his army from ammunition transportation to gasoline transportation. Although this move somewhat improved the gasoline deficit in the short run, it had other deleterious effects in the long run. Switching transportation assets to the task of fuel resupply caused an acute shortage of heavy caliber artillery ammunition and precluded the building of stocks of Class V although the ammunition was available.(117) To help alleviate such shortages Patton resorted to rationing during the Lorraine Campaign. Third Army was so short of large caliber artillery ammunition that tanks and tank destroyers were surveyed in as artillery. In addition, Third Army made use of captured German ammunition. One XX Corps TOT was fired with captured German 105-mm howitzer, Russian made 76.2 mm guns, French 155-mm howitzers, and German 88-mm anti-tank guns; 80% of the artillery ammunition expended by XX Corps in the last week of October 1944 was German.(118) The clear point of these facts is that Patton seemed to be only

dimly aware that burning up gasoline reserves to keep his army moving and then neglecting ammunition stocks ultimately have their cumulative effects on operational capability. Finally, Third Army was forced to shift to railroads for transportation and local requisition for resupply because the Red Ball Express could not keep up with his army.(119)

Patton almost relishes telling the story about how his corps commanders invariably got into heated arguments over the location of corps boundaries.(120) The subject of those discussions was always the assignment of road nets within the army zone of action. Each corps commander wanted to make sure his corps got the road nets it needed to ensure his corps could be logistically supported. Similarly, Patton implies that army boundaries were determined in great part on the basis of major road and rail nets.(121) The speed with which French railroads were repaired and made operational helped alleviate Third Army's logistical shortages. Fortunately for Patton, the railroads in central and eastern France were not badly damaged and were left intact by the retreating Germans. Additionally, during October 1944 Third Army logistical units were able to establish supporting railheads as far forward as Nancy, France.(122) By April 1945, the bulk of Third Army's gasoline was transported by railroad tank cars from a continental pipeline ending at Thionville,France, to Mainz, Germany, where it was pumped across the Rhine River into tank trucks and transported to forward units.(123)

An examination of Patton's logistical operations suggests

that he neglected this vital aspect of operational art and brought on his command not only a great deal of anguish but also a reduced operational capability. Driving his tanks until they ran out of fuel, neglecting ammunition stocks, and diverting transportation assets all had their cumulative effects. In defense of Patton, it can be said that he tried desperately to defeat enemy forces operationally by pressing his offensive operations to and beyond their logistically supportable means. Patton did this because he believed that to "fill the unforgiving minute with sixty seconds worth of distance run" would in the long run save soldiers' lives. On reflection, it is a bitter irony that to capture the province of Lorraine, Third Army took three months to move 40-60 air miles and cost 50,000 casualties, one-third of the total casualties Third Army suffered in the whole European Theater of Operations.(124)

## Conclusions

Despite what has just been said about Patton's risk assessment and his attempts to reduce risk, Patton can rightly be acclaimed an able practitioner of the operational art. He was clearly an aggressive commander who thought that the whole of operational art was the offensive. Consequently, he exhorted all his commanders to attack all the time with all units under command to throw the enemy off balance and keep him there until

attacking units achieve operational depth and envelop the enemy. He appeared willing to divest himself of any sizable operational reserve in order to get maximum combat power forward at the tactical level, thereby trading off tactical for operational risk. For him, speed and timeliness of operations were the absolutely essential features of the successful operational commander. If success is measured only in terms of tactical or operational outcomes, without consideration of costs incurred to achieve those outcomes, then George Patton was clearly a success. Yet, it is doubtful that the preceding conditional is true, and an accurate evaluation of Patton as a practitioner of operational art must turn, at least in part, on the question of his means in waging war.

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# CHAPTER 4: CONCLUSION

## Part I: Operational Differences

Although the fundamental purpose of this thesis is to uncover any common tenets by which two successful practitioners of the operational art operated, there is utility in discovering how their operations were disimilar. Hence, before discussing tenets common to the operational methods of Guderian and Patton, a contrast between their methods is in order.

First, it is true that both Patton and Guderian believed in a combined arms concept but disagreed on the composition of combined arms organizations at the operational level of war. Guderian thought that a combined arms team built around the tank--the panzer division--was the appropriate instrument corps and group commanders should have at their disposal to achieve the operational decisions Guderian sought. Moreover, he believed such panzer divisions should be employed in heavy concentrations of corps-size units both to achieve tactical penetration and operational exploitation. Patton, on the other hand, envisioned a more balanced employment of armored divisions, which he obtained by dispersing his armored

divisions throughout his corps. Ostensibly, this gave each of his corps commanders the capability to exploit with armored forces tactical penetrations achieved by assigned infantry divisions. It is arguable that in doing this Patton traded the operational capability to exploit deeply with an armored corps for the capability to exploit tactically at the corps level. It also suggests that Patton's corps performed more of a tactical role than an operational role throughout his European operations. And since Patton seldom retained a sizable operational reserve at army, it is doubtful that Patton's approach to achieving operational decisiveness would have been effective against strong enemy resistance. Recall that his most successful campaigns--Falaise-Argentan, pursuit to the Seine, Palatinate--were waged against a retreating enemy whereas in both the Bulge and Lorraine Campaigns, in which the enemy defended staunchly, Patton's approach was both laborious and costly.

In art, the differences between Guderian's and Patton's approaches to combined arms warfare at the operational level can be attributed to doctrinal differences. When Patton assumed command of American combat forces, he inherited a doctrine that regarded the infantry division as an organization particularly well suited for tactical penetration and the armored division appropriate for exploitation. Moreover, there are historical, political, and geographical reasons to believe that America had no mature conception of operational art at the beginning of

World War II. In essence, American commanders entered the war with both a tactical and a strategic conception but no mature understanding about how to link tactics and strategy within a theater, precisely the function of operational art. Unlike Patton, Guderian entered the war not only with a doctrine of operational art but with an organizational structure with which to execute that doctrine. More than this, however, Guderian helped develop the doctrine and the panzer organizations needed to execute the doctrine, and he was instrumental in putting that doctrine into effect. Hence, it is no wonder that Guderian and Patton differed in their combined arms conception, though it remains both true and significant that they saw the need for a combined arms approach to operational art.

Second, whereas Guderian attacked with panzer corps on relatively narrow fronts, Patton attacked on broad fronts with his armor dispersed. Again, doctrinal differences help explain their different methods. What is significant is that both Patton and Guderian saw the value in seizing the initiative and in keeping the enemy off balance, but Patton's operations focused more on retaining the tactical initiative and Guderian's operations sought to retain operational initiative by striking in great depth with panzer corps. Additionally, in order to gain the tactical and operational surprise needed to seize the operational initiative and achieve the depth necessary for operational decisiveness, Guderian was willing to go to great lengths. In particular, he placed strong emphasis

on deception and secrecy gained through movement at night and on continuous operations once an attack started. Although Patton made some use of deception and night movement, he did not place much emphasis on either technique, remarking that it is better to halt two hours before dark, rest the soldiers, and attack before dawn. Moreover, he thought "night attacks by armor were not economical."(1)

A third point on which Patton's and Guderian's thinking apparently diverged was in the employment of the radio. Guderian saw great value in having a secure means of rapidly transmitting fragmentary orders to forward committed units. It was important for him to be able to affect tactical operations quickly because his technique placed great reliance on the success of tactical operations at the schwerpunkt, which had to change rapidly to reinforce success against points of least resistance. To do this, Guderian needed a rapid means of communication, and the radio provided just such a means. Perhaps because of his knowledge of Ultra and the attendant security risks associated with radio communications, Patton did not place much emphasis on the use of radio. Unlike Guderian, then, he preferred wire over radio and personal contact over wire.

Finally, while Guderian made special efforts to maintain momentum by avoiding forward passage through committed units and bypassing centers of resistance, Patton did not place much emphasis on either of these methods. In fact, Patton appeared

committed to the view that infantry divisions penetrate tactically or fix, and armored divisions pass through to exploit and pursue. Guderian, it will be recalled, employed panzer divisions in both the penetration and exploitation role, and did so because he believed the organic panzer-grenadier infantry in the panzer divisions could perform the task of penetration; moreover, he believed attacking mobile forces would lose momentum if they attempted to pass through less mobile infantry formations. It may be said of Patton that he did believe in bypassing enemy centers of resistance, as his objections to General Devers' efforts to reduce the Colmar Pocket attest.(2) Two responses, however, are in order here. First, such a view is inconsistent with Patton's decisions to take the cities of Nancy and Metz, operations which were costly and time consuming. Second, an underlying ulterior motive for Patton's objection to employing forces to reduce the Colmar Pocket was that some of the forces to reduce that pocket were to come from Patton's Third Army.

## Part II: Common Tenets

As significant as the differences in Patton's and Guderian's operations appear to be, to be fully appreciated they need to be viewed in a perspective that takes account of the similarities in their operations, especially the principled basis for their operational art. Indeed, Patton's and Guderian's operational art clearly shared a principled basis in six areas: centralized control of artillery; close cooperation of ground and air efforts; attacks to envelop or encircle the enemy at operational depths; execution of operations at high speed; acceptance of flank and logistical risk; and personal leadership at frontline units. Each of these similarities deserves some amplification, for even if similar in principle there were some differences in how Patton and Guderian applied each tenet.

Though they differed in the composition and doctrinal employment of combined arms units, both Patton and Guderian thought a combined arms approach to operational art is essential. In particular, they both thought that centralized control of artillery assets is crucial in executing operational art in the early stages of an operation when tactical penetration is the task at hand. After tactical penetration,

the requirement is for artillery to be decentralized so that exploiting and pursuing units can have artillery fire support immediately available. Consequently, the requirement both men sought was highly mobile artillery and a flexible system of artillery command and control that would allow artillery fires to be massed at critical points of penetration and then allow artillery units to move behind forward committed units and deliver immediately responsive fires in exploitation and pursuit operations. Guderian, more than Patton, tried to supplement organic artillery fire support by employing tactical aircraft in close support missions. The difference in their operations on this point is that Guderian apparently tried to achieve a higher degree of integration between ground and air units than Patton. But the requirement for concentrated artillery cannot be solved by a reliance on tactical aircraft for the obvious reason that air support is weather dependent. Hence, Patton's conduct of operational art depended on massed artillery, and lots of it. It is useful to recall that Patton's Third Army conducted its Bulge counter-offensive employing 108 battalions of field artillery, suggesting an artillery rich environment.

Second, both men saw great value in the establishment of a good working relationship between ground and air forces. Guderian formed a warm, personal relationship with the air commanders who supported his operations in all three of his major campaigns. Similarly, Patton spoke in glowing terms of

the cooperation and assistance XIX TAC rendered to Third Army throughout operations in Europe. Both Patton and Guderian knew that the success of their operations depended in large measure on the quantity and quality of air support given to their units. And both quantity and quality of support depended on the degree of cooperation and coordination extant between the two services.

Unmistakably, a third tenet common to the operational art of each man is reflected in their efforts to attack into operational depths of enemy defences and either envelop or encircle enemy forces. All of Guderian's operations indicate that he thought tactical penetration followed by rapid exploitation into enemy territory would precipitate an operational collapse within the enemy command and control structure. In both the Polish and Flanders Campaigns his thinking on this subject proved correct. In the Russian Campaign, in spite of the capture of whole armies and masses of equipment, his attacks into operational depths did not have the desired strategic effect. Failure in the Russian Campaign gives new meaning to "operational depth" and amplifies the importance of timing in the conduct of operational art. Guderian, remember, thought that Hitler's three-week delay of Operation BARBAROSSA and his three-week diversion of Guderian's Panzer Army from its final operational objective of Moscow proved fatal to the strategic aims of BARBAROSSA.

Patton, too, believed that success at the operational

level of war requires that tactical penetration be followed by rapid and unremitting pursuit operations until enemy forces are either encircled or enveloped and destroyed. Because he had trouble in finding a "Hoth" on the Allied side who would cooperate in putting together great encirclement operations, Patton relied on envelopment operations to achieve operational decision. Both the Falaise-Argentan and the Palatinate Campaigns are the best examples of Patton's style in this respect. To some extent, Patton was hampered in his execution of operational art because neither his subordinate commanders nor his superiors shared to any great degree his conception of how mobile armored warfare should be conducted to be decisive. Good men though they were, there is little evidence to suggest that Patton's corps commanders had a firm understanding of the requirements for operational success against German forces; the evidence shows that they had more tactical than operational acumen.

This discussion of operational depth and decisiveness raises an important consideration about both Patton's and Guderian's operational art that heretofore has been largely ignored or glossed over. If the operational level of war is defined as that level which employs tactical events linked together in a campaign plan to achieve theater strategic goals, then any judgment about the effectiveness of a commander's operational art must rest, at least in part, on how well his operational methods parlayed tactical events into desired

strategic results. The question raised is difficult to answer because to answer it intelligently other equally important questions must first be answered. The question, for example, presupposes a knowledge of the strategic theater objectives and what Clausewitz called "centers of gravity." There is probably general agreement that both Patton and Guderian saw the opposing enemy forces as the center of gravity, the immediate operational objective. Destroy enemy forces in large proportions and the enemy armies will collapse, forcing opposing political leaders to sue for peace. Patton clearly believed this, and Guderian's preoccupation with the seizure of Moscow notwithstanding, he too sought the destruction of enemy forces on a grand scale. His operations in Poland in 1939 and in France in 1940 appear to be classic examples of the appropriate linkage of tactical engagements in a campaign plan for the purpose of bringing about desired strategic results within a theater of operations. Similarly, Patton's operations in North Africa and on Sicily appeared to support the theater commander's strategic goals.

However, a plausible case can be made that both Guderian and Patton failed to measure up in an important way in their later campaigns. Both failed to understand that to be effective, operational campaign plans must be predicated on theater strategy; they have no life of their own! But Guderian's great operational "successes" in Russia appear to have taken on a life of their own, dragging the theater

commander's strategy after them. Certainly, this charge is true of Patton, who attacked so far and so fast across France that he outran 12th Army Group's and SHAEF's capability to support him. At every turn Patton attempted to turn a theater secondary effort into not only the primary theater effort but the ONLY theater effort! Both Bradley and Eisenhower had great difficulty reigning in Patton as he raced across Europe. Patton's scheme to attack straight toward Frankfurt with one army composed of three corps, for example, failed entirely to take account of Eisenhower's theater strategy with its myriad of political and logistical considerations. Analytically, strategic art gives shape to operational art, but in practice the dynamics are that one affects the other interactively, and the real challenge for operational level commanders is to keep their relationship in balance. As capable as both these men were, it is fair to say that neither had a firm enough understanding of the dynamics between operational and strategical art.

A fourth tenet Patton and Guderian share in their conception of how operational art should be conducted centers on speed of operations. Every bit of relevant evidence shows that both men thought a high tempo of operations is absolutely essential to success in the conduct of operational art. Because speed is a relational term, what both men really meant is that to be successful friendly commanders must execute operations at a speed relatively greater than the speed of the enemy's

operations. In Guderian's case, the classic example is his attack across the Meuse River and subsequent drive to the coast. In his book To Lose a Battle, Alistair Horne vividly describes not only the French High Command's but also the lower level tactical commanders' inability to act or react in a timely enough manner to stop Guderian's panzer drive. Similarly, Patton's high-speed dashes out of the Normandy beachhead, across France to the Seine River, through the Eifel, and across the Palatinate all kept opposing German forces in a perpetually reactive state trying to adjust to a new tactical situation rendered irrelevant by an even newer situation. Both men came to see that a high rate of operations steals the initiative from the enemy, forces him to react rather than deliberately act, and destroys his ability to focus combat power at a decisive point because his command and control system is in disarray. In essence, a relatively higher speed of operations serves to fragment the enemy's combat power and destroy his collective and individual will to fight. Guderian attempted to achieve a high tempo of operations, first, by tactically surprising the enemy through deceiving him as to the location, timing, composition, and direction of the attack. Then he exhorted his commanders to keep moving day and night, bypassing pockets of enemy resistance, and attacking to the point of exhaustion. Patton characteristically pitted one corps commander against the other, exhorting each to be the first to reach some objective such as a riverline. Each corps and

division commander attacked across a realtively broad front, employing multiple parallel axes to ensure maximum combat power was forward and minimal congestion occurred on axes of advance. Thus, despite some differences in technique, Patton and Guderian saw speed of operations as one of the key tenets of success in operational art.

A fifth tenet by which Patton and Guderian guided their conduct of operational art is reflected in each man's willingness to accept great flank and logistical risk in order to penetrate enemy defenses to operational depths. Concerning risk to exposed flanks, there is a great deal of evidence that both men were fully aware of the risk they were taking, and they employed air power, riverlines, cavalry units, and great speed of operations to minimize that risk. In fact, both men seemed to accept open flanks as quite a natural phenomenon in high-speed mobile operations and go the further step of regarding a non-linear line of contact as an opportunity to be exploited whenever possible. Since the open flank argument entails risks as well as opportunities, Guderian and Patton saw that it was imperative to have a clear operational objective or center of gravity identified, attack with sufficient mass, at great speed to produce the tactical and operational moral cascading effect that would lead to operational decisiveness. That, however, generally required that friendly forces attack in great depth and speed, exposing a friendly flank somewhere. Both men accepted exposed flanks as the price to be paid for

operational success.

It is more difficult to make a plausible case for either Guderian or Patton that would show they had a firm understanding of the relationship between operational capability and logistical feasibility. Although neither man had much to say about his own logistical operations, each was prone to stretch his logistical tether to its very limits. In spite of heavy reliance on trucks, railroads, and air resupply, each man, especially Patton, attacked so fast and so far that he exceeded the capability of his unit's logistical system to support his further operations. Consistently, the problem was not one of materiel shortage but one of transportation shortage. Moreover, a logistical pause inevitably occurred just when such a pause was least desirable. If such a pause is inevitable, then it may be that the outstanding operational commander is one who plans for and times a pause in operations so that it most benefits him and his command. Guderian appears to have been better at timing any such logistical pauses than Patton, if indeed Patton was even aware that such pauses need to be considered. Suffice it to say, by design or neglect, Patton and Guderian accepted increased logistical risk to achieve their operational objectives.

A final tenet both men clearly believed in and adhered to without fail was the principle of commanding or leading from forward locations. Patton and Guderian understood that there is no worthwhile substitute for the personal presence of the

commander, especially when a critical decision, event, or battle is taking place. Therefore, each man almost invariably turned up at some forward location at a crucial time and personally directed the action, got a stalled attack moving again, or when there were no reserves left, added weight to the main attack merely by being on site. To aid in controlling the large formations they commanded, both men operated out of a small mobile forward command post and made extensive use of a small plane to expedite their movement around the battlefield. Although Patton preferred wire communications over radio and Guderian made far greater use of secure radio than did Patton, both men communicated most of their combat orders in person at their subordinates' command posts. Finally, neither man was the least bit hesitant to give on-the-spot orders to committed combat units two echelons below their own level of command. Much to each man's credit, they both were careful always to inform any intermediate commanders concerned when directing the actions of a unit subordinate to that commander.

It is certainly possible to see in the operations of Patton and Guderian other aspects of their operations that bear similarity to some degree. In some instances the differences in their operations is one of emphasis more than anything else. Patton, for example, placed greater emphasis on receiving timely combat information and established a special mechanism--Colonel Fickett's information service--to ensure he got that information. There is nothing, of course, which shows

that Guderian was not interested in timely combat information, but it is equally true that he did not go to special lengths to get such information in the way Patton did.

What this thesis has endeavored to do is uncover those aspects of Patton's and Guderian's operational methods which appeal to a tenet or principle by which each man guided his thinking about the art of war at the operational level of command. The conclusion of this investigation can be summarized by stating that Guderian and Patton shared a view of operational art that held the following six tenets as key to success in the art of war at the operational level:

(1) Artillery needs to be organized and controlled in such a fashion that its fires can be concentrated rapidly and yet be flexible enough to move and shoot during fluid, mobile, high-speed operations.

(2) Success at the operational level of command demands that air and ground operations be closely coordinated and mutually supporting.

(3) Seek to conduct offensive operations that envelop or encircle enemy forces at operational depths.

(4) To be successful, operations must be conducted at great speed--relatively greater than the enemy's speed of operations.

(5) Success at the operational level requires that commanders be willing to take calculated flank and logistical risk; both the depth and speed of operations appear to require acceptance of these risks.

(6) Successful operational level commanders command and lead from forward locations, using their personal presence to influence the outcome of operations.

Having arrived at these conclusions about the nature of

Patton's and Guderian's operational art, it remains to explain why these findings are important to the American Army today.

## Part III: Implications for Airland Battle

It is arguable that at the beginning of World War II the American Army did not practice and had no doctrine for operational art, but did have a conception of strategy and tactics. Given America's political aversion to large, standing professional armies, her insular geographic position, and a historical tendency to rely on her economic strength to win wars, this is a plausible view to hold. For the development of an operational doctrine that envisions the maneuver of large military formations is only necessary in a theater of operations that has the requisite space across which to maneuver large formations. Prior to World War II the American Army had no such operational requirements to meet because it did not have world-wide commitments. Today the situation is quite different. As a matter of policy America now is committed to fighting a conventional or tactical nuclear war in Western Europe should the need arise. This fact implies two important considerations. First, the American Army needs a coherant well-developed doctrine for operational art that supports theater strategy in Europe, whatever that strategy may be. Airland Battle appears to be that doctrine, though it remains problematic because of the nature of the NATO Alliance and its requirement for a coalition theater strategy. Doctrinally, we

must get together with our allies if we are serious about winning a war against the Warsaw Pact in Western Europe. Second, to have a doctrine in print only is not to have a doctrine in the relevant sense. We must ensure that every stratum of our officer corps understands Airland Battle doctrine and can execute the part for which it is responsible, whether tactical or operational. Both of these considerations deserve amplification.

The requirement for a well-developed coherent doctrine is a tall order but not beyond reach. If the study of military history has any utility at all, it is that it helps illuminate what fundamentals of the art and science of war remain unchanged through time. Such studies help uncover the principled basis for the conduct of war and, hence, help establish the theoretical and doctrinal foundations for warfighting. This study of the operational art of Patton and Guderian contributes to that base of knowledge by making explicit some of the key tenets or principles by which these two commanders conducted operational art. Though the base of evidence is narrow because the study only focuses on two successful practioners of the operational art during a limited time period, in large part its conclusions are reflected in the operational doctrine of America's principal potential adversary and our own current doctrine as recorded in Field Manual 100-5.

In spite of some ever lingering branch parochialism in the American Army, doctrinally we are committed to fighting as a

combined arms team. However, it will never be sufficient merely to say we are committed to such a conception of warfare. For a complete combined arms conception at the operational level requires that air and ground operations be integrated in such a fashion that the maximum effect of joint operations be produced when and where needed. This point is especially important considering that the requirement in Western Europe and other theaters as well will be to fight outnumbered and win. Consequently, the lesson from Patton and Guderian is that commanders and staff officers at all levels must work conscientiously to achieve the high degree of cooperation and integration that service separateness, parochialism, budgetary fights, and poor leadership at the top frequently impede. More than this, however, we must strive to achieve this close working relationship NOW before America gets committed to a mid-to-high intensity conflict anywhere because the transition from peace to war is likely to be short in duration. In part, joint doctrine can aid in moving toward what is surely an ideal never to be fully realized.

This discussion leaves unanswered other questions which do not fall into the joint arena. How, for example, should US corps be configured for operations in Western Europe today? We take it as a given that they should be configured the way they are. Should corps be in the logistics business or should they be purely tactical headquarters? Is it plausible to think that, as currently organized, controlled, and logistically supported,

a US armored or mechanized division could move at the speed required to execute operational art as Guderian or Patton conducted it? A case can be made that both types of division have too large of an administrative and logistical overhead and too cumbersome a command and control apparatus to permit the sort of high-speed operations Guderian and Patton thought absolutely essential to success at the operational level of war.

An obvious response to these speculations is that what Guderian and Patton did in World War II is irrelevant today and will be too on tomorrow's battlefield. The substance of this claim is that technological conditions have changed remarkably since the time Patton and Guderian waged war, and their approach to operational art no longer applies. The integrated chemical/nuclear battlefield, for instance, renders a World War II approach to the conduct of operational art archaic. Alternatively, it may be maintained that high technology information and communication systems obviate the necessity for senior commanders to go forward to exercise command and control and to lead. The rejoinder to these arguments is that nothing could be further from the truth.

In the first place, there is an abundance of evidence which shows that future battlefields, even integrated chemical/nuclear/EW battlefields, will be remarkably similar to the battlefields on which Patton and Guderian fought. Operations will be fast-moving, fluid, and rapidly changing.

Exposed flanks are likely to be the normal condition, and frequently units will be cut off, temporarily encircled, and isolated. Confusion will likely reign, information will be intermittent, and units will be intermingled. These words describe nicely just the sort of conditions that prevailed during the 1973 Arab-Israeli War. But this description of the modern battlefield also sounds very much like the sort of battlefield across which Guderian swept in France in 1940, Russia in 1941 and Patton attacked in 1944. The nuclear and chemical dimension of the modern battlefield only amplifies the necessity for maintaining dispersion until concentration is required, and then rapidly concentrating for operational purposes. Hence, the requirement for speed of operations is even more important than it was in Guderian and Patton's day. Considering the emphasis the Soviets place on the speed of operations, the probability that high-tempo operations are essential for success at the operational level rises considerably.

Under such battlefield conditions against a numerically superior enemy, risk assessment and acceptance are all the more important. In order to win decisive engagements and major battles that are linked as parts of a campaign plan, commanders must be able to see ahead in time and space and be willing to accept at the right time calculated risks to their own forces. It may even be true that this thesis confirms what we have always intuitively known about successful operational art:

speed of operations, concentrated and integrated fires, enveloping maneuver, risk acceptance, depth in time and space, initiative retention, and personal leadership at the cutting edge are all absolutely essential ingredients for success at the operational level of war.

But even knowledge of the various ingredients in a recipe requires the further expertise and judgment to know when, where, and how much of each ingredient to mix to produce the desired result. A certain amount of boldness as well as refined military judgment is what is required at the operational level of command. Both Guderian and Patton exemplified boldness and a high degree of refined military judgment, which helps account for their successes in battle. It is also easy to appreciate in both men their warrior qualities. Each relished the thought of being at the critical juncture of a battle and took pains to be there. And there is much evidence which shows that Guderian and Patton developed their refined military judgment through a long-term process of growth and maturation that included self-education, a broad range of experiences, reflection, teaching, and intellectual self-discipline. A further utility to the study of military history, then, lies in the broadened perspective such a study affords the contemporary soldier, who must be prepared to deal with an uncertain future and on whose shoulders and conscience the burden of success falls when war begins. Airland Battle doctrine will likely come to nought if, when the time comes to live or die by the principles it

implies, we do not have warriors who can apply those principles to the circumstances at hand. If such heady sounding idealism is, in part, the stuff of which warriors like Heinz Guderian and George Patton are made, then we would do well to foster its growth by continuing to study these men and their operational methods.

## ENDNOTES

1 George S. Patton, Jr., War As I Knew It (Boston: Houghton Mifflin Company, 1947), p.335.

2 War As I Knew It, p.214.

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