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**Operational art and the German command system in World
War I**

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The Ohio State University, 1988

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OPERATIONAL ART AND THE GERMAN COMMAND SYSTEM IN WORLD WAR I

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of the Ohio State University

By

Bradley J. Meyer, B.A., M.A.

* * * * *

The Ohio State University

1988

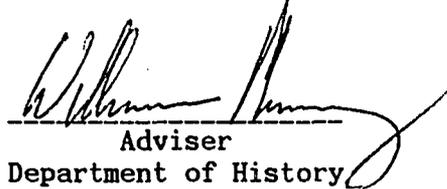
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INTRODUCTION

This work will make an argument of three steps. First, the German army in World War I had a highly developed concept of the level of warfare which it termed "operations." Second, there was a strong link between operations and certain German command practices: particularly the unusually powerful role of staff officers and the practice of giving generalized orders that allowed the subordinate a maximum of initiative. The Germans termed this practice *Weisungsfuehrung* or "leadership by directive." An important extension of the practice of *Weisungsfuehrung* was the practice, in extraordinary circumstances, of granting a subordinate *Vollmacht*. *Vollmacht* means "complete power" in German, in civil life it can mean "power of attorney." In English we convey a meaning very similar to *Vollmacht* we say someone has "*carte blanche* authority" to do something. In German military usage *Vollmacht* had a very specific meaning: giving a subordinate the right to issue directives (*Weisungen*) in the name of a superior officer.¹ Thirdly, those command practices developed to complement operations: a strong staff system, *Weisungsfuehrung*, and *Volmacht*, helped the German army with problems that lay outside the realm of operations. In particular,

these command practices helped the German army to develop new artillery tactics and new defensive tactics as the war went on.

Operations is simply the art of winning campaigns. As such, it constitutes a middle area between tactics, which concerns itself with winning battles, and strategy, which concerns itself with winning wars. Operations is not simply a convenient classification, however. In operations, different sorts of considerations matter than with tactics and strategy. The particular effects of different weapons practically determine the structure of tactics. As one ascends the scale of generalization in military affairs, the specific characteristics of weapons becomes a less important factor. But time and space considerations are still important in operations—where forces are and how quickly they can move. At the level of strategy, time and space factors lessen in importance. The strategist is more concerned with the overall balance of forces and political considerations (both foreign policy and domestic) which bear on winning the war. Military historian John Keegan summarized the importance of operations for the German army: as follows:

Even higher in the German army's scale of values ...stood the cultivation of 'operational' talent in their leaders. *Operativ* is an adjective which does not translate exactly into the English military vocabulary. Lying somewhere between 'strategic' and 'tactical', it describes the process of transforming paper plans into battlefield practice, against the tactical pressures of time which the strategist does not know, and has been regarded by the German army as the most difficult of the commander's arts since it

was isolated by the great von Moltke in the 1860s. Taught, in so far as it can be taught, in his famous staff college courses, its traits were eagerly looked for in the performance of general staff candidates and its manifestation in practice, in wartime, was rewarded by swift promotion.²

"The art of winning campaigns" is the standard definition of operations. Graf Helmuth von Moltke, Chief of the German General Staff 1858-1888 ("the elder Moltke"), had a system of operations, a general concept of how he wanted operations to go apart from the accidents of particular dispositions of forces, the terrain, and so on. Then von Moltke would adopt his general scheme to the particulars of a given situation. But Moltke founded his system of operations on quite concrete aspects of the military environment in which he operated.

For instance, von Moltke operated in an age of increased firepower, which made the tactical defensive very strong. Therefore, the strength of the tactical defense became an element of his system of operations. Von Moltke built much of his system around the necessity of avoiding frontal attacks on his enemies in so far as possible. Instead he tried for flank attacks. At the same time, Moltke recognized that the strength of the tactical defense made isolated portions of his own forces relatively less vulnerable to enemy attacks. Therefore he could afford to maneuver his own forces more boldly--while he was seeking for an opportunity to flank the enemy forces. Increased strength of the

tactical defensive could work for the attacker as well as the defender.³

In his book The German Army, Herbert Rosinski gives an excellent synopsis of Moltke's operational system. It is well worth working through that synopsis in some detail here. The increase in the strength of the tactical defensive mentioned above led Moltke to "offset the firepower of his opponent by concentrating superior firepower and general tactical pressure by a converging attack on front and flank."⁴ Moltke would avoid purely frontal assault, in other words. But the enemy would most likely discover a flanking movement initiated when the armies were already in contact. It is easy to react to a flanking attack discovered in time--bending back one's own flank will usually do it, not to mention schemes to trap and destroy the flanking force. Therefore, Moltke realized that his flanking attacks would have to come from beyond the enemy's reconnaissance zone. They would have to come from widely separated forces converging on the battlefield. Another way to put it is that flank attacks on a tactical scale of time and distance (ie., flanking attempts on the scale of the battlefield) would not work, but flanking movements on an operational scale of time and distance (ie., flanking attempts worked into the scheme of the campaign) might work.

The increased strength of the tactical defensive would in turn protect these widely separated converging forces from enemy

counteraction. If the enemy did catch one of Moltke's flanking units, chances were that unit could maintain itself until help arrived. Moltke also expected improved communications (chiefly the telegraph⁴) and a superior general staff to help him coordinate the movements of his widely separated elements. Again we see concrete elements of the military environment--improved communications and an improved general staff--becoming part of Moltke's general solution of the operational problem.

The increased strength of the tactical defensive also meant that pursuit after the battle became more difficult. The enemy rearguards, which always attempted to impede the pursuit, would be stronger than previously. This phenomena put even more of a premium on converging rather than frontal attacks.⁵

At the same time, the difficulty of swiftly achieving a decisive victory made for the increased significance of the "exterior lines" and tended to vitiate the advantage that "interior lines" had conferred in the Napoleonic campaigns. Where Napoleon had been able to act on the assumption that an army of 100,000 men--particularly under his leadership--in the midst of two others of 60,000 each, could successively defeat and destroy them in detail, by the time of Moltke the probability had become that it would be caught and defeated between the two before it could eliminate either of them.⁶

In military parlance, interior lines are those which lie along the inside portion of an arc, whereas exterior lines are those which lie along the outside portion of an arc. The side which occupies the interior lines can move across the interior of

the arc to concentrate its forces, whereas the side deployed along exterior lines must move around the outer circumference of the arc. According to military tradition, the army operating along interior lines has an advantage.

Railroads and improved marching techniques (marching the army corps by parallel roads, rather than stringing them out like a long snake on a single road) made rapid deployments on exterior lines easier to achieve. Here we see again the importance of concrete elements in the military environment. Moltke's general operational system made rapid deployments along exterior lines desirable. Moltke's recipe for victory,⁷ then, involved rapid deployment along exterior lines, exploiting railroad movement. The different parts of the army would then advance on the enemy, who would most likely concentrate in the old fashion. Then Moltke could fix the enemy frontally with the first parts of his force that reached the enemy, as he coordinated the movement of the still separated portions of his forces onto the enemy flank. If the enemy advanced to try and destroy one of the converging elements, that element could most likely maintain itself (meanwhile fixing the enemy frontally), while the unengaged forces maneuvered for the enemy flank.

That was von Moltke's general operational scheme, played out as if Europe were a smooth plain and the movements of the enemy were predictable. That was not the case, of course. There were

rivers and mountains as obstacles to movement, a transportation net of varying capacity in different areas. The enemy would move and react. Intelligence concerning those movements would vary in quality. Moltke's own forces would make mistakes. There were the outcomes of battles, always somewhat unpredictable. Moltke had to adapt to these particularities, and he did. But he made those adaptations in light of his general conception of how to win a campaign. He had solved "the operational problem" (whose existence he had first explicitly recognized) for the military environment of his day. Accordingly his operations were something more than an art, if something less than a science.⁸

The weakness of Moltke's system was the coordination of the movements of the widely separated forces, so vital to success. The problem was not simply the limitations of the communications means of the day--telegraph and couriers. Moltke was not the commander-in-chief of the German army, just its chief of staff. He could not necessarily count on the obedience of the senior generals of the Prussian army and "their ambitious chiefs of staff," as Rosinski puts it.⁹ Accordingly Moltke organized his campaigns through the use of general directives to subordinates. These general directives conveyed his operational plans to subordinates, he then relied on their initiative and good staff work to accomplish his objectives.¹⁰ This was the practical origin of the

practice of "leadership by directive" (*Weisungsfuehrung*) in the German army.

Moltke did not invent operations. Successful generals had always known about the operational level of war, just as good billiards players know physics, even if they cannot recite Newton's three laws of motion. The difference was that Moltke had solved the problem of winning a campaign in a conceptual fashion. He then proved perfectly capable of adapting his system to a real enemy operating on real terrain.

Moltke's ability to solve the operational problem in a generalized sense casts a telling light on the store of pithy aphorisms that generally pass for military wisdom. "March separated, fight united." "Exploit interior lines," and so on. Moltke's achievement shows up this collection of sayings for what they are: fragments of an operational system which had probably worked at one time, but fragments most likely now out of context. Take the question of when to unite the army. The armies of Frederick the Great had sought always to remain united. That was appropriate to the military environment of the day. Napoleon had sought to move his forces divided, then unite just before the battle. That was appropriate for Napoleon's day. Moltke sought to unite his forces during the battle. The difference is that Moltke knew how the different parts of his system fit together.

His system did not simply evolve over time, nor was it the idiosyncratic work of an inspired genius.

One of the virtues of Moltke's approach was that it could be taught, within limits. After his successful campaigns, Moltke devoted the rest of his life to the establishment of the German General Staff as an institution for the serious study of operational art and the training of its future practitioners. Serious original thought about operations continued in the German General Staff after Moltke's death, although it did not quite attain the level of the founding genius.

Take for instance the career of Graf Schlieffen, Chief of the German General Staff from 1890-1906. In general, Moltke's system greatly impressed Schlieffen, and he saw his main task in its transmission to a new generation of staff officers.¹¹ But the military environment continued to change in Schlieffen's day, and Schlieffen's military thought reacted to the changes. For one thing, firepower continued to increase. As firepower increases, it takes ever fewer troops to cover a given length of front with impenetrable fire. At the same time, the size of armies grew enormously in comparison to those which the elder Moltke had led. The combination of bigger armies, with fewer and fewer troops required to cover a given length of front, meant that the fronts of deployed armies grew ever larger. Armies with longer fronts were inherently harder to flank. The flanking force had to move

in an arc that was ever longer in length, in order to get around an army whose front might well now be hundreds of kilometers in length. By the turn of the century it was clear movements of hundreds of kilometers were not out of the question.

Consideration of these factors caused Schlieffen to extend Moltke's principle of attack on the enemy's front and flank. Schlieffen decided that only attacks on the flanks and rear of the enemy could be truly decisive.¹² But obviously it is harder to strike the enemy's flank and rear than to strike the front and flank. The enemy reacts, the enemy can maneuver. The front is the easiest part of the enemy's force to get at, not the flanks and certainly not the rear. Then again, attempting to flank the enemy inevitably means exposing one's own force. Just the same, flank attacks have always been the bread and butter move of military strategy. In Napoleon's day, it was still possible to attempt a flanking action within sight of the enemy. Moltke had to make such flanking attempts on an operational scale: ie., work them into his plan of campaign. Schlieffen's attempt to bypass the front altogether meant he had to contemplate maneuvers on a practically strategic scale.

The end result of this process was, of course, the famous Schlieffen Plan: a march through Belgium, practically sidestepping the French army deployed along the Franco-Belgian border, in order to swallow up Paris and attack the French army in flank and rear,

eventually driving it against the Swiss border and its own fortifications. The Schlieffen Plan has a certain hysterical quality. Military art was in fact in a state of crisis. The only way to overcome the effects of defensive firepower was to make flank and rear attacks, but increasing firepower and larger armies made flank and rear attacks ever more difficult to achieve.

With the increasing difficulty of achieving that shattering attack against the enemy's flank and rear upon which he relied, Schlieffen saw himself forced to stress his strategy of annihilation until it finally reached the point of attempting the complete destruction of the enemy's forces in one gigantic operation. By the Schlieffen Plan's encirclement, he not only hoped to achieve that decisive blow in flank and rear but to deprive his opponents in advance of any power to develop their initiative, of any possibility of staging an effective riposte.¹³

When the Germans finally tried to execute a version of the Schlieffen Plan (modified by Helmuth von Moltke the Younger, the Chief of the General Staff, 1906-1914) in 1914, the fronts of the French and German armies already took up about half of the available geographical frontage from Switzerland to the North Sea. At the crisis of the campaign, during the Battle of the Marne, the lines stretched from the Swiss border to the area of Paris. After the Battle of the Marne, both sides extended their front towards the North Sea, partly by extending their existing fronts, partly with the help of newly mobilized reinforcements. This was the "Race to the Sea." When it was over, the opposing armies stood locked in continuous fortified lines running from the Swiss border

to the North Sea. There were no longer any flanks to go around. Both sides now faced a problem they had evaded for over 40 years by the expedient of planning to go around a flank, using operational movement. To win the war by some means other than exhaustion, armies were going to have to figure out how to achieve a tactical breakthrough on a strongly defended front.

It took the German army three and a half years to do this, from autumn 1914 to spring 1918. In the process, Moltke's writings on a war of movement were of little help. But the institutions and practices he set up to help him achieve his attacks on the front and flanks, chiefly leadership by directive and a strong general staff, played a critical role in the adjustments the German army had to make.

--- Notes ---

1. Reichsarchiv, Der Weltkrieg, 1914-1918, vol. 3 (Berlin, E. S. Mittler & Sohn, 1926), p. 285. See the more extensive discussion of this point in Chapter 5.

2. John Keegan, Six Armies in Normandy: From D-Day to the Liberation of Paris, June 6th--August 25th, 1944 (New York: The Viking Press, 1982), p. 243.

3. Herbert Rosinski, The German Army, edited and with an introduction by Gordon A. Craig (New York, Frederick A. Praeger, 1966), p. 119-120.

4. Ibid., p. 120.

5. Ibid.

6. Ibid., p. 120-121.

7. Rosinski would object to the term "recipe for victory," stating as he does that the secret of Moltke's success did not lie in "advance from widely different fronts ... or in any other form or method, but in the sovereign calm with which he let the situation approach him..." and so on. It is true that Moltke was flexible in the application of his system. But as Rosinski himself makes clear, he did have a system, an understanding of the general military problem of winning campaigns in his own era, and a general solution for that problem. See Ibid., p. 120.

8. The book Fleet Tactics, by Wayne Hughes, shows how concrete elements of tactics, weaponry, communications, scouting and so on influenced some fairly generalized (ie., "operational") questions of naval warfare, such as whether the fleet should fight united or divided. Hughes book, even though it deals with war at sea, was an inspiration to the author in deriving the above interpretation of von Moltke's military system. See Wayne P. Hughes, Jr., Fleet Tactics: Theory and Practice (Annapolis, Naval Institute Press, 1986), *passim*.

9. Ibid., p. 122-123.

10. Ibid.

11. Ibid., p. 124.
12. Ibid., p. 125.
13. Ibid., p. 128-129.

CHAPTER I

THE INSTITUTIONAL ROLE AND HISTORY OF THE GERMAN GENERAL STAFF

As a rule, the General Staff either made or advised on the making of all operational decisions in the German army. Indeed, this was almost the sole function of the German General Staff, its *raison d'etre*. Everything else the General Staff did¹ was either auxiliary to its primary role in operational decision-making or of a completely ancillary nature. For instance the General Staff prepared the detailed mobilization plans for the German army--but the elder von Moltke's wars had shown that in a modern war the initial deployment might well determine the course of the campaign. The General Staff also ran the map-making agency for Imperial Germany, but good maps were clearly a necessity for military decision making.

The German General Staff was not a large organization. It was an enclosed elite within the army (complete with distinctive uniform markings: the famed wine-red stripe down the trousers). In 1914, out of about 29,000 officers in the German army, there were only about 622 General Staff officers, or a little over 2% of the total. Of this total, only 352 officers were permanent members of the General Staff, the rest being attached to the General Staff for specific purposes.²

Strictly speaking, there was no "German General Staff," only the Prussian, Saxon, Bavarian and Wuerttembergish General Staffs. As a practical matter, however, the Prussian General Staff performed all the essential functions of a "German General Staff," so there is no reason to depart from the commonly used terminology. After 1871, out of the multitudinous armies which had once populated the area which became the German Reich, only four survived with an independent existence of any kind. The Prussian army absorbed the others. Apart from the Prussian army itself, only the Bavarian, Saxon, and Wuerttembergish military forces maintained some independence. That of the Bavarian army was by far the most substantial. The King of Bavaria retained command authority over the Bavarian army in peacetime, as well as administrative control through the Bavarian War Ministry. The German Kaiser (who was also the King of Prussia), however, had the right to inspect the Bavarian army in peacetime.³ In Saxony, the Saxon War Ministry administered the Saxon army, and there was a separate Saxon officer corps. But the German Kaiser exercised command over the Saxon army in peacetime. Wuerttemberg had a war ministry with certain administrative powers over the royal Wuerttemberg Corps, but did not have an officer corps separate from the Prussian. In wartime, all the different contingents came under the command of the German Kaiser. The non-Prussian contingents of the imperial German army in any case amounted to

only about 20% of the total. Out of 25 active duty army corps in 1914, Wuerttemberg provided one, Saxony two, and Bavaria three.⁴

Prussia, Bavaria, Saxony, and Wuerttemberg each had a General Staff, but only the Prussian General Staff prepared the strategic and operational plans according to which all the German contingents would fight in the event of a war. Bavaria was the only state, apart from Prussia, which ran its own war academy for the training of general staff officers. Since Bavaria retained command and administrative powers over its forces in peacetime, the Bavarian General Staff did have an independent function. Even in the case of the independent Bavarian General Staff, a constant exchange of officers and information ensured a unity of outlook between the Prussian and Bavarian General Staffs.⁵ Staff officers from Wuerttemberg and Saxony attended the Prussian War Academy and served with the central office of the Prussian General Staff (*Grosser Generalstab*), when they were not serving with the staff of the Wuerttembergish or Saxon units.⁶ Considering that on the outbreak of war the Prussian General Staff became completely dominant, to all intents and purposes the Prussian General Staff was the German General Staff.

When one speaks of the German General Staff, one must first consider the position of the Chief of the General Staff in the German military system, for the General Staff was an instrument of the Chief of the General Staff. First and foremost, "The Chief of

the General Staff was the immediate advisor of the Kaiser in all questions of strategic and operational war preparations of the land armed forces."⁷ In wartime, the Kaiser would nominate the Chief of the General Staff to direct the armies of the Reich, acting in the Kaiser's name. This was a settled expectation after the German wars of unification. This immediate relationship to the sovereign was the personal achievement of the elder von Moltke. In Prussia before his time, the Chief of the General Staff had been a subordinate of the War Minister. This was the rule in every other European state, as it was also in Bavaria right through the end in 1918.⁸ In this as in other important respects, the modern German General Staff was the particular creation of the elder von Moltke.

The elder von Moltke's direct access to the political leadership (which included the Chancellor) was originally a matter of his personal standing, not a matter of rule. Nevertheless, in 1883 Kaiser Wilhelm I (Wilhelm II's grandfather) officially extended to the Chief of the General Staff (then still the elder von Moltke) the right of direct access to the throne (*Immediatvortrag*). This action extended to the elder von Moltke's successors, whoever they might be, the right of immediate access to the throne.⁹

In the Prussian army prior to the First World War, the right of direct access to the throne was no great honor. Practically

all the higher ranking generals of the army had this right, some 40 in all. Traditionally, the monarchs of Prussia had exercised a direct and personal control over their army, and the *Immediatvortrag* system had already achieved considerable extent under Kaiser Wilhelm I. Under his grandson (and practically immediate successor), Wilhelm II, the number of army positions reporting directly to the throne approximately doubled. Wilhelm II was no believer in a limited span of control (in the sense of having relatively few subordinates report directly to him) and liked to have his hand in everything that interested him, particularly military matters.

One should not imagine that this system did not produce frequent friction and clashes over spheres of competence. There was, however, a great practical difference in the weight of the various army commands with the right of immediate access to the Kaiser. While literally every army corps commander could have access to the Kaiser upon request, in practice only the War Minister, the Chief of the General Staff, and the Chief of the Military Cabinet actually met with the Kaiser on a regular schedule. The other positions would only request an audience in special cases. In wartime, the Chief of the General Staff would stand out above even the War Minister and the Chief of the Military Cabinet. According to the standing mobilization decrees, on the outbreak of war to the Chief of the General Staff would

direct the German field army, acting in the name of the Kaiser.¹⁰ Thus, in effect, the Chief of the General Staff would command the German army in wartime, as the elder von Moltke had in effect commanded the German army during the Austro-Prussian and Franco-Prussian wars.

In peacetime, the Chief of the General Staff was responsible for planning the employment of the German army in wartime. This was primarily a matter of preparing the the German army's operational plans for possible campaigns (ie., how to conduct the campaign, in outline) and the plans for deployment or strategic concentration (*Aufmarsch*) prior to those campaigns (the War Ministry worked out the mobilization plan *per se* (ie., assembling units at their depots)), but the General Staff prepared plans for moving the troops once assembled to the campaign theater. This was primarily a matter of planning railway movements).¹¹ Of course, the Chief of the General Staff's staff, which was the *Grosser Generalstab*, would work out most of the details.

The Chief of the General Staff, in peacetime, had no power whatever to command troops, and also no right to inspect troops. Indeed, the Chief of the General Staff was only likely to come into contact with troops at all during the annual Kaiser maneuvers, which he and his staff planned and directed.¹² The Chief of the General Staff was not responsible for training of troops, for procurement of new weapons, for feeding, paying and

equipping the troops, or even for writing field regulations. All such administrative matters were the responsibility of the War Ministry.¹³ With no powers of command and no administrative duties in peacetime, the Chief of the General Staff could concentrate almost exclusively on planning for future wars.

The Chief of the General Staff did control the General Staff itself. He directed the *Grosser Generalstab* and was its disciplinary chief. As such he controlled assignments within the General Staff itself, through the "Central Department" of the *Grosser Generalstab*. The Chief of the General Staff or his delegates wrote the efficiency reports for officers serving on the *Grosser Generalstab*. He remained the superior of General Staff officers posted to the *Truppengeneralstab* (General Staff officers serving on the staff of troop units), although only insofar as professional (ie., General Staff) matters were concerned. For other matters *Truppengeneralstab* officers were subordinate to the unit commanders they worked for.¹⁴ Both the unit commander and the Chief of the General Staff wrote efficiency reports for *Truppengeneralstab* officers. In addition, for matters relating to General Staff work, a *Truppengeneralstab* officer could report to the next superior General Staff officer or to the Chief of the General Staff himself.¹⁵ The German army term for this form of legal insubordination was "staff channels."

The effect of these arrangements was to insulate the General Staff and its officers from attacks from other parts of the army. One should not imagine that a select caste of officers like the General Staff, favored for promotion, met with uniform approval from other officers. The Chief of the General Staff recommended or failed to recommend the officers of the General Staff for promotion, just as with ordinary officers the commander of the regiment recommended for promotion.¹⁶ There is no better way to control the behavior of an ambitious (or even not so ambitious) officer than to manipulate chances of promotion. It was clear to everyone in the system that for purposes of promotion General Staff officers had only one master to serve: the Chief of the General Staff. Even if a line commander wanted to "get" a subordinate General Staff officer serving on a *Truppengeneralstab* assignment, the most he could do was to write a poor efficiency report, which the report of the Chief of the General Staff's [or that of the next higher General Staff officer in the chain of command] could balance out. In any case, it was the Chief of the General Staff and not the unit commander who recommended for promotion.

In the Prussian army, the Military Cabinet decided on all matters relating to the promotion and posting of officers, as well as a variety of matters that concerned individual officers directly (pay, decorations, etc.) The Military Cabinet was an

independent agency which also reported directly to the Kaiser. Therefore the Chief of the General Staff's recommendations for promotion of his General Staff officers were in fact just that-- recommendations. One may assume, however, that normally the Military Cabinet would follow the Chief of the General Staff's recommendations (just as it would normally follow the recommendations of a regimental commander) and that the Chief of the General Staff could make or break the careers of General Staff officers. For the promotion of other officers, however, including the higher-ranking generals who would presumably carry out his orders if war came, the Chief of the General Staff had little influence. For one thing, he had no access to the efficiency reports of the officers involved, unless they were General Staff officers. Posting of officers to the General Staff in the first place also required the approval of the Military Cabinet, although it usually followed the Chief of the General Staff's wishes in such cases.¹⁷

The Chief of the General Staff also controlled the Prussian War Academy, an important role since most officers destined for higher command would pass through the War Academy. The top graduates of the War Academy could enter the ranks of the General Staff itself, if they successfully completed a two-year probationary period at the *Grosser Generalstab*.¹⁸

THE GROSSER GENERALSTAB

The *Grosser Generalstab* in Berlin was "the working staff of the Chief of the General Staff of the Army."¹⁹ The term "Great General Staff" therefore does not refer to the German General Staff as a whole, but only to its central office in Berlin. One might note that *Grosser Generalstab* does not translate well into English. The literal translation "Great General Staff" conveys an imputation of high quality or "greatness" in modern English. While the German General Staff was not incapable of exalting itself, it did not actually do so in the name of one of its larger component parts. *Grosser* in German primarily means large or big. The archaic sense of "great" in English also means large, and if one thinks of "Great General Staff" in that sense one gets the right flavor. "Large General Staff" would be a better literal translation of *Grosser Generalstab*, into modern English, but this work will stick with established terminology.

The Great General Staff had its place of business in a large red brick building at the Koenigplatz in Berlin—opposite the Reichstag building, ironically enough. In this building, several hundred officers either worked on Germany's deployment and operational plans for future wars, pursued activities which supported this planning function, or helped develop the sense of the art of war at the operational level in General Staff officers junior and senior. The Great General Staff was a sort of a think

tank for the German army for the problems of operational planning for future war. The easiest way to get a general grasp of what the Great General Staff did is to look at its internal divisions and the functions of the major parts. The organization of the Great General Staff in 1914 follows.

The Chief of the Great Generalstaff

Oberquartiermeister I

--2nd (German) department--Deployment-[*Aufmarsch*] and Operations
Department

--Railroad Department

--4th Department (foreign fortresses)

--Section Ia (for the revision of Military Transport regulations)

Oberquartiermeister II

--3rd Department (France with Morocco, England with Egypt,
Afghanistan)

--9th Department (Italy, Belgium, Switzerland, Holland, Spain,
Portugal, America, German colonies)

Oberquartiermeister III

--5th Department (Operational Studies)

--8th Department (War Academy and General Staff service)

Oberquartiermeister IV

--1st Department (Russia, Nordic States, East Asia, Persia,
Turkey)

--10th Department (Austria-Hungary and the Balkan States)

Oberquartiermeister V

--War History [*Kriegsgeschichte*] Department I (more recent wars)

--Archive

--Library

Chief of the National Survey

--Trigonometric Department

--Topographical Department

--Cartographic Department

--Photogrammetry

--Colonial Section

Immediately Subordinate to the Chief of the the Great General Staff

--Central Department (Personnel matters of the General Staff, Organization and Administrative matters) with Section IIIb (Press office)

--6th Department (Maneuvers)

--War History Department II (less recent war history)²⁰

The 2nd (German) Department of the Great General Staff played a leading role, for it actually devised the deployment and operational plans (the latter in outline) for use in a future war.²¹ This was the field of military operations *per se*, the mastery of which was the central obsession of the General Staff. The movement of troops to the borders, their areas of concentration, their routes of march—all offered endless

opportunities for confusion and delay, but also endless opportunities to gain an advantage over the enemy. The factors of space and time inherent in the movement of large bodies of troops would operate even before the opposing forces came into contact, in other words, and advantages of position gained during this phase might well determine the outcome of the ensuing combat. The Wars of Unification had shown that the initial deployment, the initial approach march, could well decide the entire course of a campaign. The 2nd Department performed the real work of the Great General Staff, with the other departments and sections performing important supporting roles.

The Railway Department played a particularly important role, for it worked out the movements of troops and supplies in the event of mobilization and deployment. Drawing up the railway schedule to move the entire mobilized German army rapidly to the deployment areas required a vast amount of detail work. Accordingly, the Railway Department had a greater personnel strength than any of the other divisions of the Great General Staff. The 4th Department, also in *Oberquartiermeister I*, studied foreign fortresses, which constituted important obstacles to any plan for an offensive beyond the borders of Germany.

Four departments of the Great General Staff studied the armies of foreign powers, seeking to learn as much as possible about the military potential, army strength and organization, and

operating procedures of Germany's potential enemies. This was mainly a matter of collating press reports and those of the German military attaches, most of whom were General Staff officers.²² Thus the Great General Staff was also the intelligence service of the German army. Such intelligence obviously had some bearing on the main preoccupation of the Great General Staff: drawing up operational plans.

Every year the intelligence departments of the Great General Staff drew up a massive reference work on the major European countries, dealing with numerous areas of possible military significance (The railway net of a given country would be of particular interest, for instance.) The Great General Staff freely published the index of these studies from 1869-1883, holding them secret thereafter. Spenser Wilkinson commented on the significance of these studies as follows:

It is therefore not a matter of surprise that in 1866 the chief of the Prussian general staff was well informed concerning the position and condition of every part of the Austrian army up to the time when the special preparations of the war began; was able to gauge very fairly the time that would be required for its mobilization and transport, and knew perhaps as well as any one in Austria the difficulties in which that empire would be placed by an effort to continue the struggle. A still more complete knowledge of the adversary's military and other resources was revealed by the German general staff at the opening of the campaign of 1870.²³

A number of departments concerned themselves with either the study of operational art or the training of General Staff officers

therein. There were two departments to study war history [*Kriegsgeschichte*, which is to say military history written from a "purely military point of view"], with associated library and archive. There was a department to perform operational studies, and a department to run the War Academy. Nor were these departments considered unimportant by the Chief of the the General Staff. The elder von Moltke had taken war historical studies very seriously, often writing them himself. After his retirement from the General Staff, Schlieffen turned to writing historical studies to support his theory of battles of encirclement.²⁴

The German General Staff made a great effort to develop the operational abilities of its officers throughout the course of their careers. This training began but did not end at the War Academy. The intervals of service on the Great General Staff were no exception, regardless of the employment of its officers on a variety of demanding tasks of great practical importance. For the top graduates of the War Academy, one to two years of probationary service on the Great General Staff was the final hurdle to full membership in the General Staff. Only after its successful completion and with the approbation of their superiors could they don the three wine-red trouser stripes and wine red collar flashings of the General Staff, and sign "i. G." after their names (for "*im Generalstab*"--"in the General Staff").²⁵

For all officers on the Great General Staff, the Chief of the General Staff supervised a variety of exercises designed to develop operational ability. There was a constant round of tactical and operational problems, terrain rides, and war games. Twice a year the Chief of the General Staff personally led extensive general staff rides,²⁶ which involved traversing an extensive stretch of countryside while constantly applying a variety of hypothetical operational problems to the terrain at hand, for the elucidation of the accompanying officers.

The 6th Department planned the annual Kaiser maneuvers, which were the only opportunity for General Staff officers to get real experience controlling large bodies of troops in peacetime.²⁷ The Kaiser maneuvers were held in the autumn, after the crops were in (this kept maneuver damages to farmer's fields to a minimum), and involved large fractions of the German army. The younger Moltke had done much during his time as Chief of the General Staff to make these maneuvers more realistic, even to the extent of abolishing the archaic massed cavalry charges Kaiser Wilhelm II so greatly loved.²⁸ On the other hand, shortly before the First World War, the Great General Staff had to stop giving out its discussions of the generalship displayed in the annual Kaiser maneuvers, which often were sharply critical. The generals of the German army did not like sharp criticism, even if it came from the staff of the their presumptive future *de facto* commander-in-chief.

This is indicative of the somewhat limited power of the General Staff in peacetime.²⁹

The sections of the Great General Staff under the Chief of the National Survey were responsible, in cooperation with civil authorities, for survey of German territory and map-making. This area was the first regular assignment of many General Staff officers, on the theory that work in this area would build an appreciation of terrain.³⁰ Permanent assignment to this area meant that the officer in question abandoned other areas of General Staff service and the prospect of high command, in favor of a more purely scientific career. Such officers then entered a special auxiliary list of the General Staff.³¹

THE TRUPPENGGENERALSTAB

Those General Staff officers serving on the staff of troop units comprised the *Truppengeneralstab*, or "General Staff with the troops." Normally General Staff officers alternated between assignments at the Great General Staff and with the *Truppengeneralstab*, advancing in the course of a career to more responsible staff assignments with the troop units and to more responsible assignments on the Great General Staff. (Periodically an officer also served as commander of an actual line unit, so as not to lose all touch with the troops.) The service of General Staff officers with the larger formations of the German army was

one of the main means of spreading the ideas and working methods of the General Staff throughout the army.³²

Truppengeneralstab officers served two functions: one was to relieve the unit commander of the burden of detail work necessary to run the unit. The Germans call this *Fuehrungshilfe* or leadership assistance. The other function was to provide advice and counsel to the commander on the making of operational decisions. The extent to which General Staff officers influenced such decisions in the German army was one of the things which set the German General Staff apart from the general staffs of other nations.

The smallest unit in the German army which had General Staff officers assigned to it was the division, and the division had only one General Staff officer. Thus the division was a sort of a lower limit below which one would not expect the General Staff or its working methods to have much influence. The divisional General Staff officer was normally either a senior captain or a junior major, who had the task of helping and relieving the division commander. The division General Staff officer did not supervise the rest of the staff of the division, which included the adjutant, medical, legal, and veterinary officers, the chaplains, and so forth. In units larger than divisions, the senior General Staff officer did run the rest of the unit staff.³³

The senior General Staff officer of an army corps, the Chief of the General Staff of the Army Corps, [Chief of Staff for short], did direct the corps staff. He saw all the business of the corps staff, both command and administrative matters, before it went on to the commander. In addition, all of the other officers of the staff had to report to the Chief of Staff before they reported to the commander. The Chief of Staff ran the staff as a whole for the commander, in other words. In the absence of the unit commander, the Chief of Staff could make decisions in the commander's name, in all matters except legal proceedings and personnel decisions.

The bulk of the corps staff were not General Staff officers. Indeed there were normally only two General Staff officers, besides the Chief of Staff himself. The "first General Staff officer," also called the "Ia", was the operations officer (the operations section had the designation Ia). In peacetime this officer made all preparations for corps maneuvers. The "second General Staff officer," the Ib, had (in peacetime) responsibility for maneuvers smaller than corps size as well as arrangements for transportation. (Shortly before the First World War, the corps staff often received a fourth General Staff officer.) Larger units, such as armies, worked on the same principle as the corps, only the Chief of Staff would have more staff officers to supervise, both General Staff and non-General Staff.³⁴

Within a unit staff, the General Staff formed an elite, working either on operational matters or those matters which closely affected operations. Take an army headquarters during the First World War, for example. The Chief of Staff supervised directly the small number of General Staff officers on the staff, who formed a section of the staff of their own, Section I. Section I divided itself into four sub-sections. Sub-section Ia dealt with matters of operations, order of battle, tactics and training. Sub-section Ib covered movements and billeting, while Ic dealt with Intelligence, air service [which was an important source of intelligence], and signals. Sub-section Id dealt with the supply of ammunition for the army, both infantry and artillery. All of these areas affect operations either directly or indirectly.

A senior General Staff officer, the *Oberquartiermeister*, supervised all the other areas of the army staff, which were extensive. Section II of the staff handled all administrative matters--personnel matters, promotions, honors and awards, leave, and a host of other matters, from supply of boots to censorship. Adjutant officers [*Adjutantur*] staffed this section. Adjutant officers were officers who had attended the War Academy but who had not been selected for the General Staff. Section III handled all matters of military justice: military police, disciplinary matters, courts-martial. Section IV, the Intendance, handled

medical and veterinary matters, and certain detail matters, such as the postal service. In the German military system, civilian officials [*Beamte*] did much of the work of the latter two sections.³⁵

Thus, even within the ranks of a unit staff, General Staff officers were an elite dedicated to questions related to military operations. General Staff officers might supervise the vast detail work of the staff which required no special operational insight, but they did not do it themselves. General Staff officers became specialists in the area of military operations, but not in other areas of staff work. At every stage of their career, and whatever their particular assignment of the moment, the General Staff always expected its officers to further develop their operational insight and ability. (Not the least of a corps or army Chief of Staff's duties was the obligation to continue the military education of subordinate General Staff officers.)³⁶ The General Staff also normally refused to use General Staff officers in positions which required no insight into operations.

One should not underestimate the importance of relieving the unit commander of detail work. It permitted the commander to concentrate on the real task of a commander: deciding what the unit should do. As Spencer Wilkinson expressed the situation of a corps commander in wartime (speaking very much from the contemporary German perspective on the nature of command):

It may help ... to illustrate the dual nature of the cares by which a general is distracted. He has at the same time to perform the military functions of command and to superintend the business of management. His duty as commander involves continuous attention to the enemy's movements and to the instructions of his own chief. He must study the intentions of the army commander to whom he is subordinate and conform to them in his own movements against the enemy. But the mere management of his corps requires an effort which tends to absorb his energies and make him forget both his commander and the enemy.³⁷

As Wilkinson also puts it: "It is not enough to secure a general of tactical and strategical ability and experience. He must be protected against the danger of being absorbed by the worries of administration."³⁸

But the role of the General Staff did not end with relieving the unit commander of detail. It extended to materially assisting the commander in the making of actual command decisions. Here we enter the area of the peculiar relationship between the commander and the chief of staff in the German army, a relationship without close parallels in other armies. Again one can hardly improve on Wilkinson's depiction of this relationship:

All the orders for the movement of the troops and for their distribution in quarters pass through his [the Chief of Staff of an army corps] hands, and he is also responsible for the collecting and sifting of information concerning the enemy. ... He is thus a sort of confidential secretary to the general, preparing for him all important correspondence and serving as an *alter ego*. He knows the general's views and intentions and can therefore see with the general's eyes. He is familiar with the methods and ideas of the army headquarters, for he has been trained in the great general staff at Berlin under the

personal influence of its chief. ... Thus his training and experience peculiarly qualify him to be the general's right-hand man, to translate the general's wishes into detailed orders, and to submit for his approval at any time such suggestions as will meet the situation.³⁹

Wilkinson refers to the operation of the staff in general as follows:

Each branch of administration is so organized as to centre in a competent special manager whose decisions, though they must be submitted to the general, will seldom require to be revised or reversed. The general, while in this way in touch with all that is done in and for his corps, can give his main attention to the military operations. These [military operations] also are prepared for him and the details elaborated by a group of officers specially trained and practised in this particular branch: the art of command.⁴⁰

We are now in a position to see more clearly the reasons for the General Staff's preoccupation with training in operational art, at every stage in the General Staff officer's career. All the General Staff officers on corps or army staff--as opposed to the *Adjutantur*--worked in an area where familiarity with command issues was important.⁴¹ Furthermore, even a junior officer working at the Great General Staff in Berlin, or one of the junior General Staff officers on a corps staff, would presumably one day rise to be a Chief of Staff of a corps or army. That in turn would mean involvement in the business of the general commanding the corps or army: the business of command. At the corps or army unit level, command in war is largely a matter of operational

considerations. The General Staff then, was not content to be a purely "staff" organization. It was in the business of command, and directed its main efforts in that direction. The Chief of the General Staff conceived the operational and deployment plans, the Great General Staff helped draw them up, and the *Truppengeneralstab* helped execute them.

The General Staff was not by any means a dead end job. Not only could junior members of the General Staff expect to become the chief of staff of a major unit someday, they might well eventually become generals-in-command. In their periodic assignments to duty with the troops, General Staff captains might command a company, majors a battalion, colonels a regiment, major-generals a brigade.⁴² After that, successful General Staff officers might aspire to any command in the German army. Since 1888, General Staff officers had received promotion more rapidly than other officers. As a result, there were few higher-ranking generals of the German army, just before outbreak of the First World War, who had not at some point in their careers served on the General Staff. The only prominent exceptions were members of royal houses who held high army commands. The others had mostly gone through the "School of the General Staff."⁴³

As noted above, the advisory relationship of a chief of staff to a unit commander extended to the commander's business proper: command. Since this was a feature peculiar to the German General

Staff, and one of the most important elements of the General Staff's working practices and ethos, it is worth going into this matter in more detail. It worked something like this: while the commander always had the final say, the commander and the chief of staff discussed the operational system more or less as equals before the commander made the final decision. Thus, even (or rather especially) for command matters, the commander and the chief of staff had a collegial or a semi-collegial working relationship--not the relationship of commander and subordinate, as was the case in other European armies. (Herbert Rosinski actually refers to this system as a "dual command.")⁴⁴ Thus the commander had the benefit of the trained insight of the chief of staff in making decisions. If there was a difference of views between the two, the commander would have the last word, and there was no reason for anyone but the commander and the chief of staff to know whose ideas prevailed in the end. Many commentators have compared this relationship to a military marriage, as Herbert Rosinski somewhat idealistically does as follows:

... normally the relationship between the commander and his chief of staff is expected to conform to that prevailing in a happy marriage. The two are expected to form a unity rather than two distinct personalities, supplementing each other, composing any differences that may arise without distinguishing the share which each of them contributes to the common good; if to the commander falls the glory as well as the blame, his chief of staff is expected to find his reward in the confidence of his chief.⁴⁵

Certainly a commander in any army might well ask advice of his chief of staff, and indeed might well act on it. The difference lay in the extent to which the Prussian (later German) army institutionalized the practice. In the German army, it was the duty of the chief of staff to advise the unit on operational matters, not a matter of the sufferance or convenience of the commander. The chief of staff was also *responsible* for his advice to the commander. In cases of disagreement, the chief of staff could document in writing (ie., go on record with his General Staff superiors) his disagreement with the course of action adopted, even though the chief of staff also had the duty to implement such a decision conscientiously. ⁴⁶

Obviously a chief of staff would not make such an official protest over decisions which were fundamentally judgement calls. But if a commander made a decision which the chief of staff held to be militarily unjustifiable, the chief of staff could protest. Such official protests were very rare in the history of the General Staff.⁴⁷ But the fact that a chief of staff could lodge such a protest shows that the chief of staff was not a mere subordinate of the commander. The chief of staff was also an instrument of the high command.

The chief of staff's institutional prerogatives must have also strengthened and legitimated his advisory role. Even if a commander had wanted to cut his chief of staff out of command

decision-making, he could not do so without facing certain consequences. The advisory relationship between a commander and the chief of staff was not, therefore, strictly a matter of the commander's personal inclination. Accordingly in the German army a close consultative relationship between commanders and their chiefs of staff became the norm.

The special role of the chief of staff in the Prussian army was an innovation which traced back not to the elder von Moltke but to August Wilhelm von Gneisenau during the Napoleonic Wars. Von Gneisenau was then the Chief of the General Staff, a General Staff which the Prussian military reformers had reorganized as a chief vehicle of their intended reform of the Prussian military system. Von Gneisenau did not introduce the special role of the chief of staff in order to promote military efficiency. He did it in order to exert some control over Prussian commanding generals. According to Goerlitz:

It was Gneisenau who quite deliberately developed the conception of the joint responsibility of the various Chief of Staff for any decisions which the army commanders might take. The object--it was of prime importance--was to ensure the spiritual unity of the General Staff and to enable it to assert its will as a unitary organism against army commanders who were refractory and difficult. In the event of a difference of opinion between a Chief of Staff and an army commander, the former had special avenues open to him. He could communicate any complaints or doubts directly to the Chief of the General Staff himself.⁴⁸

No doubt this system did help achieve a greater measure of coordination in the operations of the Prussian armies during the War of Liberation than would have been possible otherwise. Von Gneisenau's chiefs of staff with rights of protest took the field in 1813.⁴⁹ The operational coordination of the Prussian forces in 1813-14 was markedly better than it had been in that most disastrous year for Prussia, 1806. Granted, in 1813-14 the Prussians had better command and control arrangements than in 1806, when as Goerlitz put it "There were ... in reality three general staffs, one headquarters, two army commanders, to say nothing of the activities of the Adjutant-General's department, which was a law unto itself."⁵⁰

The command structure in 1813-14 was less confused, but still no model of clarity. In 1813, for instance, the Allies had three main armies, with both the Russian Czar and the Austrian General von Schwarzenberg claiming the right of overall command. A strategic plan authored by the Chief of the General Staff, von Gneisenau, with help in the execution from Bluecher and Scharnhorst (Bluecher's Chief of Staff) managed to hold things together, and eventually obtain Napoleon's defeat at Leipzig.⁵¹

The army or corps chief of staff was thus also something of a watchdog as well as an advisor. Trained in military science (it is too early to say operational art), familiar with the operational plan of the Chief of the General Staff, and ultimately

more beholden (ie., for purposes of promotion) to the Chief of the General Staff than to the unit commander he served under--the chief of staff of a unit could do much to correct and guide the the idiosyncratic impulses of field commanders, in favor of action in accordance with the overall operational plan. Gneisenau showed this at Waterloo, when as Bluecher's chief of staff he made the critical decision which enabled the Prussians, defeated earlier at Ligny, to come in on Napoleon's flank at Waterloo.

On the evening after Ligny, Bluecher had disappeared. His horse had been hit, and the old man severely bruised. It was Gneisenau who made the epoch-making decision ordering his horribly mangled Prussians to retreat towards Wavre. This meant that Napoleon had failed--despite the slaughter inflicted. He had failed in his strategic objective of driving a wedge between Bluecher and Wellington. A defeated army would have taken the road due east. It was Gneisenau who determined that they were not defeated, that they could maintain their touch with the British according to the original plan. It was by carrying out that plan and making their magnificent counter thrust on to the French flank at Waterloo that Gneisenau enabled Bluecher to turn the scale, made victory possible and encompassed Napoleon's ruin.⁵²

In the immediate aftermath of a bloody defeat, with the commander out of action, Gneisenau had a good enough conception of the overall operational plan [ie., maintain contact with the British at all costs] to ensure, even in the chaos of the moment, that the retreat took place in a direction that made it possible for the Prussians to regain contact. This was a good example of the ability of a good operational plan to maintain coordinated

action even in the absence of specific orders, particularly when there were skilled General Staff officers on hand to adapt the operational plan to circumstances.

The commander/chief of staff system also made a certain division of labor possible between the commander and chief of staff. To some extent, the chief of staff could specialize in operational problems, becoming a sort of "ideas man," while the commander concentrated on carrying the weight of responsibility for decisions, inspiring the troops, and actually fighting the battle. One should not push this distinction too far. The General Staff tried to select only those officers who were themselves capable of high command, and even the work of the lowliest *Truppengeneralstab* officer involved matters of "command"--the work of a chief of staff even more so. Presumably an officer capable only of accomplishing a great deal of detail work, but whom no one could ever imagine commanding a corps or army, would wind up in the *Adjutantur*.

There were many unit commanders in the German army who were members of royal houses. During World War I, princes commanded the three army groups on the Western Front. While Crown Prince Rupprecht of Bavaria was a commander of some ability,⁵³ the others clearly owed their command of large formations to their place in the royal line of succession. There was also the problem of uneducated officers of the "old school" [ie., officers who had

not gone through the school of the General Staff]. This was more of a problem in the 19th century than later on. Of the commanders of the eight German armies which took the field in 1914, only one, von Kluck, had not served on the General Staff. Clearly, one of the reasons to have a General Staff was to compensate for any weaknesses certain commanders might have in the operational sphere.

Historically, the first "military marriage" between a commander and chief of staff arose between Bluecher and Scharnhorst. In the confusion following the Prussian retreat after the disaster of Jena-Auerstadt, Scharnhorst fell [largely because Scharnhorst had troubles with his horse and could not keep up with the King's entourage] in with Bluecher, who was trying to save the heavy artillery with his cavalry. In the course of Bluecher's fighting retreat to the Danish border, the staff officer Scharnhorst became Bluecher's trusted advisor.

Bluecher, that rough, thoroughly ill-educated man, who was nevertheless endowed with an excellent natural intelligence, was the first Prussian officer to see the value of a scientifically trained and highly qualified Chief of Staff. ... The military marriage which was begun on this march was the first example of something that was to recur time and again in the history of the Prussian and German armies. It was the first example of the co-operation between a naturally gifted commander and a scientifically trained Chief of Staff. Hindenburg and Ludendorff, Mackensen and Seeckt represent the final stages of that line of development.⁵⁴

In a working relationship as close as that between a commander and a chief of staff in the German army, personalities clearly played an important role. There was an effort of the part of the Chief of the General Staff to pair up commanders and chiefs of staff who would be able to work well together, or at least to keep good pairs together.⁵⁵ But it is also important to realize that this was not a purely personal relationship, and certainly not one which existed solely at the sufferance of the unit commander. Just as with real marriages, the working relationship between a commander and a chief of staff also took place within an institutional framework, with certain rules and expectations for both parties. It was, in other words, part of the German system of command.

The relationship existing between the commander and the chief of staff stands in sharp contrast to the popular conception of the German army as a rigidly hierarchical organization, with the relationship of inferiors to superiors being one of strictest obedience. The popular conception is correct: like most armies, the German army was rigidly hierarchical. But the relationship of a commander to the chief of staff was an exception to this rule.⁵⁶ In a similar fashion, the use of general directives, allowing considerable scope for the initiative of subordinates, contradicts the ordinary sense of how a rigidly hierarchical organization should function. Both practices, closely related as they were to

the General Staff, testify to its peculiar and powerful role in the operation of the German army.

THE SELECTION AND TRAINING OF THE GENERAL STAFF OFFICER

THE KRIEGSAKADEMIE

At one time it had been possible for an officer to gain admission to the General Staff without ever attending the War Academy, and such notable figures as the great Schlieffen himself, Mackensen and Einem of First World War fame had done so. But after 1870 such exceptions became increasingly rare, and the Prussian War Academy was the ordinary training ground of the General Staff officer.⁵⁷ Any examination of the training of the General Staff must therefore begin there.

Admission to the War Academy was by competitive examination. As time went on and it became increasingly clear that service on the General Staff was the fast route to the top in the German army, the competition for places at the War Academy became ever stiffer. By 1914, several hundred lieutenants competed for slightly more than a hundred entering places at the War Academy.⁵⁸ The entrance exam had some interesting characteristics. The exam mostly posed tactical problems for the applicants, to which they wrote out solutions. The exam tested only military knowledge, not linguistic or scientific knowledge, as in France and most other European countries. It was possible, in other words, for an officer who was not talented at formal, academic subjects to do

well on the exam. Indeed, both Schlieffen and Seeckt expressed the opinion that, given sufficient effort and study, any officer could have passed the exam.⁵⁹

The examinations did not bear the name of the applicants, who instead received a number by way of identification. This was an attempt to ensure impartial grading of the applications and eliminate favoritism in the process of selection for the War Academy. There was a particular wish to cut down on the number of Guards officers selected. Going over to numbered application examinations, however, actually increased the number of successful applications from Guards officers. It seems that Guards officers found it easier to obtain instruction in military subjects, as a result of being stationed near the capital. The Guards officer corps was also a pre-selected group, since competition was keen for places in it. In any case, the success of the Guards officers at anonymous, competitive examinations meant that they entered the War Academy at a disproportionate rate, which meant aristocratic officers entered the General Staff at a disproportionate rate. (In 1913 the ratio was 145 officers of aristocratic birth to 125 officers of non-aristocratic birth.)⁶⁰

Of course, the nature of the entrance examination had something to do with the success of aristocratic officers. Consisting mostly of tactical exercises, it was the sort of thing

the average company officer could deal with, with perhaps a certain amount of cramming.⁶¹

If the entrance examinations had been more strictly academic, in the sense of focusing on strictly academic subjects such as those required for the German *Abitur*, or at a university, the middle class officers might have done better. Educational standards were generally higher in the middle classes, with their ideal of the *Bildungsbürger* (approximately "educated citizen"), whose educational attainments were the ticket to an honored place in society. Many of the aristocrats who entered the army lacked both an ethos of education and a very good actual education, coming as many did from the educationally second-rate Prussian cadet academies.⁶²

By testing primarily for tactical knowledge, knowledge that any company officer should have been at least somewhat familiar with, the entrance examinations to the War Academy did not weed out officers who had a poor formal education. Aristocratic officers of poor education could do well if they simply studied tactical problems and perhaps picked up some tutoring around the capital. At the same time, the examinations for the War Academy allowed middle class officers to get into the pipeline leading to the General Staff. Since entrance to the War Academy was by anonymous examination, and the War Academy did not exclude middle class officers on general principles (as did many of the Guards

regiments, for example), middle class officers could get into the General Staff and rise to high positions. (Erich Ludendorff, Max Bauer, and Wilhelm Groener are particular examples.) Within its frame of reference: training officers to be military experts (especially in operational matters), the General Staff was a career open to talents.

The Prussian War Academy began its modern existence in the heady days of the Prussian reform movement. One of the goals of the reformers was to offer the attending officers a broadly humanistic education, comparable in spirit to what one might receive at a German university. From the start, there were problems with this approach. For one thing, education of a military staff officer had certain necessary, severely practical aspects. For another, the starting educational levels of many officers was low. Broadly speaking, throughout the War Academy's history there was a certain tension between the practical aspect of training staff officers to do staff work with the goal of broadly educating them, of expanding their horizons. We need not follow this story in detail,⁶³ except to note that the goal of "General Staff training" decisively won out in the period before World War I. At that time, the War Academy was under the control of the Chief of the General Staff.

The War Academy first came under the control of the Chief of the General Staff in 1872, in matters of educational policy.

Before that time, the War Academy came under the inspectorate of Training and Education, whose chief from 1854 was a General von Peucker. Peucker instituted a reform of the War Academy, which would dominate the curriculum of that institution until the late 70's. Peucker's approach to the conflicting demands of education and staff training was not to emphasize one or the other, or attempt to pursue both goals simultaneously but separately, but to attempt to treat military subjects in an academic manner. In this way he could hope to turn out qualified staff officers who were also educated officers, in the broad sense. While in practice the education (as opposed to training) of staff officers might not compare with that attained by university graduates, education of officers was an official goal that had time in the curriculum and resources devoted to it.⁶⁴

The first real change in the academic emphasis of the War Academy came in 1888, when the Chief of the General Staff (the elder Moltke) increased the number of hours of instruction in required (mostly military subjects) from 52 hours (over the three year course of the War Academy) to 74 hours of instruction in obligatory subjects. This largely cut out the elective courses in non-military subjects, which the students could take under Peucker's system. For instance, under the previous regime the officers could choose to take elective courses in such subjects as history, general geography, physical geography, chemistry,

physics, history of literature, or history of philosophy. Under Moltke's new regime, officers then decided whether to pursue additional study in either languages or mathematics/the natural sciences. Once set upon one course or the other, students then took only assigned course in that area.⁶⁵ Obviously, this new system largely eliminated the possibility that officers could expand their general educational grounding while at the War Academy.

In 1907 the younger von Moltke went even further. He made even the courses of the mathematics/natural sciences and languages options non-obligatory. Henceforward, officers could attend courses in history before 1648, mathematics, physics, geography, survey, chemistry and even some of the language courses strictly on a voluntary basis. Of course, attendance was mandatory for the military courses. This policy ended in 1912 as it became clear the army needed scientifically and linguistically competent officers. The younger von Moltke made the courses of the mathematics/natural sciences and language concentration mandatory once again. But now it was clear that these courses served a practical purpose in the army, rather than contributing to the general educational development of War Academy graduates.⁶⁶

A look at the curriculum in more detail should prove helpful at this point. In 1912, the core of the curriculum was 16 hours of instruction in tactics and general staff service, together with

12 hours of war history [*Kriegsgeschichte*]. There was also instruction in certain other military subjects: one hour of military health, one of weapons instruction [*Waffenlehre*], one of military law, seven hours of fortification and siege warfare, one hour of military survey. Then there were eight hours of history, and four hours of military geography, military mathematics, military administration, naval affairs, and art of war [*Kriegskunst*]. The curriculum was relatively stable from 1877 to 1912, in terms of time devoted to the required (not counting the mathematics/ natural science and linguistics options) subjects, with a few observable trends. Tactics and general staff service, together with war history, went from a total of 25 hours in 1877 to 28 in 1912, while from 1877 to 1912 weapons instruction decreased from four hours to one, military sketching from two hours to one hour, fortifications from nine hours to seven hours. History went from 11 hours to eight; military geography, military mathematics, military administration, naval affairs, and art of war decreased from ten to four hours.

While nothing dramatic, these changes do indicate a certain redirection of effort away from subjects considered less essential and towards tactics and general staff service. Every subject except tactics and general staff service lost hours, or stayed the same, between 1877 and 1912. Total hours in the required core curriculum decreased from 61 in 1877 to 51 in 1912, but the number

of hours studying tactics/general staff service and war history increased from 25 to 28. Within the required military subjects, the percentage of time devoted to tactics/general staff service and war history steadily increased from 39.7% in 1877 to 54.9% in 1912.⁶⁷

One might charitably describe the limited reallocation of time between the various courses as a certain gradual concentration on the essential purpose of the staff training: tactics and general staff service. After all, few would consider the subjects which lost hours during this period--military sketching, weapons instruction, military geography and the like--as particularly broadening, with the exception of the hours lost of general history instruction. Thus the reallocation of hours, as far as it went, was largely a matter of redirecting priorities within a set of military subjects. Far more serious, in terms of the general education of the attendees, was the loss of the elective subjects and the increasingly cavalier attitude towards the classes of even the required options in mathematics/natural sciences and languages. It must have been clear to any ambitious officer where to put forth the greatest personal effort: tactics and general staff service.

A change in the approach to the (always largely military) required curriculum was more serious than marginal shifts in the curriculum hours devoted to the required courses. Whereas von

Peucker had instituted a system which sought to treat even military subjects in an academic fashion, after the 1870's there was a movement towards treating military subjects in a purely practical fashion, training narrow military specialists rather than educating officers. Detlef Bald speaks of the transition of the War Academy from an academically oriented institute of higher learning to a militarily oriented technical institute.⁶⁸

There was a severely practical reason for this increased emphasis on the practical. After the transfer of academic control of the War Academy to the General Staff in 1872, most of the instructors at the War Academy were General Staff officers serving in Berlin. These officers continued to perform regular duties, presumably mostly at the Great General Staff. These instructors could teach only what they knew, and what they knew was actual General Staff service. As Rosinski notes:

These officers could draw for their inspiration upon their own immediate experience and work, and their work also had the effect of concentrating their teaching specifically on those issues with which they were in daily contact. Only a few, like Freytag-Loringhoven, were broad enough in their interests to escape this. The result was that in practice the training of the Academy tended more and more to narrow down into pure staff technique and narrower still, into the technical conduct of those large-scale operations which the general staff had come to consider as its special preserve.⁶⁹

Some of the most famous General Staff officers of the late nineteenth and early twentieth centuries served as instructors at

the War Academy in this fashion, famous names such as Hindenburg, Freytag-Loringhoven, Stein and Ludendorff.⁷⁰ While the instruction in operational issues was doubtless top notch, no one familiar with Erich Ludendorff's later career would imagine that his students received much in the way of educational broadening.

It should come as no surprise to hear that much of the instruction at the War Academy, as a matter of practice, centered on the General Staff's central obsession, operations. Rosinski quotes an officer who attended the War Academy in the early years of this century:

The exercises at the Military Academy ... were most interesting, at times absolutely fascinating, but did not concern themselves in the least with the technique of the conduct of battles. No order that would have been given *in* combat was ever discussed, hardly even a real order *for* combat; it all turned around the "operational element," around the question, whether to move forward or backward or to the side, whether to envelop right or left (also whether one should execute an order, or deviate from it). That in a division there occurred artillery orders, that with an army corps it was necessary to think of the "means of communication," those were all technical details practically never touched upon at all. [This last sentence is an observation of particular salience for the remainder of this work.]⁷¹

After the War Academy's three years there was an examination to determine posting to the Great General Staff. About 30% of the War Academy graduates passed this hurdle, or about 30 a year. This examination considered not only military ability (ie.,

tactical and operational ability) but also "personal factors, such as character, general education, manners, personality."⁷²

Presumably the rationale for including such subjective factors was the work General Staff officers had to perform throughout their careers. Much as the General Staff valued operational ability in the sense of ability to study a paper problem and come up with a creative solution, the General Staff did not want officers who could only do that. A chief of staff had to work closely with a commander, all General Staff officers commanded troop units at various stages in their careers, and presumably they would themselves hold high command some day. The General Staff wanted its officers to command the respect of the officers of the rest of the army. The General Staff wanted to involve itself in all the command decisions of the German army, and for that it needed staff officers who were operational specialists, but not socially dysfunctional operational specialists. Another way of putting it is that General Staff officers could not deviate too far from the norm of army officers--which included the social norms of the officer corps.

PROBATIONARY PERIOD AT THE GREAT GENERAL STAFF

Those who passed this second selection (the first being the entrance examination to the War Academy) went on to two years probationary service at the Great General Staff. They were not yet actually members of the General Staff, nor entitled to wear

its uniform. They worked in one of the departments of the Great General Staff. One of the benchmarks of their performance during this period was to see how well they stood up to the long hours and pressure of work on the Great General Staff, an intensity of work which would be the norm for the rest of their careers in the General Staff, if they gained admission.⁷³

The further tactical and operational development of these probationary General Staff officers continued while they served at the Great General Staff, as indeed it did for all the officers of the Great General Staff. There were weekly tactical map exercises, followed in the winter by larger exercises supervised by the department chiefs and by the quartermasters. Finally the young probationary officers took part in the large exercises supervised by the Chief of the General Staff himself. As time went on the Chiefs of the General Staff encouraged even these young lieutenants to put themselves in the role of high commanders (after the elder von Moltke that is, who was always very modest about the role of the General Staff and its officers). This caused a certain amount of consternation among the existing *Generalitaet*:

Schlieffen ... included these young "commandeered" [ie., posted to the Great General Staff] lieutenants in the great *Kriegespiele*[sic] in which the whole general staff participated *for months on end* [italics added], to the intense dissatisfaction of many high dignitaries who found these officers far too young to lead armies—even on paper. 'As long as they are lieutenants, certainly,' replied Schlieffen.

'Fortunately, however, they have the ambition later on to command an army, or if their aims are more moderate, at least an army corps, or to assist a corps commander as his chief of staff. In war, however, such an army corps is hardly likely to operate alone. It will find itself within the larger formation of an army, ... Out of this subordination to larger units, tasks will develop of which the individual army corps by itself knows nothing. The difficulties grow with the size of the armies."⁷⁴

This is not the place to examine the Great General Staff's whole repertoire of training exercises to develop the tactical and operational abilities of its officers. Suffice to say that they included map exercises on paper, the study of operational history, terrain walks (or rather rides), war games, and staff rides. In fact, the Great General Staff was the real "operational university" of the General Staff and not the War Academy, which was really but an introductory stage, where officers serving on the Great General Staff introduced the acolytes (or rather potential acolytes) to the study of operational matters. General Staff officers did not stop learning about operational art when they graduated from the War Academy, or when they left their first tour of the General Staff, or when they became colonels. They continued to develop their operational ability throughout their careers.⁷⁵

The Chief of the General Staff did not consider it beneath his dignity, or that he was too busy, personally to supervise and participate in map exercises, war games and staff rides. Indeed

he probably considered these activities one of the most important things he did all year, a chance to put his personal stamp on the General Staff itself. The elder von Moltke had even found the time to write operational histories himself.⁷⁶ People in an organization are always extraordinarily sensitive to what the boss wants or seems to want. The rest of the General Staff took its cue from its chief.

At the end of the two years probationary period at the Great General Staff, there was a third and final selection for officers who would actually pass into the General Staff. This selection process chose 4 or 5 officers out of the 30 who had made it to the Great General Staff (out of 140-160 who had made it into the War Academy, out of the many hundreds who had applied).⁷⁷ (Officers might serve in the General Staff for 30 or 40 years, after all, so it only needed a very few new officers each year.) The General Staff certainly could not complain that it did not have the pick of ambitious and talented officers in the German army—a fast track to general's rank ensured that.

The final selection for the General Staff emphasized the qualities necessary for command:

During the whole of this period of probation, personal traits, the ability to stand severe wear and tear, strength of character, and the gift for rapid decision necessary in a future commander or his assistant played a far greater role than at the Academy. Those who finally passed this triple test had some right to consider themselves among the elect.⁷⁸

The winners in this selection process went on to begin their General Staff career path with an assignment to the *Truppengeneralstab*, usually starting out as a junior General Staff officer with a corps, then moving on to an independent assignment as a division's General Staff officer.⁷⁹ What became of the rest? Some went on to service in the higher *Adjutantur*, working on a staff but not doing General Staff work. Some became instructors at the various officer's schools. Others simply returned to service as line officers. At one point in time, such officers did not lose all chance at joining the General Staff. By exceptional service they might receive a special appointment to the General Staff, the attitude being that it was always possible to make a mistake in the selection process. This practice ceased during the time of the younger von Moltke, a symptom of the increasingly severe competition to get into the General Staff.⁸⁰ But the passed over officers did constitute a sort of reservoir of General Staff trained officers, available for use in General Staff service during wartime.⁸¹

At the end of an intensive five-year training period for the General Staff, the new General Staff officers were thoroughly grounded in the details of general staff service. In addition, the General Staff expected them to be experts in operations—but not in anything else, such as strategy, in the sense of overall strategy to win wars as opposed to campaigns. There "was not

enough time" for that. If an officer had a grasp of the larger issues connected with warfare, it was a matter of personal talent and inclination, not the result of any effort on the part of the system to inculcate greater understanding in these areas. The General Staff did not seek to educate its officers in the higher reaches of military affairs, nor did it select educated (in the general sense of the term) officers or educate its officers once it selected them. (Educated officers at least might have been able to see the broad picture for themselves.) Rather the General Staff selected for purely tactical ability, trained for tactical and operational ability, and then kept its officers so busy working and further developing their tactical and operational ability that they had no time for anything else, even had they been so inclined. General Staff training was a narrowing rather than a broadening experience.

Anyone who wants to argue that the strategic blunders and political miaspprehensions of the German military leadership in World War I had their roots in the narrowness of General Staff training would find plenty of ammunition in the General Staff educational system. Rosinski comments on the political naivete of German generals, in comparison with generals in almost any army:

The average general staff officer was a high-class military technician, excelling in all dispositions dealing with the movement of large masses, their supply, the organization of railway transports. In simple tactical matters his training was far less complete; outside of his own field he was helpless.

This was particularly conspicuous in all matters pertaining to politics, the ignorance even of outstanding members of the general staff contrasting most strangely with the knowledge of their French and British opposite numbers.⁸²

Before the Wars of Unification, the German military leadership had studied general military theory, reading the great military theorists. After the War Academy came under the control of the General Staff, and the instructors became practicing General Staff officers, the students at the war academy studied war through the case study method.⁸³ The result was more than a generation of officers who were excellent at the operational control of divisions, corps, and armies, but were weaker at strategic issues than their predecessors. The direction of the this change is undeniable: Rosinski points out that in World War I, the General Staff produced a good many excellent operations officers, but not very many excellent chiefs of staff. Many of the more famous chiefs of staff were in fact "glorified operations officers."⁸⁴

This is a severe indictment of the General Staff educational system, for the chiefs of staff were essential to the functioning of the General Staff system. If the "School of the General Staff" produced officers who were overspecialized even in terms of service as a chief of staff, one need hardly inquire whether the General Staff threw up military leaders capable of devising strategies for war that were consonant with political realities,

both in terms of foreign relations and the domestic political consensus.

The School of the General Staff suffered then, from all of the faults of overspecialization. If it produced officers who were better grounded in operations than any group of officers the world had ever seen or probably ever will see again, there was a price to pay in the narrowness of outlook that afflicted these officers. If that narrowness of outlook led to General Staff officers (who were, after all, in large part the actual or future military leadership of Germany) making strategic and political mistakes as a result of their narrowness, then it would take a great deal of operational excellence to undo these mistakes.

Much of the rest of this work will argue that General Staff techniques, decentralized control through the use of general directives in particular, allowed the General Staff to adapt to World War I better than one might have expected. Leadership through directives and staff-inspired flexibility in command arrangements allowed the General Staff to play a pivotal role in the adaptation of changes in technical matters and in the adoption of changes in army tactical doctrine. The General Staff had quite specifically neglected technical matters before the war, concentrating on operational questions.⁸⁵ Similarly, tactical doctrine had not been a special concern of the General Staff before the war. The War Ministry was responsible for publishing

the tactical field regulations, in consultation perhaps with the Chief of the General Staff (but also under consultation with a number of other agencies, such as the inspectors of the various branches and the technical commissions).⁸⁶ There were no General Staff officers stationed below divisional level, so one would expect the "tactical" interests of the General Staff to extend only to orders a division might issue to its subordinate (brigade, regimental, or battalion) units. This was hardly platoon or squad level, in other words. The real interest of the General Staff was operations.

If the General Staff was able to extend its organizational techniques for doing well at operations to doing well in these previously neglected areas, it proved less successful at recovering from a deficient strategic and political perspective. But then, these are the most difficult areas for a military organization to address in war, and the reason they are usually left to civilians.

HISTORY OF THE MODERN GENERAL STAFF

When King Wilhelm I of Prussia, by a cabinet order of June 2, 1866, granted to the then Chief of the General Staff Helmuth von Moltke the right to issue orders in the name of the King,⁸⁷ the German General Staff and its chief attained a unique position, in terms of the history of general staffs both in Prussia and elsewhere. For the first time a chief of the general staff had

attained the position of *de facto* commander in chief of the army. In effect, the elder von Moltke became chief of staff to the commander-in-chief of the Prussian army [the King of Prussia], but with von Moltke making the operational plans, subject only to the King's approval.

Von Moltke's victory in the Austro-Prussian war of 1866 ensured that when Prussia's next war came along, the Franco-Prussian War of 1870-71, the Chief of the General Staff [von Moltke again] would have the power to issue orders in the King's name from the first day of mobilization, [July 16, 1870].⁸⁸ Von Moltke's victory in the Franco-Prussian War ensured that the Chief of the General Staff would be the presumptive *de facto* commander-in-chief of the German army upon the outbreak of war, right up to World War I.

The attainment of this unique position for the Chief of the German General Staff was von Moltke's personal achievement. The founders of the modern German General Staff--Massenbach, Scharnhorst, Gneisenau, (in the period of the Prussian reforms during the wars with Napoleon) had wanted the Chief of the General Staff to have the position von Moltke eventually attained: that of chief military advisor to the King of Prussia. This idea was a part of their intended reform of the Prussian military system. But originally the Chief of the General Staff was a subordinate of the War Minister. In 1821 the Chief of the General Staff became

not a subordinate but an advisor *of the War Minister*--not the King. The Chief of the General Staff could not, as a matter of right, give advice to the King. Only the War Minister could do that, and the War Minister would decide whether to pass on to the King the advice of the Chief of the General Staff.⁸⁹

The King could, of course, talk to any of his officers he wanted to, including the Chief of the General Staff. This meant that the Chief of the General Staff was not necessarily out of the running in the struggle for the sovereign's ear. The organizational history of the General Staff between 1821 and the appointment of von Moltke in 1857 was that of a struggle between the General Staff and the Military Cabinet⁹⁰, a power struggle which the General Staff lost. Basically, the Military Cabinet won the struggle for the King's ear, the struggle for the power to advise. Since the Prussian army was the personal instrument of the King, the struggle for power in the Prussian army was a court struggle, and in a court struggle the ear of the monarch is everything.⁹¹

With the advent of a constitutional struggle in Prussia after the events of 1848, a constitutional struggle which centered on the control of the army, the King attempted to retain personal command of the army. This meant de-emphasizing the traditionally leading role of the Prussian War Minister, because that official had to answer to Parliament (or at least the Prussian Landtag

thought so). This led the King to emphasize the role of the "irresponsible" (to the Landtag) military agencies, which is to say those which reported directly the King. At first this phenomena largely benefitted the Military Cabinet, which nearly absorbed the General Staff at this time.⁹² Later, after the rise of the General Staff under von Moltke, the attempt to preserve the King's command prerogatives increased the power of the General Staff vis-a-vis the War Minister.

When the King appointed von Moltke Chief of the General Staff in 1857, that office had been declining in importance during the terms of both of von Moltke's predecessors.⁹³ In fact, prior to 1859, the Chief of the General Staff did not normally correspond directly even with the War Minister, but rather with a subordinate agency of the War Ministry, the General War Department. In 1859, because of the possibility of Prussian involvement in the Franco-Austrian War, the War Minister asked for von Moltke's advice directly, and also ordered that the Chief of the General Staff report directly to the War Ministry in the future.⁹⁴ That was a start, but it was still a long way from being the King's permanent advisor.

The war with Denmark dramatically changed von Moltke's position and that of the Chief of the General Staff, though not immediately. Von Moltke rose to a commanding position in the Prussian military leadership not because he was a ruthless

bureaucratic infighter but because he so ably performed his legitimate (though in peacetime considered unimportant) function as an advisor on operational planning. Von Moltke was that familiar figure in military history, the officer with a plan. But von Moltke's plans worked.

Von Moltke's rise was not easy. At the beginning of the war, he was only an advisor of the War Minister's. Orders for the movement of forces originated with the King and went through the War Minister. So it was entirely up to the War Minister and the King (who von Moltke did not necessarily advise directly) whether von Moltke's suggestions had any practical effect.⁹⁵ It was hard enough for Moltke to make his influence felt during the preparation and mobilization stages of the war, when orders originated in Berlin. But after January 20, 1864 control passed over [subject still to the general direction of the King] to a field command,⁹⁶ with the old Prussian Field Marshal Wrangel in command. Wrangel had a presumptive right to the field command since he was at that time the only living Prussian Field Marshal.⁹⁷ Wrangel was a military troglodyte of the best sort, who "declared that a General Staff was wholly unnecessary and that it was a shame and a disgrace for a Royal Prussian Field-Marshal to have a lot of 'damned clerking' put on him."⁹⁸

Needless to say, Wrangel did not feel any need to send reports from the field back to the head clerk of them all, the

Chief of the General Staff von Moltke in Berlin. Nor did other, better informed authorities in Berlin, the War Minister and the Chief of the Military Cabinet⁹⁹ do much to help keep von Moltke informed.¹⁰⁰ In modern parlance, von Moltke was "out of the [decision-making] loop." Moltke was thus in the weakest position an advisor can be in: attempting to advise without having access to the relevant information about what was going on. To relieve his situation somewhat, von Moltke had recourse to a device used by the General Staff in the War of Liberation against Napoleon: private correspondence with General Staff [and some other] officers in the field. The chief of staff of Prince Karl Friedrich [one of Wrangel's subordinates], Blumenthal, was a particular source of information, as were a number of other officers.¹⁰¹

Even from this weak advisory position in Berlin, von Moltke had drawn up most of the operational plans by which the field commanders fought the war.¹⁰² Unfortunately the execution of those plans left much to be desired. It was important to the Prussians and their Austrian allies to defeat the Danes quickly and avoid having other great powers come into the war. The Danes concentrated their initial defense on a fortified position across the contested province of Schleswig, and von Moltke had recognized that the easiest way to defeat the Danes was to fix and destroy the Danish forces (almost the whole of their army) holding this

line. But Wrangel let the Danes retire to their fall-back position at Dueppel (admittedly the Danes most inconsiderately did not try very hard to hold on to their line across Schleswig, withdrawing after the first Austro-Prussian success).

The Danes withdrew to a fortified position at Dueppel, from which they could easily withdraw to the island of Alsen, even if the Austro-Prussian force successfully stormed the lines at Dueppel. The lines at Dueppel were too strong to storm out of hand, but required siege preparations [although Wrangel's headquarters was slow to recognize this, and Moltke had to exert himself to avert a precipitate assault and avoid a disaster]. Even if Dueppel fell, the Danish forces could withdraw to Alsen, which would be difficult to take in the face of Danish naval superiority. The point was that both Dueppel and Alsen were part of Schleswig, which was after all what the war was all about: so long as the Danes maintained a force at either of those places, they could keep alive their hope of great power intervention. To top everything off, Prussian forces inadvertantly crossed the border of Jutland--a province which was not in dispute--and occupied the town of Kolding. No one at Wrangel's headquarters had wanted this, and it further increased the danger of great power intervention, but it was also a move which was hard to take back once made.¹⁰³

In short, the war against Denmark was not going at all well. Wrangel's chief of staff, General Vogel von Falckenstein, seems to have exceeded the average of eccentricity even for Prussian generals of the old school. Goerlitz describes him as "a difficult man of quite peculiar obstinacy." Incensed at von Moltke's correspondence with subordinate members of his staff, von Falckenstein complained to the King, coupled with a request for his relief (in effect an offer of resignation). A bad relationship had long existed between Wrangel and von Falckenstein, and Prince Karl Friedrich had long sought the removal of the former. Instead the King, at the urging of the Chief of the military cabinet von Manteuffel, resorted to an old trick of the Prussian military system: improve a bad commander with a good chief of staff. He sent von Moltke, the Chief of the General Staff, to be Wrangel's chief of staff, while he gave von Falckenstein a command in Jutland.¹⁰⁴

Up to this time, von Moltke had advised on the making of operational plans. Even the institutional strength of his position as an advisor was weak, since there were others with better access to the King than he, and von Moltke did not receive good information. Now von Moltke would oversee the execution of his plans as well as make proposals. Despite his position as only the chief of staff to Wrangel, it was clear that von Moltke would largely assume direction of operational affairs.¹⁰⁵ Wrangel's

function would consist largely in agreeing to von Moltke's operational proposals.

Von Moltke did a good job overseeing the execution of his plans. There was no repetition of the fumbling which had marked the regime before his arrival. The Danes had largely evacuated the mainland, including Jutland, and withdrawn to the island of Alsen and another island off Jutland, Fuenen. It would be hard to move the Danes from these islands, and they hoped to prolong the war until other European powers intervened diplomatically or militarily. There was indeed a conference of the European powers in London, which secured a truce beginning on May 12 and lasting for six weeks to allow for negotiation. These were unsuccessful. Upon resumption of hostilities, the Austro-Prussian forces attacked the island of Alsen. In a pre-dawn crossing of the sound between the island of Alsen and the mainland, they overran the island. That was enough for the Danes, since it was fairly clear the Austro-Prussian forces could overrun Fuenen and even Zeeland (the island on which Copenhagen lies) if they wanted to. A peace treaty followed on October 30.¹⁰⁶

The war against Denmark established von Moltke's reputation and ensured that when the next war came, with the recent ally Austria, Moltke would be the leading authority from the beginning for both operational planning and the execution of those plans. (It is interesting to note that after the Danish war, one of

Moltke's first activities was to undertake a study of the early part of the war from official records, so he could figure out what had been going on during the phase when he had been isolated in Berlin. Moltke also drew important lessons for future wars from these studies.)¹⁰⁷ A royal cabinet order of June 2, 1866 gave him the authority to issue orders in the name of the King in the Austrian war, provided that he kept the Minister of War informed.¹⁰⁸ This was of course a complete reversal of Moltke's previously purely advisory position *vis-a-vis* the war minister.

The battle of Koeniggraetz won the Austrian campaign and with it the war, within seven days of the opening of hostilities. It was the greatest battle of encirclement up to that time.¹⁰⁹ It was at the same time a vindication of von Moltke's operational theories: deployment along exterior lines, followed by a converging march of the separated parts of the army, aimed at unification of the parts on the field of battle. In the process, some of the widely separated parts of the army would come in on the enemy's flank.¹¹⁰ That was von Moltke's operational conception: his supervision of the execution left little to be desired.

Needless to say, von Moltke's conduct of the Franco-Prussian war did nothing to diminish his reputation. After that signal victory, leading to the unification of Germany, the institutional position of the Chief of the General Staff, at least for the next

war, was secure: the Chief of the General Staff would be the King's [now also German Kaiser] chief military advisor, in effect his chief of staff, and *de facto* (so long as the Chief of the General Staff possessed the confidence of the Kaiser), the commander-in-chief of the German army.

After the victories in Austria and France the German General Staff acquired an element of power it had never had before: prestige.

... the General Staff acquired an almost mystical power over men's minds. It was already surrounded, thanks to the victories of 1866 and 1870, by the nimbus of invincibility, and the extreme reserve which it practised in regard to all current questions increased the awe in which it was held. Thus there grew up the legend that here was a dark force, something more than human, weaving the threads of national destiny according to a terrible pattern of its own.¹¹¹

What von Moltke had done was actually rather esoteric. He had developed a conception of operational art closely adapted to the conditions of his day: railways and telegraphs, much larger armies, the tactical strength of the defensive. Few people apart from military historians and military officers who closely studied their profession [a minority] would ever have any real conception of what Moltke had really done. But then again, esoteric knowledge exerts a fascinating effect on the public imagination. There arose a belief, hopeful in nature in Germany and fearful abroad, that, somehow encapsulated in the German General Staff,

there resided a "secret of victory." A secret of victory, if it existed, would have been a powerful thing indeed in an age of fierce nationalism. But the General Staff's undoubted competence at one aspect of war, operations, did not in fact guarantee victory, if material strength and the strategic preconditions were not present. The fact that a number of leading General Staff officers forgot (or rather never knew) this constituted a grave danger to the newly created *Reich*.

-- Notes --

1. At least prior to about 1916, when the General Staff began to run a number of matters unrelated to operational questions.

2. Militaergeschichtliches Forschungsamt, Beitraege zur Militaer- und Kriegsgeschichte (Stuttgart: Deutsch Verlags-Anstalt, 1962), vol. 3: Die Generalstaebe in Deutschland 1871-1945: Aufgaben in der Armeee und Stellung im Staate, p. 18. The total of 352 permanent or fully-fledged General Staff officers includes the 34 officers of the Bavarian General Staff, which had an independent existence in peacetime.

3. Ibid., p. 15.

4. D. B. Nash, Imperial German Army Handbook 1914-1918, (Shepperton: Ian Allan Ltd., 1980), p. 13-14, 29-31.

5. Militaergeschichtliches Forschungsamt, Die Generalstaebe in Deutschland 1871-1945, p. 15-16.

6. Wiegand Schmidt-Richberg, "Die Regierungszeit Wilhelms II," in Deutsche Militaergeschichte in sechs Baenden 1648-1939, vol. 3, Section 5, produced by the Militaergeschichtliches Forschungsamt (Herrsching: Licensed edition for Manfred Pawlak Verlagsgesellschaft mbH, 1983), p. 53-54.

7. Militaergeschichtliches Forschungsamt, Die Generalstaebe in Deutschland 1871-1945, p. 16.

8. Ibid.

9. Ibid.

10. Schmidt-Richberg, "Die Regierungszeit Wilhelms II," p. 62-63.

11. Militaergeschichtliches Forschungsamt, Die Generalstaebe in Deutschland 1871-1945, p. 18-19.

12. Ibid., p. 18.

13. Ibid., p. 20.

14. Ibid., p. 18.

15. Ibid., p. 37.

16. Spencer Wilkinson, The Brain of an Army: A Popular Account of the German General Staff, 2nd ed. (London: Constable & Company Ltd., 1913), p. 132.

17. Militaergeschichtliches Forschungsamt, Die Generalstaebe in Deutschland, 1871-1945, p. 24-25.

18. Ibid., p. 18.

19. Ibid., p. 33.

20. This is a direct translation of a table in Militaergeschichtliches Forschungsamt, Die Generalstaebe in Deutschland 1871-1945, p. 34

21. Ibid., p. 34-35.

22. Ibid., p. 35.

23. Spencer Wilkinson, The Brain of an Army: A Popular Account of the German General Staff, 2nd ed. (London: Constable & Company Ltd., 1913), p. 132.

24. Militaergeschichtliches Forschungsamt, Die Generalstaebe in Deutschland, 1871-1945, p. 35.

25. Ibid., p. 18. For the proper General Staff uniform markings see The [British] General Staff, Handbook of the German Army in War, April, 1918, (other publication data not supplied; reprint ed., with an introduction by David Nash, New York: Hippocrene Books, Inc., 1977), p. 151.

26. Militaergeschichtliches Forschungsamt, Die Generalstaebe in Deutschland, 1871-1945, p. 19

27. Ibid., p. 35, p. 19.

28. Walter Goerlitz, History of the German General Staff 1657-1945, trans. Brian Battershaw (New York: Praeger, 1954), p. 144.

29. Militaergeschichtliches Forschungsamt, Die Generalstaebe in Deutschland, 1871-1945, p. 20.

30. Ibid., p. 19.

31. Spencer Wilkinson, The Brain of an Army, p. 133-34.

32. Militaergeschichtliches Forschungsamt, Die Generalstaebe in Deutschland, 1871-1945, p. 19.

33. Ibid., p. 36.

34. Ibid., p. 36-37. There were no army-sized units in peacetime. In peacetime, the "army inspections," [*Armeeinspektionen*] acted as a planning staff for the units which would form the units during the war. The normal peacetime organization of the army centered on the "military districts," [*Wehrkreise*], each of which contained an active-duty army corps and mobilized additional reserve units in wartime.

35. The [British] General Staff, Handbook of the German Army in War, April, 1918, p. 38-41.

36. Militaergeschichtliches Forschungsamt, Die Generalstaebe in Deutschland, 1871-1945, p. 36.

37. Spencer Wilkinson, The Brain of an Army, p. 124.

38. Ibid., p. 113.

39. Ibid., p. 130.

40. Ibid., p. 131.

41. Ibid., p. 130.

42. Ibid., p. 133.

43. Wiegand Schmidt-Richberg, "Die Regierungszeit Wilhelms II," p. 71. The accelerated promotion of General Staff officers was the doing of the elder von Moltke's successor as Chief of the General Staff, Graf Waldersee, who convinced the Kaiser to approve this practice in 1888. The elder von Moltke had not used his personal influence to push the promotion of the officers of the General Staff, any more than he sought the official right to report directly to the Kaiser, at least in times of peace. Indeed, the General Staff officers of the elder von Moltke's time felt that they fell behind the officers of the War Ministry in the matter of promotion. See Rudolf Schmidt-Bueckeburg, Das Militaerkabinett der preussischen Koenige und deutschen Kaiser:

Seine geschichtliche Entwicklung und staatsrechtliche Stellung, 1787-1918 (Berlin, E. S. Mittler & Sohn, 1933), p. 165, p. 137.

44. Herbert Rosinski, The German Army, edited and with an introduction by Gordon A. Craig (New York, Frederick A. Praeger, 1966), p. 107.

45. Ibid., p. 107-108.

46. Militaergeschichtliches Forschungsamt, Die Generalstaebe in Deutschland, 1871-1945, p. 53.

47. Herbert Rosinski, The German Army, p. 107.

48. Walter Goerlitz, History of the German General Staff 1657-1945, p. 41.

49. Ibid., p. 39.

50. Ibid., p. 26.

51. For the role of the Chief of the General Staff and General Staff officers in the 1813-14 campaign, see Goerlitz, Ibid., p. 39-46.

52. Ibid., p. 46.

53. H. von Kuhl, Der deutsche Generalstab in Vorbereitung und Durchfuehrung des Weltkrieges, 2nd, revised edition, (Berlin, E. S. Mittler & Sohn, 1920), p. 185-186. For a more negative judgement of Prince Rupprecht, see Herbert Rosinski, The German Army, p. 279-80.

54. Walter Goerlitz, History of the German General Staff, p. 27-28.

55. Herbert Rosinski, The German Army, p. 278.

56. Ibid., p. 277.

57. Ibid., p. 269.

58. Ibid., p. 269-270.

59. Ibid., p. 269-70, p. 287.

60. Ibid., p. 270.

61. There were a number of books targeted specifically at officers who wished to do well on the War Academy entrance examinations. Because it was fairly detailed, Bronsart von Schellendorf's Der Dienst des Generalstabes was probably an example, although it is not simply an exercise book. The book went through at least two editions. Bronsart von Schellendorff, Der Dienst des Generalstabes, 2nd Edition, revised by Major Meckel (Berlin: Ernst Siegfried Mittler und Sohn, 1884), *passim*.

62. Detlef Bald, Der deutsche Generalstab 1859-1939: Reform und Restauration in Ausbildung und Bildung, Schriftenreihe Innere Fuehrung, Reihe Ausbildung und Bildung, Vol. 28 (Bonn: Bundesministerium der Verteidigung, Fuehrungsstab der Streitkraefte I 15, 1977), pp. 21-23, 34-36.

63. Detlef Bald has in any case covered the matter in comprehensive fashion, see Der deutsche Generalstab 1859-1939, p. 5-42, also the rest of the book *passim*.

64. Ibid., p. 37-44.

65. Ibid., pp. 46, 43.

66. Ibid., p. 46-47.

67. Ibid., Table 1 on p. 45 and Illustration 2 on p. 48.

68. Freely translated. In the original "... *aus dem wissenschaftlichen Ansatz einer akademisch orientierten Hochschulausbildung eine begrenzte Fachhochschule militaerischer Fuehrungsauslese geworden ist.*" Ibid., p. 47.

69. Herbert Rosinski, The German Army, p. 267-68.

70. Ibid., p. 267.

71. General Marx, "Ueber Schlieffen-Geist und Haeseler-Geist," Militaer Wochenblatt No. 12 (1934): 445-46, quoted by Herbert Rosinski, The German Army, p. 268.

72. Herbert Rosinski, The German Army, p. 270.

73. Ibid., p. 270-71.

74. Ibid., p. 272.

75. Ibid., p. 288. Rosinski quotes the French military figure Bonnal, who noted that in France, officers studied military

art for two years at the French war academy and then got back to the business of real soldiering. (This is entirely typical of the attitude towards the subjects studied at the war academy in most military organizations.) See note, p. 288.

76. Militaergeschichtliches Forschungsamt, Die Generalstaebe in Deutschland, 1871-1945, p. 35.

77. Herbert Rosinski, The German Army, p. 273.

78. Ibid., p. 273-74.

79. Ibid.

80. Ibid., p. 271.

81. Edgar Graf von Matuschka, "Organisationsgeschichte des Heeres 1890 bis 1918," in Deutsche Militaergeschichte in sechs Baenden 1648-1939, vol. 3, Section 5, produced by the Militaergeschichtliches Forschungsamt (Herrsching: Licensed edition for Manfred Pawlak Verlagsgesellschaft mbH, 1983), p. 197.

82. Herbert Rosinski, The German Army, p. 291.

83. Ibid., p. 268.

84. Ibid., p. 291.

85. Detlef Bald, Der deutsche Generalstab 1859-1939, p. 41.

86. Militaergeschichtliches Forschungsamt, Die Generalstaebe in Deutschland 1871-1945, p. 20.

87. Walter Goerlitz, History of the German General Staff, p. 86.

88. Ibid., p. 90. Wilhelm I had been a genuine professional soldier before becoming king and possessed considerable military judgement. Therefore, it was not a mere fiction that he was the commander-in-chief. But normally Wilhelm I expressed this military judgment in letting von Moltke run things. See Herbert Rosinski, The German Army, p. 117.

89. Walter Goerlitz, History of the German General Staff, p. 57-58.

90. At that time called the Adjutant-General's office, but carrying out the functions of the old Prussian Military Cabinet, and later so renamed. Ibid., p. 58.
91. Ibid., pp. 69, 74-75.
92. Ibid., p. 67.
93. Ibid., p. 75.
94. Ibid., p. 82.
95. Ibid., p. 84.
96. Eberhard Kessel, Moltke (Stuttgart: K. F. Koehler Verlag, 1957), p. 379-380.
97. Ibid., p. 381.
98. Walter Goerlitz, History of the German General Staff, p. 83-84.
99. Not yet so called. See above.
100. Eberhard Kessel, Moltke, p. 379-380.
101. Walter Goerlitz, History of the German General Staff, p. 84; See Eberhard Kessel, Moltke, p. 395-96 for a more detailed listing of Moltke's contacts.
102. Eberhard Kessel, Moltke, p. 402-403.
103. Eberhard Kessel, Moltke, pp. 380-402, *passim*
104. Ibid., p. 402.
105. Ibid., p. 402-403.
106. Ibid., p. 403-412, *passim*. During the 6 weeks truce, the King took the opportunity to replace Wrangel with Prince Karl Friedrich as the overall field commander.
107. Ibid., p. 418-419 and ff.
108. Walter Goerlitz, History of the German General Staff, p. 86.
109. Herbert Rosinski, The German Army, p. 117.

110. Ibid., p. 120.

111. Walter Goerlitz, History of the German General Staff, p.

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CHAPTER II

OPERATIONAL ART AND THE SCHLIEFFEN PLAN

As the Introduction emphasized, there is a difference between a general system of operations in the abstract and the application of that system to concrete circumstances. Schlieffen's leading operational idea was the movement onto the enemy's flanks and rear. But achieving this movement, in the face of the accidents of terrain, fortifications, transportation nets, and borders, was a problem all its own. A more detailed examination of "the Schlieffen Plan" will help to achieve a closer focus on such questions as: Schlieffen and the General Staff's concept of operations, how they planned to control and coordinate the movements of units in a campaign, and what connection they saw between operations and strategy.

Before turning to the operational conception of the Schlieffen Plan, placing that plan historical context will prove worthwhile. Schlieffen worked within the context of a General Staff tradition, a tradition which, to be sure, he did as much as anyone except the elder von Moltke to create. But General Staff officers before Schlieffen drew up plans for the swift annihilation of an enemy country in a single operational campaign, and they continued to do so long after Schlieffen had left the

scene. Looking at the Schlieffen Plan in isolation makes it seem a more unique and outlandish idea than it really was. Even as good a book as Gerhard Ritter's The Schlieffen Plan: Critique of a Myth can give such an impression.

The fact of the matter is, the German General Staff, starting under the elder Moltke, planned and executed six campaigns for the operational overthrow of an enemy's position between 1864 and 1918: the war with Denmark in 1864, the war with Austria in 1866, the war with France in 1870-71, the attempt to knock France out of the war in 1914 (before the full weight of Russian resources could come to bear), the attempt to knock Russia out of the war (before the full weight of English resources could come to bear), finally the attempt in 1918 to knock the English and French out of the war (before the full weight of American resources could come to bear). Of these six campaigns, all but one against first class opponents, four out of six succeeded. The other two came arguably close to success. In between the actual campaigns, the General Staff spent virtually all its time and resources reviewing the operational lessons of past campaigns (its own and those of others), planning for likely future campaigns, and educating its members (from the Chief of the General Staff on down) to an understanding of operational art.

There was, in other words, a General Staff approach to war, which involved an emphasis on swift campaigns to overthrow the

enemy's armed forces, relying upon skill and planning in the area of operational art to provide the margin for victory in those cases where the German army was not inherently superior to its opponents. During Bismarck's Wars of Unification, Bismarck had already isolated diplomatically Germany's opponents, so the General Staff did not have to worry about the problems of two-front and coalition war. On the other hand, the General Staff's ability to defeat an enemy quickly eased Bismarck's task of keeping that country isolated. In World War I the situation was much different. Germany's opponents were not isolated diplomatically, and she faced a coalition of opponents with greater resources than herself. Still, the response of the General Staff was essentially a variation of its schema for the Wars of liberation. The General Staff tried to defeat the enemy coalition one piece at a time, using the means of operational campaigns. The strategic framework was different, but the means--an operational campaign for the overthrow of the enemy's army--was an old General Staff standby.

To those steeped in Anglo-American strategic thought, there seem to be certain obvious things that one does in a coalition war. First, one settles in for a long war and mobilizes resources to overwhelm the enemy (the assumption usually being that one's own side has the superior resources). Second, one takes pains to keep the friendly coalition intact (relations with allies) and

avoid adding to the enemy coalition. One fights, in other words, a very political war.

The German General Staff in World War I took a different approach in almost every area. The General Staff never really came to grips with the fact that they were in a long war, as the British had from the beginning and the French did after 1915. It is somewhat striking to realize that the German General Staff at no point in time between 1914-18 thought the war could last for more than another year (by 1917 they were right). The General Staff did not fight a four-year war, they fought four one-year wars. The General Staff dealt with the overall inferiority of Central Powers resources by seeking to knock out members of the opposing coalition in operational campaigns. If adding a country with potentially great but little current military strength to the enemy coalition was the price that one paid for knocking out a current member of the enemy coalition (the invasion of Belgium and Great Britain, unlimited submarine warfare and the United States), that was a price the General Staff was willing to pay.

Certainly the Germans lost the war, and their willingness to add such countries as Great Britain and the United States to their list of enemies played a considerable role in their defeat. But one should also recognize that part of the General Staff's strategy did work—they did knock a major member of the opposing coalition, Russia, out of the war. That was one reason it took

until 1918 to bring the overwhelming strength of the Allied coalition to bear. World War I was not simply a war between coalitions. It was a contest between different strategies for dealing with coalition war, and the war would not have lasted so long if the General Staff's preferred strategy had not worked in some measure. The German General Staff was not simply stupid in the way it went about fighting World War I. They had a way of approaching their strategic predicament which made a certain amount of sense.

The basic strategic problem facing Germany before World War I was the threat of a two-front war with France and Russia: a threat which loomed ever larger as France and Russia grew both individually stronger and more committed to their mutual alliance. As a solution to this strategic problem, Graf Alfred von Schlieffen, Chief of the Prussian General Staff, 1891-1905, proposed that Germany should first attack France. If an all-out attack knocked France out of the war before Russia could fully mobilize, then Germany could deal with an isolated Russia later. Schlieffen did not see an initial attack on Russia as an attractive alternative. Russia's generals always had the option of withdrawal into the depths of Russia, delaying a decision until France could effectively attack Germany from the rear. Nor did Schlieffen relish the prospects of sitting on the defensive vis-a-

vis both Russia and Germany, at the mercy of their initiatives in a long war of attrition. ¹

There was a practical difficulty connected with Schlieffen's strategic solution for Germany's two-front problem: France would simply not be that easy to defeat quickly in a major war. There were two main reasons for this. First, the German army was not that much stronger than the French. France had a smaller population base than Germany, but had mobilized a much larger proportion of her male population. Second, after the debacle of 1871, the French had constructed a chain of modern fortifications along their frontier with Germany.

The failure of the Maginot Line to prevent the fall of France in 1940 has led to an underestimation of the value of fortifications in twentieth century warfare, not only in the popular imagination but in many writings on military history. But in fact, when ground forces in this century have confronted complete, modern fortifications—in good repair and adequately manned—they have almost always preferred to try and go around the fortifications somehow, rather than attack them. This is hardly an argument for the uselessness of fortifications. Even if the fortifications do not cover all possible avenues of approach, because they cover some, they restrict the attacker's options. Further, the fortified zone can always constitute what military parlance terms an "economy of force area." That is, the defender

can defend the fortified area with relatively few troops, allowing the defending field army to be stronger elsewhere.

The French border fortifications prior to World War I covered the frontier of France from Switzerland to Belgium, much as did the later Maginot Line. But the pre-World War I fortifications were farther back from the border and embodied a somewhat different philosophy of fortification. A series of major fortifications--each designed for all-round defense and capable of withstanding a major siege--anchored the French line. These fortifications were Belfort, Epinal, Toul, and Verdun. Each had a central citadel surrounded by satellite fortifications in as many as three concentric rings.

The difficulties the Germans experienced in their efforts to take Verdun in 1916 give some indication of the strength of the main French border forts--all the more so when one considers that French officers of the Grandmaison *offensif a outrance* school had caused the removal of most of Verdun's fortress artillery by October 1915. The secret German siege mortar, the 420 mm. "Big Bertha," had smashed a number of Belgian and French forts in 1914, causing all fortifications to fall into disrepute.² Thus when the Germans attacked in 1916, the forts at Verdun were little more than concrete bunkers with only a few guns in armored turrets. Still, they provided rallying and refuge points for the

defense, and even proved able to withstand bombardment by the "Big Berthas."³

Besides these central pillars of the line, the stretches Belfort to Epinal and Toul to Verdun boasted a line of barrier forts. The prime function of these barrier forts was to cover with the fire of their artillery the best sites for crossing certain sections of the Moselle and Meuse rivers. If one draws a line between Toul and Verdun, one finds that the river Meuse runs approximately along that line; if one draws a line between Belfort and Epinal, one discovers that the river Moselle runs along about two-thirds of the way.⁴ This is of course no accident. General Serre de Riviere, the French engineer who had designed the fortification system,⁵ placed the forts so as to enhance the defensive value of the river lines. Thus the fortresses, and the barrier forts between them, amounted to the fortification of river lines which were already strong natural defensive barriers.

Apart from the obvious difficulties connected with a frontal assault, the main fortresses would not be easy to go around either. Behind their rings of satellite forts, Belfort, Epinal, Toul and Verdun could each shelter a field army or more, ready to fall upon the flank of an enemy moving past. In fact, General de Riviere had deliberately left the gap between Epinal and Toul unfortified, as a trap and enticement to the Germans—the Trouee de Charmes.⁶ A German army penetrating the 40-mile gap would be

vulnerable on both flanks to enveloping attacks from French armies sheltering in Toul and Epinal. In like fashion, counter-thrusts issuing from Verdun would imperil any German attempt to work around the northern end of the fortress chain. Moreover, the short unfortified gap between Verdun and the Belgian border, about 25 miles, would greatly constrict the German deployment--if Germany did not violate Belgian neutrality.

Whatever faults they may have had in dealing with the strategic level of warfare, Schlieffen and his pupils were in their element when it came to recognizing these manifold operational difficulties. A march through the southern part of Belgium would be one way to gain the deployment space needed for a move past Verdun. Such were Schlieffen's plans from about 1897 to 1905.⁷ But after years of further study, Schlieffen concluded that even this wider envelopment of the fortress line (already involving violation of Belgian neutrality) was not enough. It was still too easy for the French to stall and perhaps cut off German forces swinging in a short arc past Verdun.

In 1905, Schlieffen decided to flank the French fortification system on a strategic scale.⁸ The bulk of the German army would march straight across Belgium, deploy from the German border to the Channel coast, then swing like a giant gate across northern France, hinging on Verdun. Along the way it would gather up any Belgian, British or French armies that got in its way, drive them

against the Swiss border or the rear of the French border fortifications, and destroy them.

Gerhard Ritter regarded Schlieffen's Plan of 1905 as a "purely operational study," and quotes Schlieffen himself as calling it "purely academic."⁹ The massive sweep through Belgium offered a bold and audacious solution to the operational problems associated with the French fortress barrier. But it did so only at the cost of changing the strategic nature of the war. First and foremost, it almost casually added Great Britain to the list of Germany's enemies. Great Britain was one of the five traditional European great powers, and the only one among them which was truly a world power. Great Britain had the world's largest navy, enormous wealth, the potential to raise a great army, and a history of organizing and holding together coalitions designed to thwart the ambitions of overbearing continental states. Her entry into the war was the factor most calculated to ensure it would not be the short war Schlieffen wanted.

The Schlieffen Plan reflected a definite tendency in General Staff thinking: it traded short-term operational advantages for long-term strategic liabilities. No one personified this tendency more than Schlieffen and his pupils (who included Eric Ludendorff, later General and de facto Chief of the General Staff). It was a policy bound to be disastrous in any long war. Of course the elder Moltke's wars had all been short. His brilliant victories

(*glanzende Siege*) were the model for subsequent generations of staff officers. But they forgot the role Bismarck's diplomacy had played in setting the conditions that made Moltke's short victorious wars possible: isolating the conflict to one major enemy and keeping other major powers on the sidelines.

Nor did the Schlieffen Plan lack for operational difficulties of its own. To start with, there was the matter of the Belgian army and the British Expeditionary Force (B.E.F.), which the violation of Belgian neutrality brought into the field against Germany. Belgium fielded six infantry divisions and one cavalry division in 1914, the B.E.F. amounted to four divisions of infantry and some cavalry.¹⁰ If the Belgian troops were of a low standard, the professionals of the B.E.F. were a different matter. The most obvious immediate task of these divisions would be to impede the execution of the German plan. Adding ten divisions to the enemy's order of battle was the price Schlieffen paid to avoid the French border fortifications--eroding what little margin of superiority Germany had in numbers of troops on the Western front.

Then again, the Schlieffen Plan avoided one set of difficulties with French fortifications only to confront another later on. This was the matter of Paris. Paris was both a very large modern fortification and a railway center. As a fortification it could shelter armies behind its ring of satellite forts, in the manner of Belfort, Toul, Epinal and Verdun. These

armies could either defend passively or issue forth to attack the enemy at a selected moment. It so happens the railway system of northern France radiates from Paris. It would be easy to transfer troops from any sector of the front to Paris, where they could shelter behind the fortifications and pose a standing threat of counterattack.

In the face of the Schlieffen Plan, there was only one sector of the front the French might risk weakening by withdrawing troops. That sector was the eastern frontier, where the fortifications would help hold the line. The only other possibility was to withdraw the troops in front of the German right wing. But the task of the German right wing was to drive the Allied troops in front of it backwards, to destroy them against the Swiss border and the fortifications. Withdrawing some troops from in front of the Germans would only make it that much easier for the Germans to destroy the remainder. Putting no troops at all in front of the German right wing would simply allow them to carry out their plan with no opposition.

Naturally the Germans could launch spoiling attacks against the eastern fortress zone, to prevent the French from stripping it of troops. In his conception of what later became known as the Schlieffen Plan, Schlieffen planned to do just that. When the Germans tried to execute his plan in 1914, they actually made much heavier (and costlier) attacks on the French fortress zone than

Schlieffen had ever contemplated--but to no avail.¹¹ They could neither make any progress against the fortresses nor prevent the French from thinning out the troops holding them--and sending those troops to Paris. The fact of the matter was, the French could hold their eastern frontiers with relatively few men.¹² In the end, the Schlieffen Plan could not entirely avoid the operational effects of the French border fortresses.

The right wing of the German army would have little choice but to pass near Paris, when it completed the great sweeping arc across northern France that Schlieffen contemplated. In the process, the right wing would have to do something about Paris. There were really only two options. The first option was to include Paris in the grand enveloping maneuver. Some units would sweep to the west of Paris, some to the east, and they would rejoin after passing the obstruction. Meanwhile, other units would have to invest and besiege Paris. This was Schlieffen's original intention. However, Schlieffen calculated he would need seven army corps to pass around Paris and about six to besiege the place. This would have been a third of the entire strength of the German army available for the attack in the west (Thirty-three and a half army corps).¹³ Diversion of these troops to the envelopment and investment of Paris would have meant not having enough to carry out the rest of the Schlieffen Plan. In effect,

Schlieffen's plan required more troops than actually existed in the German army.¹⁴

One could hardly hope to find a better example of a purely theoretical operational study. Schlieffen did have a scheme to raise eight new army corps at the outbreak of the war from every scrap of trained manpower at Germany's disposal: reserves, replacement battalions, Landwehr (older reserve troops). The military value of these hastily assembled formations would certainly be open to doubt. They would certainly not be of the same high quality as the reserve divisions and corps of the German field army, whose use (and overall high performance) alongside regular formations came as a nasty shock to the Allies in the 1914 campaign. Commitment of Schlieffen's emergency corps to battle, moreover, would mean putting into the field in the first weeks of the war virtually every man in Germany with any military training. The effect on replacements for the field army, and training of additional manpower, would be catastrophic if the war did not end quickly.¹⁵

This was typical of Schlieffen's preferences in the sphere of military operations. He nearly always preferred to put all the troops available to him in the front line, seeking a quick all-or-nothing decision. The Schlieffen Plan itself is an example. Apart from the question of raising eight army corps on an emergency basis, his plan did not contemplate maintaining a

central reserve for unexpected contingencies. Every major unit had an assigned operational task.¹⁶ There is nothing in military operational art which dictated Schlieffen's choice. Probably most military practitioners would have kept a reserve, even if they did seek a quick victory. By putting every man on the front line, Schlieffen in effect raised the ante. If everything worked, victory would be more sweeping. If it did not work, defeat would be all the greater. In his plan to strip the homeland of trained men, Schlieffen elevated this approach from the operational to the strategic level.

Not altogether surprisingly, the younger Moltke and his staff, when they executed their version of the Schlieffen Plan in 1914, did not choose to envelop and invest Paris, nor to raise the emergency army corps that would have required. They preferred the second alternative for dealing with Paris: to swing the right wing to the east of the fortress city. Of course, then there was a danger of attack on the German right flank from French forces issuing from the city. There is every reason to believe that Moltke and his staff recognized the danger. Anyone with General Staff training would have. According to one of Schlieffen's aides, Schlieffen saw the danger on his last staff ride in 1905. As the "Red" (French) commander was about to concede defeat, Schlieffen suggested that he transport by rail all available troops from the French right to the French left, where they would

envelop the German right wing.¹⁷ This was, of course, exactly what the French did in 1914. Their action eventually caused the retreat of the German armies and the failure of the Schlieffen Plan.

As an operational plan, the Schlieffen Plan was more daring than the norm. It offered certain operational advantages, such as avoiding a direct attack on the French fortifications and almost certainly outflanking the French left for at least part of the battle. But it accepted certain operational disadvantages (let alone strategic implications), the most prominent of which was the danger to the right flank as it passed Paris.¹⁸ If the French could recognize their opportunity and act on it in time, the plan might easily run into trouble.

But as the British general Wolfe once said: "War is an option of difficulties." Schlieffen's Plan may have been, as Ritter puts it, "... never a sound formula for victory. It was a daring, indeed an over-daring, gamble whose success depended on many lucky accidents." ¹⁹ Still, it was an operational plan and at some point the French would have to stop Germans from executing it. They would have to counter the German operations with some suitable military operations of their own.

We have left aside for the moment the central issue of this chapter, the German General Staff's system for the control of military units in an operational campaign. However, this brief

examination of the Schlieffen Plan as an operational plan provides the necessary background for the remainder of the chapter. The use of *Vollmacht* by Col. Hentsch during the battle of the Marne was no ordinary or unimportant matter. Rather it occurred at a crucial point in the execution of the Schlieffen Plan--just as the German right flank ran into difficulty due to an attack issuing from Paris.

Beyond that, in a work which makes so many references to "operations" and the "operational level of war," examining an actual operational plan, and a famous one at that, seems worth doing. It may give the reader some appreciation for the peculiar characteristics of the operational level of war. First of all, a military campaign is a complex dynamic process. It involves maneuvering one's own forces in the theatre of operations, bounded by time and space constraints. This playing field is not of a uniform nature. Terrain features or enemy fortresses introduce an important, if static and non-moving, element of variation. Finally, the enemy moves on the battlefield as well. Both sides maneuver for advantage. Those confused catastrophes known as battles have results that influence the course of further movement and combat. Eventually one side or the other will achieve its strategic objectives, or the campaign will settle down to some sort of stalemate, temporarily or long term.

This is a process in which important advantages accrue to the side which can make appropriate decisions in a confusing environment and act on them quickly. The German command system tried to allow great latitude of decision to local commanders (in 1914, this meant primarily army and corps commanders). At the same time, there was a need for centralized coordination. Accordingly, the high command issued generalized statements of its intentions, to serve as a framework for the independent initiative of subordinates (*Weisungsfuehrung*). There was no guarantee that this system would always produce the right decisions, but it should have produced quicker decisions. Not that the high command could not and did not issue orders. They did, but they also expected appropriate action without orders.

One should never forget that the whole *raison d'etre* of the German General Staff was to assist operational decision making (and the details of its execution). At the highest levels, the Great General Staff in peacetime and the Army High Command (*Oberste Heeresleitung*) in wartime, the Chief of the General Staff and his staff really made the operational decisions. Excellence in operational decision-making was the whole goal of General Staff education and training in peacetime, and its day-to-day preoccupation in wartime. It would be surprising if this did not affect the thinking of General Staff officers concerning the relative importance of operations and strategy.

The younger Moltke was under no obligation to accept what was after all only an operational thought-piece written in 1905 by his predecessor. Moltke made changes to the Schlieffen Plan, and some of them were important. He decided not to violate Dutch as well as Belgian neutrality. This, however, led him to plan a surprise attack on the Belgian fortress of Liege, so as to capture the railways needed to deploy the German right wing.²⁰ The whole German war plan depended on capturing the railways through Liege intact, which in turn put pressure on the German political leadership for a speedy mobilization and declaration of war. These time pressures made a peaceful solution of the diplomatic crises more difficult.²¹ In addition, Moltke made changes of a more purely operational import. He altered the ratio of strength between the German right and left wings; he toyed with the idea of converting the single (ie., on the right flank only) envelopment of the Schlieffen Plan into a double envelopment, with an attack in Lorraine.

After the war, apologists for Schlieffen argued that these changes had somehow ruined the Schlieffen Plan's chances for success.²² These criticisms do not seem particularly telling, indeed almost beside the point, considering that: 1) The Schlieffen Plan had extremely ambitious goals in relation to the forces available to carry them out. 2) The plan had grave

strategic implications. 3) It did not lack for certain operational difficulties of its own.

If anything, the similarities of Moltke's plans to Schlieffen's plans are striking. The basic elements are the same: the decision to attack France first, the swing around the border fortresses through Belgium, the inward wheel across northern France. One can only conclude that Moltke shared Schlieffen's thinking on these issues.

The most interesting question connected with the Schlieffen Plan is its strategic implications, more particularly the connection between the operational and strategic aspects of the plan. Were the strategic aspects of the plan, such as the march through Belgium, really determined by "operational considerations," as apologists for the General Staff (and Germany) have argued? Perhaps a more general question will be useful first: What is the logical connection between military operations and strategy?

Military operations is simply the means toward a strategic end. As such the general logical relationships between ends and means should apply. Strategy, in turn, is the means toward a general political goal: which is the reason for fighting wars. Certainly the strategic end should inform the operational means. This is not really a normative question, although many cast it as such: "Generals really should think more about strategy (and by

extension politics) as they fight campaigns." Achieving strategic goals is generally easier if whoever makes strategy will first decide what strategic goals to pursue. Then the strategist can evaluate whether the strategic goals are sensible (ie., lead to an improvement in political conditions)--and whether they are attainable with the means at hand. In the realm of military operations, the means can definitely determine the ends. That is, operational campaigns will have strategic effects, and not always the desired or intended ones. If those in a position to influence strategy and operations care about the way the world looks after the war, they will do their best to ensure that military operations lead to the chosen strategic ends, and not somewhere else.

If operational means can sometimes determine strategic ends, it is also well to remember that the best-chosen of strategic ends are useless if the means to carry them out are not available. If the Germans seem to have had a tendency to let the operational tail wag the strategic dog, the Anglo-Saxon military world has perhaps paid too much attention to shining strategic goals and not enough to the operational (and sometimes tactical) means of carrying them out.²³ To stick with examples from the World War I era, Gallipoli and many allied offensives on the western front spring to mind. Red arrows drawn on staff maps indicated an offensive leading to the collapse of the German position in

northern France, but the troops could not get past the enemy's front line.

It is striking that in 1914 Germany had only one war plan, despite the varied political circumstances leading to war a great power like Germany might anticipate. It is not intuitively obvious that a war begun over Austria's difficulties with Serbia, where Germany backed up her ally against Russia, should begin with a massive German invasion of France through Belgium. Of course, if one looked at a war in Europe as a sort of giant operational problem, then Schlieffen and Moltke's plan begins to make more sense. Given the existing alliance system, on one side there were the forces of Germany and Austria, on the other Russia and France, with possibly Britain, Italy and Belgium joining in later. The theatre of operations was the map of Europe. Defeating the enemy in detail is always the easiest way to win a battle or a war, and the central powers had the advantage of central position. Concentrating on either France or Russia thus made basic strategic sense for Germany. There were real difficulties with coming to grips with the Russians, who would be less of a threat initially as they mobilized more slowly. The Russians had endless possibilities for retreat. Given the sketchy nature of communications on Russia's western frontier, the farther German troops got into Russia, the harder it would be to get them anywhere else.

There was a certain logic to the Schlieffen Plan, or some modification thereof. Still, it was not by any means the only strategic possibility open to Germany, and the inventive minds on the General Staff could come up with the operational means to different strategic ends. As a starting point, Germany's western border was as highly defensible as France's eastern border. Granted, most of these other options would have led to a longer war than the all-out attack on France--if it succeeded.

In war between two opponents of relatively disparate strength, it makes sense for the stronger side to attempt to wrest a military victory as quickly as possible, particularly if there is a danger third parties might intervene at any moment. In such a war, the quest for operational advantage might take precedence even over (traditional) strategic considerations, which tend to operate over a longer time-frame. Such conditions describe very well the conditions prevailing in Germany's wars of unification. Those wars also were the basis of the General Staffs tradition. But in 1914, Germany faced a different situation: a coalition war between relatively evenly matched sides, in which any military decision would likely take some time, regardless of the wishes of decision makers. In such a long drawn out struggle, strategic and political considerations would achieve a greater weight than in a short war, particularly since relations with allies and the entry of previously neutral parties might make the difference between

victory or defeat. But the Schlieffen Plan was nothing if not an attempt to wrest a quick operational victory and dictate peace in the enemy's capital. The irony is that while Bismarck sought quick victory in his wars to forestall intervention by other powers, the Schlieffen Plan practically guaranteed that intervention. Perhaps more than anything else, the Schlieffen Plan was an attempt to force a new war under changed circumstances into the historical pattern of the wars of unification.

Beyond that, the German war plan of 1914 gave a cast to the rest of the war. By aiming a knockout blow at France through Belgium, Germany ensured that the war would be a struggle for military hegemony on the European continent. The debate over German war aims which began during the war itself is essentially moot. Whatever political aims existed in the minds of the leadership, her military plans were extremely aggressive, and really only consistent with a Europe under German domination. Even when the Schlieffen plan failed and Germany found herself in a long war in which cooperation and allies and the continued neutrality of neutrals was important, the military leadership of Germany continued to seek not just a military victory, but a military victory of the type represented by the Schlieffen Plan.

Having perhaps set the stage with some examination of the operational character of the Schlieffen Plan, and the interaction of those operational characteristics with strategic matters, we

turn to the central concern of this chapter. That is the command system by which the General Staff sought to control military operations in general and the campaign in France in particular. The first and most important command procedure, because it was in daily use, the Germans termed *Weisungsfuehrung*. It is a compound word. *Weisung* means directive or instruction; *Fuehrung* means leadership. Combine the two and you get something like "leadership by directive" in English.

In practice, it meant that higher headquarters, the high command in particular, would do two things. The first was to let subordinates in on the the thinking of the high command by describing the overall intentions of the high command. The second was to issue directives and (usually general) orders to the subordinate units. Then, in theory, the local commander could combine his knowledge of the overall intentions of the high command with his detailed and up-to-date knowledge of the local situation. He would then execute the orders and directives of the higher command, exercising initiative to the fullest in the process. Hopefully the resulting operational decisions would be quicker and better adapted to local realities in a fluid situation.

There is no better way to illustrate what this meant than to quote sections of the directive the Army High Command issued to the armies in France on September 5, 1914. The sections quoted

will be those dealing with the First and Second Armies. This also forms a useful backdrop to the Mission of Hentsch to those armies four days later.

The directive begins with an overview of the general situation. Two paragraphs refer to the First and Second armies:

The enemy has escaped the encircling attack of the First and Second armies ... Further, reports and reliable messages from agents lead to the conclusion that the enemy is moving troops from the line Toul-Belfort towards the west, and that he is also pulling elements from the front of the [German] Third to Fifth Armies. Pushing the entire French army to the southeast, against the Swiss border, is therefore no longer possible. It must rather more be reckoned with, that the enemy is pulling together stronger forces in the area of Paris ... to protect the capital and threaten the German army's right flank.

The First and Second Armies must therefore remain opposite the Paris front. It is their task to counter, using offensive means, any enemy undertakings issuing from the area of Paris. First and Second Armies will support each other in these actions.²⁴

After similar paragraphs dealing with the situations of the other armies, the directive goes on:

Therefore, His Majesty orders: 1. The First and 2. remain on the front opposite Paris and counter offensively enemy undertakings. First Army between the Marne and the Oise. The Marne crossings from Chateau Thierry downstream are to be held ready for relocating forces to the other shore. Second Army between the Marne and the Seine; the taking of the Seine crossings between Nogent and Mery on the Seine would be worthwhile. It is recommended [*es wird sich empfehlen*], that the mass of the [German] armies be held far enough away for Paris to retain freedom of action. ...[a following paragraph gives orders for the cavalry attached to First and Second armies]²⁵

Other than the directive that the two armies are to cover the German right flank and counter "offensively" French thrusts from Paris, the First and Second Armies are certainly given a wide latitude to exercise their judgement.

As with so much else in the General Staff tradition, the practice of *Weisungsfuehrung* seems to have originated with the elder Moltke. In the confusion and unreliable communications of a campaign, Moltke preferred to exercise control by means of generalized directives like the one above. His directives remained in force until he issued a new one, or a previously issued directive finally reached the local headquarters. The local commanders, assisted by their staffs, were to rely on the generalized guidance of the directives, their knowledge of the local situation, and their own educated military judgement. Still, the elder Moltke was no slave of his own system. He kept his own headquarters close behind the front and often took direct control of the battle at decisive points.

Schlieffen, if the evidence of the Kaiser maneuvers is any guide, was not in favor of decentralized control of subordinates. He also once remarked that the movements of whole armies carrying out his plan of attack in France ought to be controlled like "battalion drill." The younger Moltke believed strongly in his uncle's system, perhaps too strongly.²⁶ Beyond that, during the 1914 campaign, the younger Moltke kept his headquarter at a

central location far removed from the front. At the time of the Marne battles, his headquarters was in Luxembourg. Moltke felt that the exigencies of establishing telephone nets militated against too frequent changes of headquarters, and that his place was at the communications nexus.²⁷ But given the difficulties of keeping telephone lines working, particularly with respect to the rapidly moving armies of the right wing, the Army High Command was often badly out of touch. Even a decentralized system such as *Weisungsfuehrung* required some minimum of communications between the high command and subordinate units. But in the event of complete breakdowns of communications, there was available an emergency means of control: *Vollmacht*.

In the course of fluid field operations, the kind of war the General Staff sought and prepared for, communications between higher and subordinate headquarters might easily break down. The exchange of information necessary for the proper functioning of *Weisungsfuehrung* would cease or suffer from delays and interruptions. A lower-level headquarters would stop receiving new missions and a sense of the higher command's overall intentions, the "sense of the whole." The commanding headquarters²⁸ would not get a sense of the local situation, and lose the ability to assign missions sensibly and plan for future operations. But an officer armed with *Vollmacht*, familiar with the view of the situation at commanding headquarters, could travel to

local headquarters, assess the local situation, and make immediate decisions--still in accordance with the overall commander's intentions.

Such a use of *Vollmacht* was certainly an emergency procedure, but not an *ad hoc* one. The purpose of using *Vollmacht* was not to replace the normal command and control system, but to enable it to function under difficult conditions. *Vollmacht* grew out of German army command and control features such as a semi-collegial relationship between a commander and his Chief of Staff, *Weisungsfuehrung*, and acting in the sense of the whole. The use of *Vollmacht* by the General Staff in WW I both grew out of and depended upon the continued existence of these other features of the German army command system. The operation of *Vollmacht* only makes sense in that particular context.

For instance, it would be wrong to think that an officer holding *Vollmacht*²⁹ was somehow a replacement for the local commander or an abdication of responsibility by the higher commander. Certainly the holder of *Vollmacht* had extraordinary powers. By combining in his own mind the intentions of the high command and knowledge of the local situation, then making the necessary decisions himself, the holder of *Vollmacht* acted in the role of both the local and higher commander. But the higher commander granting *Vollmacht* expected the holder of *Vollmacht* to follow the higher commander's intentions as closely as possible.

The commander still expected obedience--but obedience to his intentions, not to a detailed set of instructions.

One might term this use of *Vollmacht* as "*Vollmacht* in the context of military operations." This use of *Vollmacht* grew out of the General Staff's ordinary business--helping to order military units about. Specifically, *Vollmacht* was an extension of *Weisungsfuehrung*.³⁰ *Weisungsfuehrung* was generally an element in orders given at the division, corps, or army level. In other words, *Weisungsfuehrung* was an accepted procedure at the level of command populated by General Staff officers. It was at this same level of command that one would have expected *Vollmacht* to operate.

Vollmacht did operate at this level in the very opening months of the war. At the beginning of World War I, it was a command procedure widely understood at the command levels where General Staff officers operated. *Vollmacht* may have been an exceptional procedure, but it was not an unimportant one. It influenced if it did not indeed cause the attack and retreat of certain German armies, and at critical moments.

The clearest example of this was the mission of Lt. Col. Hentsch to the German First and Second Armies on September 8th and 9th, 1914--the crisis of the Battle of the Marne. The Hentsch mission involved the sending of one Lt. Col Hentsch from the Army High Command headquarters in Luxembourg to the First and Second

Army Headquarters, located near the Marne River in France. Hentsch had a mission to reconnoiter the situation of the two armies. But he also had *Vollmacht* to (at the least) coordinate the retreat of the two armies if that should become necessary. His *Vollmacht* may have been more extensive than that: the authorization to order the retreat of the two armies. Certainly Hentsch seems to have believed and acted upon the latter assumption.³¹ Whatever the exact nature of Hentsch's *Vollmacht*, his trip to First and Second armies played a large role in the decision of both army commanders to retreat. This retreat from the Marne was one of the most fateful operational decisions of the war. It signalled the failure of the General Staff's only plan for fighting the war.

The importance of the Hentsch mission caused the German official history of the war³² to examine the mission and the circumstances surrounding it in minute detail--a full 50 pages of text.³³ This critical examination, coming as it did in the middle of the 1920s, made use of sources not available now. For instance, there was an extensive correspondence with surviving principals of the affair, although even in the 1920s some of the most important were already dead, notably Hentsch and Moltke. The researchers also used records from the military archives at Potsdam, destroyed in a 1945 bombing raid. Most importantly for our purposes, the author(s) of this section³⁴ clearly possessed a

good working knowledge of German army procedure and the workings of *Vollmacht*.

Two questions preoccupy the German official history's account of the Hentsch mission. The first of these questions was whether the withdrawal of the First and Second German armies during the Battle of the Marne was really a military necessity. Given that Germany (arguably) lost the war as a result of this retreat, this preoccupation is understandable. However, the question is not a central concern of this work. The German official history maintains the retreat was not a military necessity. Less drastic measures would have staved off defeat and even brought victory.

While the official history makes a case for its position, whether or not the German First and Second Armies should have retreated from the Marne is a complicated issue. Since even today no one has come up with a satisfying method of modeling the complexities of ground combat at the operational level, such questions must remain a matter of military judgement, more or less informed.

A second preoccupation of the German official history is whether Hentsch exceeded his authority. While this question is also not of central concern here, this preoccupation of the official history is exceedingly helpful. The official history subjects the circumstances surrounding Hentsch's *Vollmacht* to the utmost scrutiny. A closer examination of a mission involving

Vollmacht and the details surrounding it probably does not exist in the whole of German military literature. In the end, the official history concludes that Hentsch did not exceed his authority, and that with a certain amount of confusion, the actions taken reflected the wishes of Moltke.³⁵

For our purposes the important issue is not whether Hentsch exceeded his authority or not. It is important that everyone of any importance Hentsch met on his mission knew what he meant by *Vollmacht*--without having it explained. The officers Hentsch met sometimes questioned whether he actually had a sweeping *Vollmacht*, or refused to be bound by it. But no one asked Hentsch what on earth he was talking about, or considered *Vollmacht* an invalid procedure. Presumably, then, *Vollmacht* had a certain widely understood meaning among General Staff officers and higher-level commanders. Since *Vollmacht* was not a matter of formally defined regulations, but rather an outgrowth of General Staff procedure, only study of the its use can reveal what it meant to those who used it.

Whatever the particulars of the situation, Hentsch used *Vollmacht* to make the most important operational decision of the German army in World War I: the decision to retreat from the Marne. Because of the importance of that decision, the German Official History examined Hentsch's activities just before and during his decision in great detail. The account in the Official

History offers a unique opportunity to see how the German command system really functioned in the field in 1914: operational plans, *Weisungfuehrung*, and *Vollmacht*. The next chapter examines these issues in detail.

-- Notes --

1. For a thoroughgoing and insightful discussion of the Schlieffen Plan, see Gerhard Ritter, The Schlieffen Plan: Critique of a Myth (Oswald Wolff (Publishers) Limited, London, 1958), *passim*. For discussion of the strategic and operational considerations which led Schlieffen to formulate his famous plan, see particularly pp. 17-48.

2. Alistair Horne, The Price of Glory: Verdun 1916 (New York: Penguin Books, 1981), pp. 58-59.

3. *Ibid.*, pp. 242-244.

4. For a detailed map of the French border fortifications, see the splendid maps included at the end of: Reichsarchiv, Der Weltkrieg 1914-1918, Vol. III: Der Marne-Feldzug: Von der Sambre zur Marne (Berlin: E. S. Mittler & Sohn, 1926), especially map 5. The maps at the end of Ritter, The Schlieffen Plan, on pp. 186-192 are not as good but give the general idea.

5. Horne, Verdun, p. 17.

6. *Ibid.*, p. 18.

7. Ritter, The Schlieffen Plan p. 39-46.

8. *Ibid.*, p. 46.

9. *Ibid.*, p. 46. The Schlieffen Plan had two aspects. The sweep around the French border fortifications constitutes the operational aspect. The decision "France first" constituted a strategic decision. Interestingly, Gerhard Ritter suspects an underlying political bias in Schlieffen's thinking, which may have influenced the strategic half of the plan ("France first"). Ritter thinks he detects the "dyed-in-the-wool Prussianism of which the elder Moltke had been so completely free" ... "The tradition of seeing in France the 'real enemy' and in Russia the 'real friend.'" In other words, Schlieffen thought autocratic Russia and autocratic "Prussia" (Germany) might easily be allies, whereas one could only expect hostility from republican France. *Ibid.*, p. 32-35.

10. Barbara Tuchman, The Guns of August (New York: Macmillan Publishing Co., 1962; reprint ed., New York: Bantam Books, Inc., 1978), p. 127-128, p. 228.

11. Ritter, The Schlieffen Plan, p. 64-65.

12. Ibid., p. 65-66.

13. Ibid., p. 61.

14. Ibid.

15. Ibid., p. 62.

16. Ibid., p. 42.

17. Ibid., 60n34. Ritter cites an article in the Berliner Boersenzeitung of May 6, 1930 as his source.

18. This is not the place to discuss all the operational problems of the Schlieffen Plan, such as the limited space available for deploying the right wing, the difficulty of supplying it, and the difficulty of switching troops between the German right and left wings. See Ritter, The Schlieffen Plan, *passim*.

19. Ibid., p. 66.

20. Ibid., p. 165-67.

21. Ibid., p. 90.

22. See for instance Wolfgang Foerster, Aus der Gedankenwerkstatt des Deutschen Generalstabes (Berlin: E. S. Mittler & Sohn, 1931), *passim*. The probable "political" biases of many of these Schlieffen apologists are aparent: the General Staff in general and the sainted Schlieffen in particular were incapable of military error, the military misfortunes of the 1914 campaign can be laid at the door of the weakling Moltke. In short, a variation of the "stab in the back" legend. Still, the arguments concerning operational matters have a certain genuine heat to them, which is also typical of the General Staff way of thinking and those affected by it.

23. In fairness to the Anglo-Saxons, the Germans had a similarly dilatory attitude toward questions of logistics.

24. Reichsarchiv, Der Weltkrieg, 1914-1918, vol. 4 (Berlin, E. S. Mittler & Sohn, 1926), p. 3.

25. Ibid., p. 4.

26. Ibid., pp. 535-537.

27. Ibid., p. 519.

28. The use of terms like "commanding headquarters" and the general reference in this section of "headquarter" rather than "commanders" is deliberate. In the functioning of the German command system, the interaction between headquarters mattered--not just the interaction between commanders. Commanders made the final decisions, but not all the decisions. This is not to say simply that their staffs relieved them of detail work. The Chief of Staff and the Operations Officer (Ia), together with their General Staff assistants, originated much of the operational planning and influenced the decision-making process. In addition, General Staff officers at a given headquarter talked continuously to General Staff officers at higher (or lower) headquarters. This use of "staff channels" either contributed to good communication and the "sense of the whole" or subverted the chain of command, depending on the situation and one's point of view. Commanding officers often inclined to the latter view.

29. The use of an awkward phrase like "the holder of *Vollmacht*" is to avoid introducing any more German expressions into the main text than necessary. There is a noun in German which conveys the meaning "the holder of *Vollmacht*" very neatly: *Bevollmaechtigte*. My apologies to Germanists.

30. The author is indebted to [then] Major Ekkehard Guth at the Militaergeschichtliches Forschungsamt in Freiburg, who in 1983-84 pointed out to me that *Vollmacht* was an extension of *Auftragstaktik*, the modern term for *Weisungfuehrung*. Sources from the World War I period have confirmed the accuracy of Guth's observation.

31. See the extensive discussion below on Hentsch's mission and the nature of his *Vollmacht* for support of these assertions. Narrative considerations prompted their inclusion here.

32. Reichsarchiv, Der Weltkrieg, Vol. 4.

33. Ibid., pp. 220-270, together with an appendix on source material, pp. 545-548.

34. Volume 4 of the official history does not give the names of the authors of particular selections. However it seems likely the individual(s) working on pp. 220-270 had military experience at a fairly high level.

35. Reichsarchiv, Der Weltkrieg, vol. 4, pp. 529-530.

CHAPTER III

WEISUNGSFUEHRUNG

The previous chapter discussed some of the operational aspects of the Schlieffen Plan, such as the problem of the French fortress zone and the problem of Paris. It also introduced the command and control procedures by which the General Staff intended to exercise control during the campaign. This chapter will consider what happened when the general operational plan and the control procedures encountered the myriad frictions of war and a living, reacting enemy.

The focus here is not on the whole of the campaign, but on the operational events and decisions which led up to the sending of Lieutenant-Colonel Hentsch to the German armies of the right wing, leading to the decision to break off operations there and withdraw. This signalled (though it was not clear at the time) the failure of the Schlieffen Plan, and with it, the General Staff's only plan for fighting the war. The Hentsch mission and the events leading up to it offer a good picture of how *Weisungsfuehrung* and its extension, *Vollmacht*, worked at the beginning of the war.

The German General Staff's decentralized command and control techniques, *Weisungsfuehrung* and *Vollmacht*, played a pivotal role

in this campaign. The elder Moltke had developed decentralized control to function even in the confusion inherent in the movement of large armies across large distances. The German invasion of France in 1914 featured larger armies than the elder Moltke ever commanded, and distances equally great. The Chief of the General Staff at the outbreak of the war, von Moltke's nephew Colonel-General Helmuth von Moltke, believed for theoretical reasons in decentralized control and in giving his subordinates full rein. Beyond that, communications difficulties, chiefly the lack of land telephone lines and the extreme slowness of radio communications (due to delays in encoding and decoding messages), made tightly centralized control nearly impossible in any case.

In a well-functioning organization, decentralization is largely a matter of how much initiative those in charge allow to subordinates. The top leadership controls how much decentralization will occur. Looking at the practice of the German army over a period of time, different Chiefs of the General Staff (who issued the highest-level orders in time of war) had different opinions on the appropriate degree of decentralized control.

The elder von Moltke, who essentially founded the German General Staff system during the three wars of German unification, controlled military forces through the use of general directives--*Weisungen*. The directives outlined in broad terms the operational intentions of the High Command, leaving execution to

the initiative of the army commanders. But Moltke was master of his own system. He kept his headquarters as close as possible to the front, and did not hesitate to issue detailed, specific orders to his generals, when he felt the situation warranted.¹

The elder Moltke also used on occasion a control device which sounds very much like *Vollmacht*. An officer of von Moltke's staff during the Franco-Prussian War described the practice like this:

If it was necessary to provide explanation of a [royal] decree [ie., order--in theory the King of Prussia, Wilhelm I, issued all orders on von Moltke's advice] and to secure agreement in the views (*Ansichten*) of the High Command and the Army Headquarters, then one of the older General Staff officers, generally one of the department chiefs, was sent. This occurred in particular on the battlefield, for the purpose of keeping the High Command informed of events at more distant points. The Chief of the General Staff and the General-Quartermaster remained on the other hand always in the immediate presence of the king during the battle. Only once was this rule departed from for a short time, in fact at the battle of Gravelotte-St. Privat.²

This practice of von Moltke's evidently had two purposes. First, it kept the operational intentions of the High Command and the army commanders from diverging too widely. At any given time, von Moltke had a certain conception of how he wanted a campaign to work out as a whole. His operational intention for a given army derived from this overall scheme. Von Moltke wanted his army commanders to react to local circumstances and take advantage of opportunities, but within the framework of his operational intentions. Therefore, it was important that the High Command and

the army commanders share the same views on the operational situation. Secondly, these visits of department chiefs of the General Staff to the front served as a means of keeping the High Command informed of developments at the front. This news of how the campaign was actually going might in turn change von Moltke's further operational intentions, in whole or in detail.

Moltke's *Grosses Hauptquartier* during the Franco-Prussian War included only 13 General Staff officers. There were three department chiefs, all of whom were lieutenant-colonels.³ As seen above, it was these department chiefs that Moltke would despatch to the front on special missions. Thus the despatch of Lieutenant-Colonel Hentsch to the front during the Battle of the Marne in 1914 was not the anomaly it might seem to be. Hentsch was the department chief for intelligence, and the practice of sending a department chief to the front to sort out difficult situations had a clear precedent in the command practice of the great elder Moltke.

The next Chief of the General Staff (after Count Waldersee's short term in office), Count Schlieffen, did not believe in leadership by directive to the degree the elder Moltke did. Schlieffen did not like the idea of giving army commanders the chance to mess up his carefully laid plans. At one time he he said that in modern war one should control the movements of armies like companies of soldiers performing battalion drill.⁴ This

conjures up the image of a battalion on a parade ground, with blocks of soldiers moving in lockstep in response to shouted words of command. Doubtless Schlieffen said this partly for effect, but if he had ever commanded as Chief of the General Staff in wartime, he probably would have allowed his subordinates much less discretion than either his predecessor or his successor.

The appointment of the elder Moltke's nephew, Helmuth von Moltke (the younger) as Chief of the General Staff in 1906 marked a return to *Weisungsfuehrung* as the preferred method of command control. For one thing, the younger Moltke took his famous uncle as his exemplar in military matters⁵ (as did the General Staff as a whole). For another, the younger Moltke believed that detailed control of maneuvering armies from a central headquarters would be even more difficult than in his uncle's day. Mass armies and increased firepower would not fail to affect the characteristic forms of military operations. In the wars of the elder Moltke and even in Napoleon's day, a military theatre might be several hundred kilometres in compass. But however much parts of the contending armies might maneuver for advantage within the theatre of war, armies would unite to fight their battles on fronts of at most a few tens of kilometers. Operational art in this environment consisted largely in bringing about the concentration for decisive battle on terms favorable to oneself, such as forcing the the other side to battle before it could concentrate

completely. The elder Moltke's victory at Koenigratz in 1866 was a classic battle of this type.

Mass armies by themselves would have tended to lengthen the fighting fronts, but the geometric increases in firepower between 1870 and 1914 had an even more pronounced effect. Increased firepower forced armies to thin out their fighting fronts to reduce casualties. Alternately, increased firepower allowed armies to cover a given length of their front with fewer troops, since each individual soldier generated greater firepower. Eventually, in the First World War, this would result in fighting fronts stretching from the Swiss border to the North Sea. Just prior to World War I, military theorists such as the younger Moltke could foresee this process, although they underestimated its full extent. But it was clear to von Moltke at least that a modern general would have to control, or at least attempt to control, not only movement but also fighting along fronts hundreds of miles long. It would no longer suffice for the commanding general to make sure his headquarters was in the immediate rear of the decisive concentration of the whole army prior to the decisive battle, as it had in his uncle's day. The younger Moltke foresaw these problems, as remarks of his to his staff in the last year before the outbreak of the war show:

... It will not easily be possible to unite the unbelievable masses of the army for a joint decisive battle. It will probably always at first come to fractional battles of individual armies or army

groups. If the conduct of these battles leads to a common result, which lies within the sense of the whole operation, then the operation was correctly conducted. These individual battles can however lead to fragmentation and thereby destroy the whole operation. They can lead to a situation in which everything dissolves into individual fighting groups, each of which pursues its own particular purpose, ... The High Command will not always be able to bring to battle under favorable conditions every army in the extensive operational area. However it probably can and must keep in view a great, clearly recognized, logical, and firmly held goal, and continually direct all forces towards this goal.⁶

Clearly von Moltke saw the problem, if not necessarily the solution. As he observed on the last General Staff ride before the outbreak of the war, "A battle with an extent of over 300 kilometers has so far only been fought on paper." But such battles would certainly happen if general European war broke out. The passage quoted above almost prophetically describes von Moltke's situation during the campaign in France. With armies clashing along a front hundreds of kilometers long, he would strain simply to form a coherent picture of the action. He attempted to achieve coordination primarily by formulating general operational goals, which were to form a framework for the actions of the commanders of the individual German armies. However, in practice, there was a marked tendency for the battles the individual armies fought to take on a life of their own, divorced from any overall operational guidance.⁷ While Moltke's system perhaps exercised the only form of control that was possible under

the circumstances, it did not, when Moltke actually directed armies in battle, bring "brilliant victories."

The younger Moltke's solution to the problem of controlling a modern campaign was his own version of *Weisungfuehrung*. If the elder Moltke had had been unable to control directly the movement of the parts of the army to the decisive battle, but stood ready to intervene in the decisive battle itself, his nephew gave up, as a theoretical proposition, the prospect of directly influencing any battles at all. There would simply be too many of them over too wide a front for that. The High Command could only hope to set up the operational framework within which the individual armies would maneuver and fight their battles.

As the German Official History points out, under this system, strategic initiative passed largely to the army commands.⁸ The army commanders, in attempting to carry out the High Command's operational scheme, would have power not only to maneuver but also to fight battles on their own initiative. This is critical, since the results of battles overcome the enemy's resistance to an operational plan of campaign. Two armies cannot maneuver to opposing ends without eventually coming into conflict. The elder Moltke tried to control the operational factors that would (at least partially) govern victory or defeat in the decisive battle. The younger Moltke had to leave the operational decisions directly affecting (more widely scattered) battle in the hands of his army

commanders. The High Command would have to operate at a higher level of abstraction: the operational goal or intention of the campaign or major fractions of it.

So under the younger Moltke's leadership, an aspect of operational leadership once exercised directly by the High Command passed to the army commanders. The extended fronts, which mass armies and increased firepower produced, prompted the younger Moltke to recommend another change. He believed the army commanders themselves should operate on the basis of *Weisungsfuehrung*, as they would face difficulties staying abreast of the situation of their component units analogous to those of the High Command itself. On a General Staff ride he stated, that even at the level of (individual) army command "the issuance of a strict Army Order will not be practical, and one will have to restrict oneself to general directives."⁹

This marks the beginning of an important process in the history of the German army: the diffusion of *Weisungsfuehrung* to ever lower levels of command. In the days of the elder Moltke *Weisungsfuehrung* had evidently been a matter strictly between the High Command and the army commands, with detailed, strict orders prevailing at lower levels. Now, prior to World War I, the Chief of the General Staff recommended that army commands run their commands on the basis of *Weisungsfuehrung*, which would mean the armies would control their constituent corps in terms of

Weisungsfuehrung. *Weisungsfuehrung* would tend to spread even farther down the chain of command in the German army during World War I. In fact, as it became clear that battalion, company, platoon, and even squad commanders could no longer command their units under fire by standing in the open and shouting orders at them, *Weisungsfuehrung* spread even to the smallest units. The difficulties of control in the tactical environment had come to resemble the difficulties of control in the operational environment. It was hard for commanders to know even what their subordinates were doing, let alone ordering them about in detail. *Weisungsfuehrung*, defining a mission for subordinates and letting them carry it out as best they could, offered a way to exercise control in the new tactical environment. The use of *Weisungsfuehrung* at the tactical level was not universal in the German army even by the end of the war, but increasingly it became a matter for not just for generals, but for lieutenants and sergeants as well.¹⁰

Such were the theoretical reasons why the younger Moltke felt that, in a future war, army commanders would have to exercise a hitherto unprecedented (even in the German army tradition) degree of operational initiative. A contemporary and co-worker of the younger Moltke's expressed the latter's views on the subject as follows (this citation goes far to explain von Moltke's behavior

during the Battle of the Marne, when he was extremely reluctant to "interfere" with the detailed decisions of the army commanders):

... Colonel-General von Moltke trusted implicitly in the education of the [army] commanders-in-chief and of their Chiefs [of Staff], deepened in years of painstaking study. In the conviction, that the Army Headquarters stood nearer to events and could judge the situation better than would be possible for the High Command in the rear, he was of the opinion that friction of all types would be more easily smoothed out through such intellectual [*geistig*] cooperation than through orders from the O.H.L.¹¹

It may be that Moltke's personality reinforced his theoretical views on allowing his subordinates a certain latitude. This is the view of the German Official History, which speaks of his "quiet and modest nature"¹² and also claims that "This [Moltke's] exaggerated application of the principle of restraint on the part of the High Command corresponded only too well with his basic nature."¹³ But the Official History also believed the German army should have won the Battle of the Marne and largely blames Moltke's indecision for the defeat.¹⁴ One need not accept this evaluation to note the role personality may have played in Moltke's actions during the Battle of the Marne. At a minimum, von Moltke's personality did not, in a crisis, override his theoretical views on the proper role of the High Command. Von Moltke lacked the imperious nature common to many successful (and unsuccessful) military commanders.

The younger Moltke also had followed a somewhat unusual career course in the German army. He had not gone through the "School of the General Staff."¹⁵ Nor had he spent a great deal of time in line command positions. For nearly fifteen years he had served as an aide-de-camp, first to his famous uncle, the elder Moltke, and then to the young Kaiser Wilhelm II. These years in the shadows of power, without serious personal responsibilities, did little either to harden his character or inculcate the habit of command.¹⁶

The younger Moltke's respect for the prerogatives of his subordinate commanders went beyond the sensible, in the view of the German Official History. It cites fairly concrete instances in which Moltke, during the campaign in France, held back too much:

In his trust in the superior insight of the subordinates, Colonel-General von Moltke went so far as to refuse intervention in the powers of the army headquarters, even when these asked for a decision--in cases of evident differences of opinion, which could not be worked out without assistance from the Chief of the General Staff of the Field Army--or where it became evident that the army headquarters, in ignorance of the overall situation, did not act in the sense of the High Command's [intentions]. When one of his co-workers, in the course of the operations, recommended the sending of an intelligence officer to look over the situation at the army headquarters, Colonel-General von Moltke saw in this an unwarranted "mistrust" towards the army commanders.¹⁷

Like much else connected with the General Staff--the relationship between a commander and his Chief of Staff, the

education of a General Staff officer into an operational expert-- personal factors played a role in the use of *Weisungsfuehrung* and *Vollmacht*. The younger Moltke used these command and control devices within the context of a German army tradition that transcended any single individual. But his personal style, whether based on his theoretical views on modern warfare or on personality factors, colored his actions. His use of *Weisungsfuehrung* and *Vollmacht* lay towards an extreme along the continuum between strict and loose control of subordinates.

During the actual campaign in France, technical difficulties in maintaining communications between the High Command and the army headquarters contributed to the loose direction of units. The only truly reliable means of rapid communications was the telephone, but keeping lines open to the rapidly moving armies of the right wing was difficult. At the time of the Battle of the Marne, the *Oberste Heeresleitung* (OHL) in Luxembourg had telephone connections only to the army headquarters of the Fourth, Fifth, Sixth, and Seventh Armies--the armies of the German left and center.¹⁸ Radio but not telephone communications were available for the armies of the critical right wing, the First, Second and Third Armies.

Radio was not much help. In 1914 it was in its infancy, short-ranged and often unreliable. During the Battle of the Marne, radio communications between the OHL and First Army

Headquarters were particularly unreliable, as First Army had essentially marched beyond reliable radio range.¹⁹ Besides the question of reliability, there were long delays due to encoding and decoding messages. It often took more than 24 hours for a message to get from the army headquarters to the OHL. For instance, an important message First Army sent out on the morning of September 4 did not reach the OHL until the afternoon of September 5.²⁰ There were many similar examples.

Even when radio communications were working, and despite coding delays, radio was unsuitable for messages of any great length. (The cumbersome coding process was to blame for this as well.) When the High Command wanted to send out a lengthy message it used staff officers traveling in automobiles to deliver written copies.²¹ Obviously, this sometimes took a long time. These delays were a matter of some importance, particularly as the German command system worked on the assumption that subordinate commanders were "in" on the operational intentions of the High Command. Likewise, the OHL needed to know the situation of the various armies, what they could and could not accomplish in the operational sense.

Given that, "overheard" radio messages (ie., received and decoded by a headquarters other than the intended recipient) played a more important role in German decision-making than one might expect. Sometimes the OHL used this method to figure out

what the field armies were up, by listening in as the army headquarters talked to each other.²² Alternately, sometimes army headquarters out of touch with the OHL would attempt to read the overall operational situation from reports of the other armies.²³ The army headquarters listening in could then base its future actions on the demands of the overall operational situation, even without guidance from the OHL.

A trained General Staff officer could glean a surprising amount of information in this fashion. For one thing, he knew how the campaign was developing in general operational terms. For another, he knew how any other General Staff officer was likely to react to a given operational situation, thanks to common training and experience. With such a framework to work with, even fragmentary information would often allow the General Staff officer to make reasonable guesses about things he did not actually know.

Not all the failures in German communications were technical in nature. The Official History discusses the difficulties the OHL had in forming a picture of the battlefield "in part as a result of insufficient and delayed reporting by the army headquarters."²⁴ Even though the army headquarters were often in the process of fighting battles, keeping the High Command informed of operationally significant developments was a vital part of good staff work. In addition, the reports of some armies exaggerated

French defeats and the disorganization of their retreating forces.²⁵ While estimating the condition of a retreating enemy is a difficult military judgement, some armies were clearly too ready to proclaim victory. Despite the aura of competence surrounding the General Staff, its military reporting left something to be desired in the 1914 campaign.

The most basic problem with communications during the campaign in France was that the OHL was too far to the rear, in Luxembourg. The simplest solution would have been to move the headquarters further forward, closer in particular to the far-ranging (and critically important) right wing. Parties at the OHL did propose such a move. The technical nature of telephone nets, however, would have made such a move awkward.²⁶ A telephone net comes together at a particular point, in this case the headquarters in Luxembourg. Move that point, move the headquarters, and one must rebuild the whole telephone network. In the interim, von Moltke would have lost most of the communications he did have.

Another solution to the communications problem would have been for von Moltke to travel to the front himself, with only a few staff officers to assist him, as a sort of a flying headquarters. But as a formal matter, the OHL could only issue orders in the name of the Kaiser. Von Moltke did not feel justified in issuing orders when the Kaiser was not present to

approve them. While in the opinion of the Official History, the Kaiser would not have stood in the way of some solution, either himself accompanying von Moltke to the front or possibly authorizing him to issue his own orders, von Moltke did not make the attempt.²⁷

Even with all these problems, the OHL could have acted more aggressively to maintain communications during the campaign in France. The German Official History complains about the things left undone. For instance, the OHL did not send communications officers to each army headquarters to coordinate effective use of the means of communication that were available: radio, wire, automobiles, airplanes. Such communications officers were readily available. Likewise, the OHL did not establish relay stations for messages at places like Rheims, which had undestroyed wire communications to Luxembourg.²⁸

Given von Moltke's views on the control of armies in modern war, it is not surprising he did not do these things. He attempted to control his armies using the traditional method of *Weisungsfuehrung*, and at one critical juncture, *Vollmacht*. Given how poor German communications were (in a fast-moving situation), the wonder is not that the German command system performed badly in the Battle of the Marne, but that it worked at all. Whatever von Moltke's misgivings about interfering with his subordinates, poor communications did not help *Weisungsfuehrung* function any

better. Both the OHL and the army headquarters needed to know more about what the other party was thinking than they actually did. The succeeding chapter should show that clearly enough. The Allies, moving backwards rather than forwards, could rely on an undestroyed peacetime communications net for their communications.

The chain of operational developments and decisions which eventually led to the German retreat from the Marne began to take form around September 1. In the last days of August the right wing of the German army had defeated the BEF and the left wing of the French around Amiens. The defeated Allied forces retreated in a south-westerly direction. Initially, the German First and Second Armies had pursued them to the southwest, but after August 30 they had marched in a mostly southerly direction. This threatened the main body of the French army, rather than those forces which had marched away to the southwest after Amiens.²⁹

The OHL in Luxembourg could follow the operational situation of the German right wing only with difficulty, due to long communications delays. To a large extent the high command formed its picture of the situation from fragmentary reports and inference. Nevertheless, by the evening of September 2, von Moltke felt the time had come to give the German right wing a new operational directive. In essence von Moltke confirmed what was already happening in the field. The German right wing was to swing to the southeast, attempting to outflank the main body of

the French army. This was an adaptation to the circumstances of the leading operational idea of the Schlieffen Plan: to outflank the French army's left wing.³⁰

Von Moltke made another decision of equal importance. In order to meet the standing threat of an Allied attack from Paris as the German right wing swept by, he directed the German First Army to guard against that threat. First Army would devote itself to that task rather than the continued pursuit of the retreating Allies. In order to better carry out this mission, First Army would follow Second Army in echelon (that is, behind Second Army). On September 2, First Army was actually echeloned forward of Second Army. As a result, First Army was in a much better position to flank the left wing of the French main body than Second Army. By relegating First Army to the role of flank guard, von Moltke greatly lessened his chances of actually flanking the French main body. Essentially, Second Army would have to maneuver into a position to flank the French left--a position First Army was already in. But von Moltke did not want to risk leaving his right wing exposed to attack from Paris.³¹

Due to the limitations of the communication system, von Moltke did not adequately convey his line of thinking--"the sense of the whole"-- to his field commanders. On the evening of September 2, the OHL transmitted the following laconic directive to First and Second Armies: "Intention of the OHL, to push the

French in a direction southeast of Paris. First Army follows Second Army in echelon and further provides flank protection for the [entire] army."³²

This OHL directive came to von Kluck's attention on the morning of September 3. At the same time, he received reports that one of his corps commanders, acting on his own initiative, had fought his way over the Marne River the previous night and stood ready to continue the attack on the opposite shore. The Marne River was a potentially important barrier to any southeastern wheel of the German right wing, which Second Army planned to reach only later that day. The initiative of von Kluck's corps commander sharpened the dilemma von Moltke had glimpsed from Luxembourg: only First Army was really in position to flank the left of the French main body, but equally only First Army was in position to provide flank coverage for the German right wing.

Von Kluck estimated the chances of Second Army flanking the French as being low. Second Army could do no more than follow in the path of the retreating French forces, whereas First Army could at least hope to cut off their retreat. In this race First Army had a positional advantage over the Second Army: it was ahead of Second Army and closer to the French flank. One of von Kluck's corps was already across the Marne, with two of his other corps in a position to support its advance. If these corps stopped their

advance and retraced their steps to the northwest, to cover against an attack from Paris, unquestionably the best chance to actually flank the French left would be lost.³³

Von Kluck had a choice, then. He could obey the letter of the OHL's directive and move into position to block an advance from Paris. If he did that, he would effectively give up the chance to achieve von Moltke's overall objective in this situation--to flank the French left. On the other hand, von Kluck could disobey the OHL's explicit directive for the First Army in hopes of achieving its overall aims for the German right wing. This would, however, mean accepting the risk of a flank attack from Paris.

Von Kluck's dilemma shows the tension between the demand for centralized control and local initiative inherent in the German command and control system. For von Kluck to move to the southeast would mean substituting his judgement for that of von Moltke. On the other hand, von Kluck's superior knowledge of the local situation might mean that he should do just that. Due to developments on the scene which von Moltke could not follow in detail, Second Army was not in position to flank the French, while First Army, conceivably, could. Von Kluck's dilemma was which of von Moltke's intentions he should base his further actions on: to flank the French left or guard against a flank attack from Paris.

The choice was between two desirable goals, not between obedience and disobedience.

Reconnaissance reports from First Army's own aircraft detachment added convincing detail to von Kluck's overall view of the situation. The French main body seemed to be in general retreat. Only sections of First Army were in contact with the fleeing enemy, in fighting south of the Marne River. Second Army lagged behind both the French and First Army.³⁴

If von Kluck had a better view of the local situation than von Moltke possibly could, von Moltke had a better sense of the whole. Receiving as he did reports from all the German armies in France, von Moltke knew that things were not going well on the German left, opposite the French fortifications. German forces there were finding it difficult to pin down French forces in the fortress zone, thereby preventing them from sending reinforcements to the Paris area. Any French forces stripped from the fortress zone were most likely to show up again in Paris, on von Kluck's flank. Shortly after von Moltke issued his directive of September 2 to First and Second Armies, the OHL learned that the French had at least some troops moving by rail behind their front.³⁵ If von Kluck had known these things, he might well have estimated the danger of an attack from Paris higher than he did.

In the end von Kluck decided to let three of his five army corps continue to the southeast, while the remaining two corps and

the First Army cavalry faced towards Paris. The three corps moving southeast would attempt to assist Second Army in the attempt to flank the French main body. The other two corps were not in position to contribute much to this effort in any case; they would provide a measure of flank protection toward Paris. At about 1:00 PM on September 3 von Kluck informed the OHL of his actions. The message did not reach the OHL until about 6:00 PM the next day, however.³⁶

This was not a bad adaptation to the circumstances of a 29 word message (von Moltke's September 2 directive to First and Second Armies) which sought to give a substantially new direction to the execution of the German campaign in France, without the situation either on the spot or overall being very clear to anyone. The German Official History argues that von Moltke saw the advantage First Army had over Second Army for the purpose of flanking the French, but that von Moltke explicitly decided not to run the risk of a flank attack from Paris.³⁷ Presumably von Moltke's actions over the next couple of days (discussed here below) are the foundation for this judgement. However, it is hard to see how von Kluck could have known von Moltke had made an absolute decision on this question based upon the sentence "First Army follows Second Army in echelon and further provides flank protection for the [entire] army."³⁸ One thinks of the old

General Staff saying: "An order which can be misunderstood, will be misunderstood."

Certainly, von Kluck had gone out on a limb in making his decision. One thing that might have helped him to interpret the directive of the OHL would have been some idea of the overall situation, "the sense of the whole" which lay behind von Moltke's orders. The Official History describes von Kluck's situation as follows:

Colonel-General von Kluck and his Chief of General Staff were fully conscious of the heavy responsibility which they had taken upon themselves by not following the orders of the Army High Command [OHL]. They felt that the risk of passing by the great fortress of Paris could only be justified when the enemy was pinned down, not only on his western flank, but also along on the entire army's front, and prevented from transferring troops to the left flank of the [German] First Army. To what extent that was the case they did not know at the time. ... From communications intended for the public newspaper service [!], which were received by radio on the night of 3rd and 4th September, it was possible at least to gather, that the enemy not only opposite the First and Second Armies, but also between Rheims and Verdun was reported in retreat, ...³⁹

It is interesting to note that the German Official History refers to von Moltke's message to First Army on the evening of September 2 sometimes as a "directive" [*Weisung*] and sometimes as an "order" [*Befehl*].⁴⁰ There should be no mistake: a *Weisung* of the OHL was an order, something for the subordinate commander to obey. But it was an order of a certain kind. It specified not so much the specific actions a subordinate should take, as the

intention of the higher commander which the subordinate should translate into action, based upon the local situation. A *Weisung*, then, was a sort of an open-ended order; the local commander had to use judgement and initiative to properly carry it out.

A knowledge of the overall situation--the viewpoint of the high command--provided the local commander with the essential context for interpreting the intentions of the high command. When this context was missing, as it was for von Kluck, interpretation of the intentions of the high command could become difficult. In this case, the high command had expressed two intentions--to cover Paris and to flank the French main body--without realizing (because the OHL did not know the local situation) that the two intentions excluded each other. A rational choice between the two intentions depended on an estimation of the danger of a flank attack from Paris, which in turn depended on how things were going along the French fortress line from Belfort to Verdun.

A message von Kluck sent to the OHL on the morning of September 4 (slightly less than 24 hours after his decision to continue pursuing the French the southeast) illustrates his concern for the overall situation. The German Official History introduces the text of von Kluck's message with some commentary of its own, which is worth reproducing here:

The oppressive lack of knowledge of the overall situation and the wish to justify the measures taken on its own responsibility ... caused First Army Headquarters to broadcast the following message to the

OHL on the morning of September 4: 'First Army asks for news concerning the situation of the other armies, whose reports of decisive victories until now are repeatedly followed by requests for support. ... The IXth Army Corps has done a great service by its daring seizure [of the Marne River crossings]. Now hope for the exploitation of the success. The directive [Anweisung] of the OHL, First Army should follow the Second Army in echelon, was not to be followed in this situation. ... Further difficult decisions of First Army with constantly changing situation only possible when constantly informed of the situation of the other armies, which [are] apparently farther behind. ... '41

While there is clearly a good deal of self-justification in this message, it is noteworthy that von Kluck sought not so much OHL approval for not following its directives or orders precisely as information concerning what the other armies were doing. Given the slowness of German radio communications, it was unlikely he would get an answer soon. But as September 4 wore on, von Kluck would get much of the information he wanted in the form of overheard radio messages from the other German armies marching across northern France. These messages, though not intended for von Kluck, let him know that the French seemed to be in general retreat across northern France. Taken as a whole, they reinforced his resolve to continue not to follow the OHL's directive literally.⁴²

Nor was the OHL opposed in principle to letting the army headquarters in on the "big picture." On September 5 it would write up what amounted to a summary of the situation on the whole of the western front and distribute it to all the army

headquarters by car (due to the length of the message, which would overburden the radio communications). This written message did not reach First Army Headquarters until the evening of September 5, however.⁴³

Anyone familiar with the command practices of most other armies might wonder why First Army should have to know what every other German army in France was doing and what the overall situation was. Surely the OHL was the place to collect and collate that type of information. What did an individual army headquarters need to know other than its orders? Nothing shows the decentralized nature of the German command and control system more clearly than that both First Army and the OHL felt that First Army should have access to information on the overall situation. First Army needed to know what the High Command knew in order to better interpret the specific directives of the OHL and adapt them to the local situation. In return, the OHL could frame its directives in general terms and leave the specifics to the subordinate commands. To give the subordinate commands more specific orders would have required that the OHL know very specific things about the local situation. That was clearly impossible, given the lack of speedy communications on the 1914 battlefield.

While von Kluck continued on his independent course, the OHL itself strained to build a clear picture of the campaign. Its

first indication that First Army had continued its advance south of the Marne came in the night of September 3-4, in the form of an overheard radio broadcast from First Army to Second and Third Armies. Since it was not clear in what strength First Army was moving south of the Marne, and in what strength it covered the flank towards Paris--which the OHL intended as its primary task, according to the directive of September 2--the OHL made no move to correct the situation. Only at 7:00 in the evening of September 4 did von Kluck's message detailing his actions arrive (von Kluck had sent it off on the afternoon of the previous day).⁴⁴ This message made it clear that First Army was covering Paris with only two army corps.⁴⁵

At the same time reports were building up that the French were transferring troops by rail both from the middle of their front and from the eastern fortress zone (despite heavy German pressure in that area).⁴⁶ Given the overall operational situation, this could only mean that the danger of an attack from the direction of Paris was growing. The time had come for the OHL to give new direction to its far-flung armies. Von Moltke wanted to continue the offensive. Perhaps the French withdrawals from the fortress zone would create the possibility of a breakthrough there. But in any case von Moltke wanted to check any brewing counteroffensive from Paris. For that purpose he would reserve both the First and Second Armies. If possible they would

execute their protective mission "offensively" (by attacking French forces gathering in front of Paris, rather than awaiting attack). But these two armies would not for the present be available for any scheme to flank the French main body.⁴⁷

By the evening of September 4 the new OHL directive for all the German armies in the west was ready. Due to transmission rate limitations, First and Second Armies received by radio only the sections directly pertaining to them. The OHL sent them the following message at 7:20 PM:

First and Second Army remain opposite the east front of Paris: First Army between the Oise and the Marne, occupying the Marne crossings west of Chateau-Thierry, Second Army between the Marne and the Seine, occupying the Seine crossings between Nogent and Mery. The Third Army will be marching in the direction of Troyes and beyond to the east.⁴⁸

On the evening that this directive went out, von Kluck framed the next day's orders for his army. Von Kluck decided to continue the pursuit to the southeast for another day, the OHL directive of September 2 notwithstanding. The orders he sent out that night, to govern the next day's action, ordered three of his army corps to continue the pursuit of the French toward the Seine, in a southeasterly direction. Von Kluck ordered the other two army corps to take up blocking positions on both sides of the Marne, facing Paris.

The movement of von Kluck's army on September 5 began as planned. The troops were already on the march, when at 7:15 AM

the new directive from the OHL (quoted above) arrived in the form of a radio message. It was apparent the OHL had framed the directive before it had received (or rather decoded) First Army's transmission on the night of September 4, 1914, which outlined von Kluck's intention of pursuing the Allies to the southeast. This put the First Army in a difficult position.⁴⁹

It seemed to von Kluck that no immediate danger threatened from Paris. It also seemed to him that smashing the armies to his immediate front was the best way to keep the French from shifting forces to Paris. At the same time, trying to reach all his marching corps and turn them around in midcourse was an invitation to confusion. Accordingly, von Kluck wanted to continue pursuit of the Allied armies to the Seine, then turn towards Paris.⁵⁰ At 10:30 AM he sent the following radio message to the OHL:

First Army is passing through Rebais-Montmirail toward the Seine, in accordance with the earlier directive *Weisung* of the OHL. Two army corps cover both sides of the Marne opposite Paris. At Coulommiers there is fighting contact with about three English divisions, at Montmirail with the western wing of the French. The latter are putting up a considerable resistance with rear guards, would probably suffer considerably under continued pursuit to the Seine. ... If the indicated investment of Paris is carried out, these forces will regain freedom of movement ... In Paris strong forces are probably just starting to assemble. ... Hold release of a thoroughly battle-worthy field army [the French] for less desirable at the present time [than facing Paris]. Proposal: continue the pursuit as far as the Seine and then investment of Paris.⁵¹

This radio message was von Kluck's only response to the directive from the OHL. Meanwhile, First Army continued to carry out von Kluck's orders of the previous night.⁵² Obviously, if the OHL did not agree with von Kluck's "proposal," it could direct (or order) him to turn toward Paris as soon as possible, rather than let him wait until tomorrow or the next day. But communications between First Army and the high command were anything but speedy at this stage of the campaign, and meanwhile First Army marched past Paris toward the Seine--exposing its flank to counterattack from Paris.

Once again von Kluck had not responded to a directive from the high command. This time, since the OHL wanted both First and Second Armies to face toward Paris, there could be no question that First Army should help Second Army outflank the French. Von Kluck's only excuse for not immediately facing towards Paris was the difficulty of turning his marching army corps. However, he still thought he saw the possibility of decisive victory in the continued pursuit of the French, while discounting the possibility of a counterattack from Paris. With his "proposal" to continue the pursuit at least as far as the Seine, von Kluck sought to persuade the OHL to adopt his own preferred course.

In this case, however, there is no reason to dwell for too long on the theoretical conflict between local initiative and centralized control. On September 4, the OHL knew something First

Army headquarters did not: that the French had begun transferring substantial bodies of troops to Paris. Information First Army headquarters received on September 5 made this clear to them as well. The new information came from a variety of sources, including the OHL. The new information changed a basic element of First Army's view of the situation: now, apparently, there was an immediate danger of attack on the flank from Paris. Once First Army and the OHL shared the same view of the situation, there was no longer any reason (or excuse) for First Army to disregard the letter of the OHL's directives.

The First Army had some aircraft under its direct control. On September 5, von Kluck ordered them to reconnoiter to the south--the direction of his pursuit--but not to the north and west, where a French counterattack might form up. This was one indication von Kluck did not worry much about a counterattack issuing from Paris.⁵³ But as the day wore on that lack of concern would change.

On the morning of September 5, 1914, the First Army headquarters had sent a staff officer to the neighboring German Second Army headquarters, to relay First Army's plans for the day and maintain liason. This officer returned late in the afternoon with the following message from the commander of Second Army, Colonel-General von Buelow:

The Second Army estimates the situation as follows: the enemy withdraws before the entire front

of the Second and Third--probably also of the Fourth and Fifth Army. It is probably his intention to avoid a decision at the present time, rather to assemble all still usable forces near Paris and northwest of the right flank of our forces, using the rail net. In order to bring about a change for the better in his situation, he will launch a new offensive from there. I assume that the OHL has ordered the swing towards Paris based on similar reasoning.⁵⁴

At least according to statements Major-General von Kuhl (von Kluck's Chief of Staff) made after the war, this communication changed First Army command's whole estimate of the situation. The army command decided to break off pursuit of the Allies and swing towards Paris. But since it was already late afternoon, it seemed best, once again, to wait until the evening order to redirect the troops. But the army headquarters prepared in advance the necessary directives.⁵⁵

Meanwhile, at the OHL in Luxembourg, it had become unmistakably clear that von Kluck was not taking the matter of protecting the right flank against attack from Paris very seriously. At 5:00 AM on September 5, a message arrived from 1st Army which showed that von Kluck currently had only one weak reserve corps still north of the Marne.⁵⁶ Then at 11:00, von Kluck's message "proposing" that he continue the pursuit of the French main body south to the Seine came in.⁵⁷

This news about von Kluck's dispositions and intentions was particularly disturbing in light of von Moltke's new operational intentions. The OHL's September 4 directive had given up on the

idea of flanking the French main body, in favor of enveloping attacks on the left of the French fortress line.⁵⁸ The operational focus having shifted, there was no longer a balance of opportunity and danger on the German right flank, only danger. First and Second Armies now had the sole task of covering the flank towards Paris.

Von Moltke acted to re-assert control by sending out one of his department heads, Lt.-Col. Hentsch, head of the intelligence department, with a mission (*Auftrag*) "to cause the First Army to retreat behind the Marne."⁵⁹ As we have seen, this practice of sending out a department head to reconcile the views of the High Command and the army headquarters dated back to the elder Moltke's wars. Hentsch arrived at First Army Headquarters towards evening, bearing what the Official History describes as "oral directives" (*muendliche Weisungen*).⁶⁰

As a first step, Hentsch acquainted himself with First Army's situation. First von Kuhl reviewed the events of the day, starting with the army's 10:30 AM radio message to the OHL. Hentsch then reviewed the OHL's view of the situation, laying particular emphasis on the evidence of French troop transfers to Paris from other parts of the front. At about the same time couriers arrived with written copies of the OHL's directive for September 5. First Army had received a portion of this directive (quoted above) by radio at 7:15 AM that morning, but the written

message (also quoted in full earlier in the previous chapter) gave a much better view of the overall situation. The written directive merely reinforced Hentsch's portrayal of the view of the situation at the OHL.⁶¹

There was now no question of First Army continuing its pursuit on the next day. Von Kuhl declared that First Army would carry out the movement ordered by the OHL on September 6. At the same time, he showed Hentsch the already prepared plans for carrying out the movement. The plans called for withdrawal of the various army corps one by one rather than all at once, starting at the left of First Army's line in the southeast and proceeding to the right. Von Kuhl remarked that this would take more time than attempting to pull back all the corps simultaneously. Hentsch not only raised no objection to this procedure, he specifically said there was no extraordinary hurry about the move. The resulting Army Order for the next day went out at 11:00 PM.⁶²

All in all, everything seems to have functioned smoothly, this time. For a while, von Kluck had acted contrary to the directives of the OHL, believing his action justified by his superior knowledge of the condition of the Allied armies he was pursuing—and lacking the OHL's knowledge of French troop transfers from the eastern frontiers to Paris. Von Buelow's message, Hentsch's appearance, and the arrival of the full text of the OHL's directive for September 5 had readily changed von

Kluck's mind. Perhaps Hentsch's presence was not even necessary, although certainly it clarified matters further.

But it is interesting to speculate what would have happened if von Kluck had resisted swinging toward Paris on September 6. If von Kluck had not been willing, might Hentsch have felt obliged to turn his "oral directives" into something stronger, something called "*Vollmacht*"? After all, von Moltke had sent Hentsch to make sure von Kluck turned towards Paris, and it is not always easy for a lieutenant-colonel to argue with a general. There are many similarities between Hentsch's first trip to First Army headquarters and his second and more famous mission a few days later. In both cases Hentsch had oral instructions to for First Army. During the first mission Hentsch and First Army Headquarters readily agreed on what needed to be done. During the second mission they did not agree. But certainly the first mission sheds some light on the second.

During First Army's wheel past Paris, it had gradually separated into two groups. Three army corps were in hot pursuit of the Allied forces retreating toward the southeast, while two army corps had lagged behind and faced toward Paris, in response to the OHL's admonitions to cover the flank toward Paris. The northernmost of these two corps, and the closest to Paris, was IVth Reserve Corps.⁶³ This corps was not particularly strong, having suffered combat losses and had troops detached at various

points in the campaign. On September 5 it had a strength of only 15 infantry battalions and 12 light artillery batteries. This was little more than the strength of an undiluted German army active division, German reserve formations being weaker in infantry and artillery than regular formations.⁶⁴

The IVth Reserve Corps did not have a long march to make to reach the position assigned it in First Army's orders for September 5. By 10:00 AM it was in position north of the Marne river,⁶⁵ about 25 kilometers from the outer ring of the Paris fortifications and about 40 kilometers from the city itself.⁶⁶ The corp's mission was to cover the right flank of the German First Army against attacks issuing from Paris. Complete uncertainty regarding the enemy around Paris did not make this mission any easier.

The French had screened the fortress of Paris with numerous outposts. These outposts were strong enough to prevent an entire German cavalry division (4th Cavalry Division), attached to IVth Reserve Corps, from penetrating the outer scree. Unlike the active army corps, IVth Reserve did not control any aircraft for air reconnaissance. First Army headquarters did control aircraft, but had not chosen to reconnoiter the area around Paris.⁶⁷ In short, IVth Reserve Corps headquarters was completely in the dark about the situation beyond its immediate front.

On the morning of September 5, the commander of the 4th Cavalry Division noticed French cavalry forces forming up to attack him. The commander of the IVth Reserve Corps, General von Gronau, detached a battalion of his infantry and some artillery to assist the cavalry. This was a standard military expedient: stiffen cavalry forces with a little infantry. Shortly afterwards, the German cavalry reported enemy columns in the distance. There was more than cavalry opposite the German front.⁶⁸

It is worth quoting at length the German official history's discussion of the decision which followed:

The commanding General, General of Artillery von Gronau, was faced with a difficult decision. Since Amiens the enemy had always avoided battle; now he appeared to have other intentions. What did the sudden change in his conduct mean? ... In this decisive moment, the heavy responsibility for the security of the entire German army in the west now lay on the shoulders of General von Gronau. It seemed to him, the need of the moment was to obtain complete clarity concerning the situation on the flank. ... there was only one way to create this clarity: to violently pierce the veil which hid all movements of the enemy northeast of Paris. Cheerfully accepting responsibility [*verantwortungsfreudig*] and in clear recognition of the stakes, General von Gronau made a decision which would have far-reaching consequences. He ordered the attack!⁶⁹

This depiction of the state of Gronau's mind as he reached his decision came from an author obviously imbued with the thinking of the General Staff. (Note the enthusiasm for offensive action, and compare with the OHL's directive for September 5:

First Army (not just the IVth Reserve Corps!) should cover the flank "offensively." While we may wonder whether the situation was as clear to General von Gronau as the above account makes out, his thinking was probably along roughly similar lines.

In effect, von Gronau carried out a large-scale reconnaissance in force with his entire corps on the afternoon of September 5. Von Gronau's two divisions pushed forward a few kilometers against growing opposition. It was necessary for them to launch divisional scale attacks to get forward. By late afternoon it was clear the enemy in front was at least stronger than IVth Reserve Corps, and probably a threat to the whole of the German right flank. Having learned what he wanted to know, von Gronau withdrew in good order to a strong defensive position in his rear.⁷⁰

Von Gronau had acted without the orders or even the knowledge of his superior command (First Army). He had, however, acted within the general framework of his mission (to cover First Army's right flank) and of his knowledge of the overall situation of the German army's right flank. By his initiative, von Gronau had secured for his superiors timely information of incalculable value: the French were massing outside of Paris.

This was the kind of initiative the German army expected or at least encouraged of its higher commanders. The German right wing as a whole was in trouble because von Kluck had on his own

initiative pursued the retreating Allied armies past Paris, despite contrary direction from the OHL. In a complex operation such as an army campaign, there is danger as well as opportunity when a local commander resists centralized control. If von Kluck's initiative had done much to get the German right wing into a difficult situation, von Gronau's initiative would do much to mitigate the consequences.

Von Gronau's report reached First Army headquarters during the night of September 5-6. The seriousness of the operational situation was immediately clear to von Kluck and his chief of staff. They decided to meet the French thrust "offensively," rather than going over to the defensive. Their latest directive from the OHL had after all ordered them to counter threats to the right flank of the German armies "offensively."⁷¹ By the afternoon of the next day, First Army command had committed three out of its five army corps to the battle to stop the French counterattack, which was shaping up on the Ourcq River. Von Kluck still hoped to be able to do without his two southernmost corps, which were supporting Second Army.⁷²

Meanwhile, the OHL had received word of a captured French order, ordering a general counterattack along the entire front. Early on September 6, First Army command received a message from the OHL, which passed along this information. It was apparent to von Kluck and his chief of staff that the prime objective of any

such general counterattack must be the encirclement and eradication of the exposed German right flank, the protection of which was First Army's responsibility. In view of the gravity of the situation, von Kluck decided to turn around the two southernmost corps and start them marching to the battle on the Ourcq, the orders for that movement going out on the night of September 6.⁷³

Withdrawing these two corps opened up the famous gap between First and Second Armies which was to cause the German leadership such trouble in the next two days. Von Kluck had reacted to von Gronau's reconnaissance and the news of the captured French counterattack order by rather violently changing the front of his army, from facing partly towards Paris, partly towards south of the Marne, to facing wholly towards Paris. His action addressed the problem of the counterattack issuing from Paris, but at the cost of essentially breaking contact with Second Army.

-- Notes --

1. Reichsarchiv, Der Weltkrieg, 1914-1918, vol. 4 (Berlin, E.S. Mittler & Sohn, 1926), p. 536.

2. Von Blume, "Vom Generalstabe des Grossen Hauptquartiers im Kriege 1870/71," in Gesammelte Schriften und Denkwuerdigkeiten des General-Feldmarschalls Grafen Helmuth von Moltke (no editor supplied) (Berlin: Ernst Siegfried Mittler und Sohn, 1892), vol. 5: Briefe des General-Feldmarschalls Grafen Helmuth von Moltke—zweite Sammlung—und Erinnerungen an ihn, p. 283.

3. Ibid., p. 279. In addition to the 13 General Staff officers mentioned, von Moltke had two personal adjutants. It is not clear from this source whether they were in the General Staff or not. There were other officers attached to the staff who performed important functions but were not in the General Staff. See pp. 281-82, Ibid.

4. Reichsarchiv, Der Weltkrieg, Vol. 4, p. 535-36.

5. Ibid., p. 536.

6. Ibid., p. 536-37.

7. The preceding lines summarize an argument which the rest of the chapter will develop in some detail.

8. Ibid., p. 536.

9. Ibid.

10. A subsequent chapter discusses this transition in some detail. I include it here as a narrative counterpoint to the younger Moltke's advocacy of *Weisungsfuehrung* at the army level of command.

11. Reichsarchiv, Der Weltkrieg, Vol. 4, p. 536.

12. Ibid., p. 535.

13. Ibid., p. 541.

14. Ibid., p. 542. The Official History here speaks of victory being torn from the hands of the victorious troops by the order to retreat.

15. Ibid., p. 534.

16. Ibid., p. 538.

17. Ibid., p. 541.

18. Ibid., p. 139.

19. Ibid.

20. Ibid., p. 131.

21. See for instance, Ibid., p. 3-5.

22. For one example of many, see Ibid., p. 143. In this instance, on September 6, 1914, the OHL learned from an exchange of radio messages between Second and First Army that First army intended to use the two army corps of its left wing to beat off the French counterattack from Paris. Pulling these two corps out of line opened the famous gap between First and Second Armies during the Battle of the Marne.

23. For an example, see Reichsarchiv, Der Weltkrieg, vol. 3, p. 249. In this case, First Army learned from a garbled message of Third Army that the German center was advancing. This tended to confirm First Army in its attempt to outflank the French main body (presumably in full retreat), rather than respond to the OHL's directive to simply cover the front towards Paris.

24. Reichsarchiv, Der Weltkrieg, vol. 4, p. 513.

25. Ibid., p. 515.

26. Ibid., p. 129.

27. Ibid., p. p. 138-39. Considering the Kaiser's somewhat vainglorious character, his presence at the front where he might be tempted to "save" the situation by issuing orders on his own may have been the last thing von Moltke wanted. The idea that the Kaiser personally commanded the army was also something more than a polite fiction. For one thing, his "personal command" of the army was a matter of constitutional importance. The alternative was to exercise command through a commanding general under the War Minister. But the War Minister was responsible to the Reichstag,

whereas the Kaiser was not. The battle between parliament and the monarchy for control of the army had long been the central constitutional question in Prussia, and later Germany. Simply empowering von Moltke to issue his own orders was not a step to take lightly.

28. Ibid., p. 519.

29. Reichsarchiv, Der Weltkrieg, 1914-1918, Vol. 3, (Berlin, E. S. Mittler & Sohn, 1926), p. 231.

30. Ibid.

31. Ibid., p. 231-232.

32. Ibid., p. 232. There was a further short message to First Army urging that German cavalry should appear before Paris (presumably to spook the French leadership) and bridges leading towards Paris should be destroyed, but this does not relate to the main line of argument here. Ibid.

33. Ibid., p. 236-237.

34. Ibid., p. 237.

35. Ibid., p. 232.

36. Ibid., p. 238, including 238nl.

37. Ibid., p. 231.

38. Ibid., p. 232.

39. Ibid., p. 248.

40. For references that use the term *Befehl* (order), see pp. 237 (here "*befehlsmaessig*"--according to orders), 248, 303, 307. For references that use the term *Weisung*, see pp. 232, 237, 249 (here "*Anweisung*"--instruction or directive). On p. 248 there is a reference to the "instruction" [*Unterweisung*, a cognate of *Weisung*] of the Army Commands by the OHL (see quotation in main text). Ibid.

41. Ibid., p. 248-49. This message did not arrive at the OHL until the afternoon of September 5. See Reichsarchiv, Der Weltkrieg, vol. 4, p. 131.

42. Reichsarchiv, Der Weltkrieg, vol.3, p. 249.

43. Reichsarchiv, Der Weltkrieg, vol. 4, pp. 1, 29.

44. Reichsarchiv, Der Weltkrieg, vol. 3, p. 307-308. At the time First Army first sent the message, there was no direct radio connection with the OHL. Second Army relayed the message with attendant delays. Ibid., p. 238.

45. Ibid., p. 238.

46. Ibid., p. 310.

47. Ibid., p. 311.

48. Ibid.

49. Reichsarchiv, Der Weltkrieg, vol. 4, pp. 24-25. In fact, the message First Army sent to the OHL on the afternoon of September 4, 1914, was not decoded at the OHL until the afternoon of September 5, 1914--yet another example of the slowness of critical communications. Ibid., p. 131.

50. Ibid., pp. 25-26.

51. Ibid., p. 26.

52. Ibid.

53. Ibid., pp. 27-28.

54. Ibid., p. 28. Prophectically, von Buelow also told the staff officer (orally) to tell von Kluck not to let any gaps open between First and Second Army while swinging towards Paris. Of course, this actually happened in the event, and caused the crisis of the battle of the Marne.

55. Ibid., pp. 28-29.

56. Ibid., p. 128.

57. Ibid. This must have been the message von Kluck sent out at 10:30 AM on September 5. Apparently there was a direct radio connection between First Army headquarters and the OHL on that day. Often, because of the distance involved, Second Army Headquarters had to relay messages between the OHL and First Army. See Ibid., p. 139. See also Reichsarchiv, Der Weltkrieg, vol. III, p. 238.

58. Reichsarchiv, Der Weltkrieg, vol. 4, p. 128

59. Ibid., p. 129. The original German for the phrase quoted is "*die 1. Armee zum Rueckzuge hinter die Marne zu veranlassen.*" The Official History places this phrase in quotation marks, so presumably it comes from an original source, although the Official History does not cite the source. In general, the Official History only cites published sources, not documentary material.

60. Reichsarchiv, Der Weltkrieg, vol. 4, p. 29.

61. Ibid.

62. Ibid., pp. 29-30. Of course First Army's preparations and deliberations in this matter may not have been quite as frictionless as von Kuhl made them out to be after the war, but that is not really the issue here.

63. Ibid., p. 27.

64. Ibid., p. 32.

65. Ibid., p. 31.

66. See the maps of the end of Reichsarchiv, Der Weltkrieg, Vol. 4, particularly Skizze 1 and Karte 2.

67. Ibid., p. 31-32.

68. Ibid., p. 32.

69. Ibid., p. 32-33.

70. Ibid., p. 31-35.

71. Ibid., p. 37.

72. Ibid., p. 44-45.

73. Ibid., p. 53-54, p. 50.

CHAPTER IV

THE HENTSCH MISSION AND VOLLMACHT

As far as the OHL could tell, the fighting resulting from the French general counteroffensive was going well. Up until the evening of September 7, reports from Third, Fourth, and Fifth armies were good.¹ However there were no recent reports from the endangered right wing. A report from First Army came in at 4:00 AM on September 8th. This report, sent out at 5:00 PM on September 7, sounded good. The attack of the three army corps already engaged had made progress, the two corps abruptly pulled from the right flank of Second Army were on their way. First Army planned to continue the attack on September 8 "with prospects for success."²

Early in the morning of September 8, a message came in from Second Army reporting general success in defensive actions of the previous day. The report added, perhaps only as an afterthought, that the combat strength of the Second Army was now the equivalent of only three corps. Second Army had started the campaign with a strength of seven corps, but had suffered combat losses and had some of its units detached for use elsewhere.³ At about 7:00 AM the OHL overheard a transmission from one of the cavalry corps entrusted with screening the gap between First and Second armies.

The message, intended for Second Army Headquarters, reported that the enemy had broken through the cavalry's position, and they were falling back. This might be the first indication of an enemy breakthrough in the recently opened gap between First and Second Army.⁴

When seen in the light of the overall operational situation of the German right wing, von Moltke found these last two messages deeply worrisome.⁵ Shortly after the receipt of these two messages, a discussion took place between von Moltke, the head of the operations section, Colonel Tappen, Lieutenant-Colonel Hentsch, and a Colonel von Dommes. The overall operational situation in the West came up for thoroughgoing discussion, particularly the situation on the right wing. The participants split into two groups in their view of the seriousness of the situation. Von Moltke and Hentsch thought the right wing was in serious trouble; Tappen and von Dommes argued that a victory by First Army in its planned attack would remove any danger arising from the gap between First and Second armies.⁶

Everyone agreed that the OHL should send someone out to First Army to see what its situation really was, since everything depended on its success. As we have seen, this was a procedure entirely consistent with General Staff tradition. Colonel von Dommes volunteered for the mission; von Moltke chose however to send Hentsch. Hentsch's familiarity with First Army's situation,

as a result of his mission to that army shortly before (September 5), must have been one reason for von Moltke's choice.⁷ Hentsch and von Moltke had also interpreted the operational significance of the morning's incoming reports, contradictory though they were, in similar fashion. This similarity may have been a factor in von Moltke's decision. In general, von Moltke likely knew how the minds of his chief co-workers worked, and this may have influenced him.

After von Moltke chose Hentsch to go to First Army, there was discussion of what he should do once he got there. Unfortunately none of the participants wrote anything down about Hentsch's mission at the time, not even notes.⁸ In fact the first written record of any kind concerning Hentsch's actual mission dates from Hentsch's own report on September 15, 1914, six days after the decision to retreat.⁹ The four participants at the meeting, all of them (except Hentsch in his first report) writing long after the retreat from the Marne had become a famous historical event, had differing things to say about what Hentsch's mission actually was. Writing in 1926, the Official History admitted it could not reconcile the differing accounts (despite what strikes this author as a heroic effort at detailed historical research on its part). It did not help matters that the two key actors, Hentsch and von Moltke, had both died before 1926.¹⁰

Each of the four participants agree that Hentsch's first task was to figure out just what First Army's situation really was.¹¹ Conceivably he might then have simply reported his impressions back to the OHL, and someone would take further action based on that information. But that was not how the German army functioned at the higher levels of command. The accounts of all the meeting's participants agree Hentsch also carried a directive, a *Weisung*, from the OHL to guide First Army's future action. (Of course Hentsch would also brief First Army Headquarters on the view of the overall situation prevailing at the OHL, and that would also guide First Army's decisions.) Von Moltke, Tappen, Hentsch, and von Dommles disagree on what *Weisung* Hentsch carried, and the circumstances surrounding its use, but not that there was a *Weisung* of some kind.

Each of the four agrees that in the event of a retreat by First Army, Hentsch should direct it to fall back on the line between the French towns of Fismes and Soissons, with the intention of re-establishing connection with Second Army and closing the gap that had opened between them. Von Moltke's earliest written description of Hentsch's mission, probably written in February 1915,¹² says this:

Lieutenant-Colonel Hentsch had only the mission *Auftrag*, to say to the First Army, that--if its retreat should become necessary--it should go back to the line Soissons--Fismes, in order to regain contact with the Second Army. He had in no way the mission [*Auftrag*], to say that the retreat was unavoidable.

... An order for the retreat of First Army was not given by me. Likewise an order for the retreat of Second Army.¹³

In his report on the Battle of the Marne, issued July 26, 1915, von Moltke said: "... I sent ... Lieutenant-Colonel Hentsch to the Second and First Army, who was supposed to orient himself concerning the situation. He was supposed to direct [*anweisen*] the First Army, if it should be forced to go back, to withdraw to the line Soissons-Fismes, in order to regain contact with the Second Army."¹⁴

In the spring of 1917, von Dommes and Tappen said Hentsch's mission was: "In case movements to the rear on the right wing have already begun, he (Hentsch) should attempt so to direct these, that through a withdrawal of the inner wings of First and Second armies in the direction Fismes the gap between the two armies [should be] closed again."¹⁵ In 1920 von Dommes wrote that Hentsch's primary mission was "to prevent [*verhindern*] the armies from going back," with coordinating possible retreat a secondary mission. In 1925 Tappen agreed with von Dommes, adding that "During the discussion, that the armies absolutely must hold was constantly referred to."¹⁶

Everyone agreed Hentsch should coordinate any retreat of First Army toward Soissons-Fismes. The disagreement was under what circumstances the retreat should take place. According to von Moltke it was "if a retreat should become necessary," for von

Dommes and Tappen in 1917 it was "if a retreat had already begun," for von Dommes and Tappen after the war the retreat was to take place only if Hentsch could not actively prevent it.

Of course whether or not First Army should retreat or not depended on First Army's operational situation. It was precisely this which was unknown to the OHL, and the reason they were sending out Hentsch. Hentsch, a trained General Staff officer and a department chief, would judge First Army's operational situation. He would base that judgement on face-to-face discussions with the commanding general and the more important members of his staff, certainly including his Chief of Staff and the Operations Officer (Ia). He would look at the situation maps and get an impression of the state of the troops. Beyond that, Hentsch would know everything the OHL knew (at the time of his departure, at any rate) about the operational situation of the entire western theater. This he would communicate to the officers on the scene, and it would likely affect both his and their judgement of the significance of local circumstances. To achieve this level of understanding between First Army headquarters and the OHL in Luxembourg would otherwise have required an extensive exchange of messages, which given the slowness and limited capacity of the German communications system, would have taken far more time than was available.

What First Army's operational situation really was and whether it should retreat or not were related questions. Compared to them, the oral directive Hentsch carried to retreat in the direction Soissons-Fismes was trivial. The trouble was that von Moltke did not specify exactly who should decide whether to retreat or not.¹⁷ Hentsch might arrive and find that von Kluck had decided on his own initiative to retreat. (Von Kluck had done a lot of things on his own initiative in the last few days.) In that case, Hentsch's role was fairly simple--advise retreat to Soissons-Fismes. Likewise, retreat might "become necessary," in von Moltke's phrase, sometime after Hentsch's arrival at First Army. Hentsch might simply report his findings back to von Moltke at the OHL, in which case von Moltke would decide the issue. Finally, since speed was of the essence, Hentsch might play a role himself in the decision to retreat, roughly similar to his role at First Army just a few days before (September 5).

At some point in time, Hentsch began to believe he himself had some responsibility to decide on the necessity of First Army's retreat. Perhaps he saw this as inherent in the particular nature of his mission. He was going to First Army to judge its operational situation only, after all, because everyone wanted to know if a retreat was necessary. In the words of the Official History:

The Statements of Colonel-General von Moltke concerning the content of the mission [Hentsch's] do

not allow one to establish beyond question who was to decide about the necessity of a retreat of the First Army. As a result it was not inconceivable, that Lieutenant-Colonel Hentsch under the circumstances saw in the mission a *Vollmacht* given to him, to decide for himself about the necessity for a retreat.

Frankly Hentsch himself claims to have received a much farther reaching *Vollmacht*. As he already states in his report of September 15, 1914, he had received the definite "empowerment" ["*Ermaechtigung*"] 'if necessary to order [*anzuordnen*] a movement to the rear of the First to Fifth armies [ie., the entire German right wing] behind the [River] Vesle and the heights of the northern border of the Argonne.'¹⁸

In a report of May 14, 1917, Hentsch wrote that von Moltke had given him as a fall-back line for the retreat of the whole army the line formed by St. Menehould--Reims--Soissons--Fismes. Hentsch also stated he had received an express *Vollmacht* to give orders [*Befehle*] in the name of the OHL.¹⁹ This would have constituted a very sweeping *Vollmacht* indeed.

Certainly during his subsequent mission to First Army, Hentsch went far beyond the role of a reconnaissance officer and bearer of an oral directive. In another context, the German Official History defines *Vollmacht* as the power to issue new directives in the name of the OHL.²⁰ Note that in his 1917 report, quoted above, Hentsch claimed the authorization to issue "orders" [*Befehle*] and not just "directives" [*Weisungen*] in the name of the OHL.

The entanglement of Hentsch's oral directive to retreat to Soissons-Fismes with the larger question of whether First Army

should retreat at all was in some measure inevitable. *Weisungsfuehrung* (leadership by directive), *Vollmacht*, and operational intentions all relate to each other. The overall operational intention (based upon a reading of the operational situation) provided the framework for *Weisungsfuehrung*. For instance, Hentsch carried an oral directive for First Army to fall back on Soissons-Fismes. But part of the directive was the understanding that the purpose of falling back on Soissons-Fismes was to regain contact with Second Army. If Second Army fell back so that the direction Soissons-Fismes would no longer close the gap, First Army would adjust its retreat accordingly.

In the German command system as it had evolved from the days of the elder Moltke, and particularly as the younger Moltke planned to use it, there were at least three loci which could make decisions of operational importance. First, there were the various army headquarters (perhaps in some cases corps headquarters). Second, there was the OHL itself. Thirdly, in special cases, a bearer of *Vollmacht* might make decisions of operational importance.

What held everything together was an overarching operational intention. Normally the OHL would provide this. The freedom of action granted to the army headquarters was a freedom to act within this operational framework, not a license to act in isolation from "the sense of the whole." Likewise, even specific

directives from the OHL were subject to interpretation in light of operational intentions. For instance, in the event of a retreat First Army was to fall back on Soissons-Fismes to regain contact with Second Army. If Second Army did not fall back in the expected direction, First Army would fall back to some other location, so long as it closed the gap with Second Army.

Weisungsfuehrung and *Vollmacht* both constitute a delegation of the OHL's authority, the difference is one of degree. By giving out a *Weisung*, the OHL ordered a movement or action of operational importance--with broad discretion for the commander, but still within a given operational framework. By granting *Vollmacht*, the OHL delegated, temporarily, the authority to change operational intentions. This is implicit in the idea that the holder of *Vollmacht* might actually issue *Weisungen*.

On the morning of September 8, 1914, the OHL was not in a position to provide such operational guidance. Von Moltke's leading operational idea before the French counter-offensive, a concentric attack on the northernmost section of the French fortress line (around Verdun),²¹ was now pretty much a dead letter. There were two alternative solutions for the crisis on the right wing. One, championed by Tappen and von Dommes, was for First and Second armies to solve their problems by offensive action:²² to close the gap between them by movement forward, rather than retreat. The alternative, favored by Hentsch, was to

withdraw the right wing a short distance, bring up the newly formed Seventh Army from Belgium,²³ and resume the campaign on a new operational basis.²⁴ The OHL simply did not know enough about the operational situation of First and Second armies to choose sensibly between these two alternatives.

From Luxembourg, based on what he knew on the morning of September 8, von Moltke could have ordered the right wing to do one of two things. He could have ordered First and Second armies to fight it out and close the gap between them by offensive action--thereby running the risk that the Allies would surround and destroy First and Second armies. This would have meant catastrophe for the German army in the West. Alternately, von Moltke could have ordered general retreat, perhaps unnecessarily. By sending out Hentsch, von Moltke followed his inclination to trust the commanders on the scene to make operationally sensible decisions, using information unavailable to the OHL (within the relevant time-frame). In effect, von Moltke had granted *Vollmacht* to either von Kluck or Hentsch, or perhaps both in combination. Someone other than the OHL would, perforce, determine the further operational direction of the campaign. (Unless of course there was time to refer the whole matter back to the OHL.)

This was, in other words, precisely the sort of situation for which *Vollmacht* had been developed, and there was much about the particular circumstances of the moment which made its use likely,

whatever the precise nature of Hentsch's instructions. Hentsch, as we have seen above, thought he had *Vollmacht* to issue orders in the name of the OHL. The Official Histories paraphrase Hentsch's account of how he arrived at his conception of his mission:

"Hentsch writes, that the mission [Auftrag] arose from his judgement of the general situation, from directives for particular cases and from answers and questions [*sic*, probably should be "answers to questions"], which he posed.²⁵

From the historian's point of view, it is of course unfortunate that no one wrote anything down at the time about Hentsch's mission. Hentsch did not even make notes for his own use.²⁶ Colonel von Dommes, after the war a sharp critic of Hentsch's conduct, comments on the failure to commit anything to writing, which

... considering the fateful, world-historical importance which the mission has acquired, was certainly a mistake. However I must say, despite this recognition and even looking back today, that one would hardly give a department chief [Hentsch] a simple mission of that kind in writing, if it did not include an important *Vollmacht*. He [presumably Moltke] didn't do that, however.²⁷

Von Dommes says this to deny that Hentsch had anything like *Vollmacht*. But at the same time he testifies to the broad discretion ordinarily granted department chiefs at the OHL.

Beyond the notorious unreliability of unguided recollection years after the fact, the differing operational interpretation

each of the participants put on the conflicting reports from the front seems to have played a role in their conception of Hentsch's mission. As the Official History observes: "Each one put into the not once sharply formulated mission that which corresponded most closely to his own point of view."²⁸ This is not surprising: *Weisungsfuehrung* and *Vollmacht* were inextricably linked to the operational situation. This only underlines the important decision von Moltke made, whether he realized it or not, when he chose Hentsch rather than von Dommes for this delicate mission.

There is another, simpler way to reconcile the differing accounts of Hentsch's mission. The Official History finds it "highly probable" that Hentsch and von Moltke spoke together privately after the general discussion with Tappen and von Dommes broke up. In his capacity as Chief of the Intelligence Department of the OHL, Hentsch normally briefed von Moltke every day on the intelligence picture. There was time for this daily briefing between 10:00 AM, when the general meeting broke up, and 11:00 AM, when Hentsch departed. (A subordinate arranged for transportation in the interim.) Although the Official History could not find direct evidence this meeting took place, it did trace the movements of Hentsch and von Moltke within the headquarters building (insofar as possible 12 years after the fact) and concludes that such a meeting likely took place. If von Moltke and Hentsch did speak privately, it seems natural that they would

further discuss the general operational situation and Hentsch's forthcoming mission.²⁹ If this private meeting further defined and clarified Hentsch's mission, this would account for the discrepancies in the accounts of Hentsch, von Dommès, and Tappen. The latter two, Hentsch's sharpest critics after the fact, simply were not at this ("highly probable") later meeting.

Two pieces of evidence speak strongly for a second, private meeting between Hentsch and von Moltke. First, during his drive to the front, Hentsch complained to an accompanying officer that he had not been able to get his mission specified in writing. There had been no discussion of putting anything in writing at the earlier, general meeting, so presumably Hentsch and von Moltke discussed it sometime afterwards. Second, when he drove to the front, Hentsch visited all the army headquarters of the right wing. At the general meeting, there had only been discussion of visiting First Army. Considering Hentsch's conscientious nature, and the urgency of his mission, it would have been very strange for Hentsch to have visited all the army headquarters of the right wing without specific orders from von Moltke.³⁰

Indeed in all his words and actions at the front during the next two days, Hentsch seemed most concerned to act strictly within the limits of the mission von Moltke gave him, as Hentsch understood it.³¹ Despite the discrepancies in the various accounts of Hentsch's mission, the Official History is not willing

to question the honesty of any of the officers involved, including Hentsch. As it remarks, "there is also no doubt concerning Lieutenant-Colonel Hentsch's love of truth."³²

Hentsch apparently had a reputation within the General Staff as a careful, conscientious officer--not the sort to run off and wildly exaggerate the scope of a mission given him.

Lieutenant-Colonel Hentsch was considered an exceptionally capable General Staff officer, who attracted attention in all positions of service through particularly competent performance. He was a personality, who indeed did not shrink back before any responsibility, who however did not tend to risk the utmost in difficult situations. That contradicted his conscientious, carefully balancing character. According to the judgement of General von Kuhl, his superior of many years in the General Staff, 'his reliability in every respect [was] tested.'³³

We do not know precisely how Hentsch came to believe he had *Vollmacht* to order the retreat of First Army, if necessary. We do know that he did. On the next day after he received his mission to travel to the front, on September 9, he stated to First Army's Chief of Staff that he had *Vollmacht* to order the First Army, in the name of the OHL, to retreat in the direction Soissons-Fismes.³⁴ It would be fairly inconceivable that Hentsch would say such a thing without good reason.

At 11:00 AM on September 8, Hentsch and two General Staff captains left the OHL in Luxembourg to drive to the front.³⁵ During the ride, Hentsch discussed his mission with Captain Koenig, a subordinate of his who he especially trusted.³⁶ When

drawing up its account of the Hentsch mission after the war, the Reichsarchiv solicited Captain Koenig for what he remembered about Hentsch's conversation during the ride. Koenig remembered quite a bit, which the Official History summarizes as follows:

... shortly after his departure from the OHL on September 8, Hentsch expressed the hope that the situation could be 'straightened out' and the battle end well for us. His mood was therefore probably 'serious,' but not 'pessimistic.' During the drive Lieutenant-Colonel Hentsch spoke of his mission in detail and with sharp words expressed himself most unwilling, that in this instance, where the decision could be of the farthest-reaching consequences, not Colonel-General von Moltke, Lieutenant-General von Stein [the Quarter-Master General, von Moltke's chief deputy], Colonel Tappen or at least an officer of the Operations Department was driving to the armies, but him of all people was called upon. He repeatedly complained that his mission was not written down. He could be forced into important decisions; in case of failure he would certainly later be the scapegoat, onto which all blame would be shoved off.³⁷

The Official History was able to recreate in some detail Hentsch's view of the overall operational situation as he drove towards the front. Hentsch knew that another army, the newly formed Seventh Army in Belgium, was now available to reinforce the right wing. (This news came in to the OHL on the morning of September 8, just after the disturbing messages from the right wing.)³⁸ Hentsch personally believed the best solution to the problems the German offensive was running into would be to withdraw voluntarily the armies of the right wing, bring up Seventh Army, and renew the offensive on the basis of a new

operational plan. In other words, Hentsch viewed such a withdrawal as a temporary adjustment to operational exigencies, not an abandonment of the quest for victory in the West.³⁹ Hentsch's view of the overall operational situation could not fail to affect his own judgement of First Army's particular operational situation, and his view, coming as it did from a special representative of the OHL, might well have an effect on the decisions of First Army's leadership.

On the way to Second Army Headquarters, Hentsch visited the headquarters of Fifth, Fourth, and Third armies. These headquarters were pretty much on the way, by stopping at them Hentsch planned to form a picture of the operational situation of the German right wing as a whole. In general, Hentsch found the situation of these armies good and their staffs confident. Whatever problems the German right wing might have were not visible here. In order to avoid creating undue anxiety at the front, Hentsch did not discuss the nature of his mission to First and Second armies.⁴⁰

Hentsch arrived at Second Army Headquarters (then in Montmort) at 7:45 PM. The drive had taken him a little less than 9 hours (he had departed the OHL at 11:00 AM), with stops at 3 army headquarters along the way. Upon encountering Second Army's commander, Colonel-General von Buelow, Hentsch told him (approximately) that "he had been sent by the OHL to orient

himself concerning the situation at the army headquarters and to coordinate further measures with the intentions of the OHL."⁴¹

Immediately upon his arrival, Hentsch and Second Army's Chief of Staff, Lieutenant-General von Lauenstein, spoke privately for about ten minutes. Afterwards von Lauenstein turned to Second Army's Operations Officer (Ia), Lieutenant-Colonel Matthes, and said that according to Hentsch, First Army could not successfully both deal with the enemy in front of it and block enemy forces moving into the gap between First and Second Army. Under such circumstances, according to the view of the OHL, one might have to consider a retreat behind the Marne. Matthes, somewhat surprised, called attention to the unforeseeable consequences of such a retreat. Then Hentsch himself responded: if strong enemy forces pushed into the gap, there was no other option. Under such circumstances, the OHL preferred orderly withdrawal to the encirclement and elimination of First Army.⁴²

Considering that Hentsch had only just arrived at Second Army Headquarters (and not visited First Army at all), it seems as if he had his mind rather made up at the beginning of his "reconnaissance mission." Perhaps this is further evidence that Hentsch had further discussed the operational situation with von Moltke in the hour before his departure from the OHL. Then again, as we have seen, Hentsch was not without views of his own concerning the operational situation in the West. But perhaps von

Lauenstein had also, in this brief time, conveyed the rather pessimistic evaluation of First Army's remaining fighting power prevalent at Second Army headquarters.⁴³

After this short exchange between Hentsch, von Lauenstein and Matthes, a larger meeting took place with the above-mentioned officers and von Buelow present. The two captains assisting Hentsch also took part. The question of Second Army's fighting power came up first.⁴⁴ The underlying question really was this: was Second Army still able to play an effective role in the operational struggle on the German right wing, or had combat losses and exhaustion reduced it to a purely passive/defensive role? Could Second Army move out and successfully attack as part of an operational plan to salvage the situation on the the right wing? Could it only defend itself, or even only hope to fall back in one piece?

Von Buelow began by describing Second Army's remaining fighting power. Unfortunately the accounts stemming from Second Army sources and Hentsch's party diverge on this point: the former being optimistic, the latter pessimistic. But at a minimum von Buelow referred to the thinned ranks of his troops and the lack of uncommitted reserves, without necessarily calling into question the fighting spirit of his troops (who in fact did well in the fighting on that same day, September 8).⁴⁵

Writing in 1926, a member of Hentsch's party, Captain Koenig, wrote that either von Buelow or Matthes used the expression "*Schlacke*" to describe the condition of Second Army.⁴⁶ The word "*Schlacke*" in German means either slag or cinders. Referring to Second Army, it was a way of saying that "Second Army is burnt to cinders," or something like that. This use of the term "*Schlacke*" was fateful: on the next day Hentsch would tell First Army's staff that the Second Army was only "*Schlacke*," and this affected First Army's decision to retreat.⁴⁷

Hentsch may have misunderstood what he heard: a member of Second Army's staff reported that, for several days prior to September 8, the Second Army staff had been referring to First Army as "*Schlacke*." (This is an interesting observation in its own right.) Perhaps von Buelow or Matthes said First Army was "*Schlacke*" and Hentsch thought that referred to Second Army. Neither von Buelow or Matthes had reason to denigrate Second Army: von Buelow had just recently returned from his forward command post favorably impressed with the performance of his troops during the day's fighting.⁴⁸ But however it happened, Hentsch got the impression Second Army was "*Schlacke*."

Von Buelow went on to describe Second Army's operational situation. The army's left wing had attacked and made progress; its right wing, on the defensive, had only held its positions. On September 9 the army could hold its ground, including the right

wing, so long as Allied forces did not push through the gap between First and Second Armies. Second Army had reconnaissance reports of three division-sized enemy columns moving into the gap, with only cavalry and weak infantry units in front of them. Unless First Army returned to its assigned task of protecting the right flank of the German army, catastrophe could follow. Von Buelow thought First Army was too close to Paris: the enemy could recover from tactical defeats inflicted by First Army by means of a short withdrawal to the Paris fortress zone. First Army should pull back far enough to escape this effect of the fortress zone, and close the gap with Second Army.⁴⁹

Hentsch now presented the viewpoint of the OHL. First Army seemed so fully engaged with the enemy forces on its front that it could not deal with additional enemy forces pushing into the gap between First and Second Army. Under these circumstances enemy forces might envelop First Army on two sides and destroy it; the OHL considered voluntary retreat preferable to such a catastrophe. Hentsch said he had "*Vollmacht* to order this in the name of the OHL if necessary."⁵⁰

Von Buelow interjected with the comment that strong enemy forces pushing through the gap was "not yet a fact" and that energetic action might yet fend it off.⁵¹ There followed a back-and-forth discussion of just how firmly enemy forces had fixed First Army in place, whether it still had freedom of maneuver, and

other aspects of the operational situation.⁵² At the end of the discussion Hentsch said the OHL "no longer considers the First Army capable of holding out in case of an enemy breakthrough over the Marne [the gap between First and Second Armies lay along the Marne River]. Its position would then be completely untenable, and he [Hentsch] had *Vollmacht* to order this retreat if necessary in the name of the OHL, if the First Army had not already so decided."⁵³

Here we can make out Hentsch's conception of his mission: to make sure that First and Second Armies retreated if strong enemy forces pushed into the gap between them. Hentsch explicitly stated he had *Vollmacht* to order such a retreat in the name of the OHL, if First and Second Armies did not make the decision on their own. Of course it would take time to arrange for the retreat of two armies. It would not do to wait until strong enemy forces had moved into the rear of First or Second Armies (after entering the gap, the Allies could turn in either direction). The movement of enemy forces into the gap had to be anticipated by a sufficient margin to allow an orderly retreat: a matter of military judgement. Hentsch did not shrink back from the responsibility of making this judgement himself.

Hentsch's actions over the next two days are consistent with this interpretation. Hentsch would make mistakes in his judgement of the operational situation, he would misinterpret information,

but he had a clear idea in mind: if Allied forces were clearly going to push into the gap between First and Second Armies, and First and Second Armies did not have a reasonable way to counter this move, then First and Second Armies must retreat in order to regain contact. Hentsch would order this retreat in the name of the OHL, if necessary.

It is hard to see how Hentsch could have developed such a firm conception of his mission, expressed very soon after his arrival at the front, if he did not receive it from von Moltke— one way or another. Basically, there were three ways to close the threatening gap between First and Second Armies. Both armies might retreat on converging lines. Hentsch carried Weisungen to coordinate such a retreat, if it should become necessary. First Army could also move sideways to close with Second Army. This was von Buelow's idea, although Hentsch tended to doubt First Army could actually carry it out. Heavily engaged along its front, First Army might lack the "operational freedom" to make such a move, particularly if it had been weakened as a fighting unit.⁵⁴

Finally, First and Second Armies might regain contact by attacking forward on a converging line. This is what the writer(s) of the Official History obviously thought should have been done, and this colors their account.⁵⁵ But this possibility did not even come up for discussion between Hentsch and von Buelow, as the Official History admits.⁵⁶

At the meeting between Hentsch, von Dommes, Tappen and von Moltke that morning in Luxembourg, Tappen and von Dommes had thought a victory by First Army in the attack it planned for that day would remove any need to retreat. Hentsch had not agreed with this.⁵⁷ There was no reason for him to argue Tappen's or von Dommes' point of view at Second Army. Because he had been in Luxembourg that morning, Hentsch did at least know that First Army planned to attack on September 8. Second Army command did not know this, because First Army had not bothered to tell them. (A neglect of the most basic staff procedure.) Nor did von Buelow learn of this matter from Hentsch.⁵⁸ Perhaps Hentsch thought von Buelow already knew. This was a matter of some importance: if First Army command felt itself strong enough to attack, perhaps it also had or could find enough reserves to deal with an enemy force pushing into the gap between First and Second Army.⁵⁹

After considerable discussion, Hentsch and von Buelow came to some agreement. Second Army would only retreat if Allied forces actually crossed the Marne in strength and threatened to break into First Army's rear. Hentsch gave further detailed *Weisungen* concerning the extent and direction of such a retreat. He repeated that, according to the view of the OHL, this retreat might be necessary to close the gap. Von Buelow still thought, however, that First Army might break loose and effect a sideways movement to close the gap. On September 9, von Buelow planned to

attack on his left wing, with assistance from the neighboring Third Army. Second Army's orders for September 9 went out to that effect, over von Buelow's signature.⁶⁰ Second Army did not inform First Army of the plan to attack along part of its line on September 9. First Army returned the favor by not telling Second Army anything of their plans for September 9.⁶¹

Everything depended on First Army's actual operational situation. However, Hentsch did not immediately drive onward to First Army headquarters (which he could have reached sometime during the middle of the night). Instead he elected to spend the night at Second Army headquarters, ostensibly to await the night's incoming messages.⁶²

That evening, some of von Buelow's advisors discussed the idea of demanding from Hentsch a written order to retreat (under certain circumstance), issued in the name of the OHL. Hentsch had repeatedly spoken of his "*Vollmacht*," after all. Von Buelow refused this idea however, not wanting to load the responsibility for retreat unto Hentsch. Von Buelow would take that responsibility himself, if it came to that.⁶³

So what are we to make of Hentsch's *Vollmacht* so far? Consider the suggestion of von Buelow's advisors, that the army commander should demand from Hentsch a written order to retreat in the name of the OHL. This shows that Second Army staff accepted the validity of Hentsch's *Vollmacht*, wholly oral in

nature though it was. On the other hand, von Buelow refused this idea. He would take responsibility for the retreat himself. But under von Moltke's rather loose command structure, he might have done the same if he were dealing with the OHL directly.

The real significance of Hentsch's discussion with Second Army lay in reconciling the operational views of von Buelow and the OHL. Lieutenant-Colonel Matthes, the Second Army operations officer, describes Hentsch's last summation of the operational situation:

The last moment, which according to the representative of the OHL could come into question for the order to retreat, would be--as [already] said--the crossing of the Marne by strong enemy forces. For if the Second Army could not prevent this, still less could one reckon that First Army, with its front facing to the West in heated battle, could free enough of its elements to throw back over the Marne the enemy which was pushing into its rear. The Second Army would in that moment--with or without orders--have to retreat.⁶⁴

The Official History goes on to conclude: "Colonel-General von Buelow felt he could not obstruct this convincingly presented conception."⁶⁵

We can use the quotations above to bring the exact meaning of Hentsch's "*Vollmacht*" into clearer focus. His "*Vollmacht*" had a narrow scope: it came into play only if Allied forces moved (or immediately threatened to move) into the gap between First and Second Army. Then Hentsch felt he must order the retreat himself if necessary, in the name of the OHL. *Vollmacht* did not mean

Hentsch should sit down and work out a whole new operational plan for First and Second armies.

How did this differ from a simple *Weisung* from the OHL along the same lines, something similar to the "oral directives" Hentsch had carried to First Army a few days before? For one thing von Buelow or von Kluck would have the ultimate responsibility for carrying out a *Weisung*, whereas if Hentsch truly had *Vollmacht*, then he was responsible for making sure retreat occurred before the Allies entered the gap in force and catastrophe ensued. On the other hand, Hentsch would doubtless been glad to avoid retreat in some way or have the army commanders come to the decision on their own. There was a second reason for Hentsch having *Vollmacht*: to ensure coordination between First and Second Army-- which had been notably poor of late.

Hentsch left Second Army headquarters at 7:00 AM on September 9.⁶⁶ The drive to First Army headquarters took him through the gap between First and Second armies and behind the forces screening it. On September 9, 1914, this was an area of confusion and panic. The sudden withdrawal of the two army corps from First Army's left and their march across their own rearward areas had thrown baggage and supply trains into complete confusion. Wagons desperately hurried to the rear, along with wounded troops who feared they were already cut off. Panic broke out in places, and several times Hentsch had to get out of his car to clear a passage

"with force." Along the way Hentsch heard the enemy had pushed aside the German cavalry and crossed the Marne. As if to underline the point, Hentsch almost ran into English cavalry patrols at one point and had to alter his route.⁶⁷

In 1917, Hentsch said he felt justified, on the basis of his *Vollmacht*, "to order the retreat [of First Army] in the name of the OHL," based on what he had observed on the drive to First Army.⁶⁸ The Official History wonders whether "The understandable confusion of columns following the sudden throwing of the army from the Marne to the Ourcq and the mixing of units did not, understandably, make a stronger impression on Hentsch, coming from the quiet of the Luxembourg headquarters, than it would on a General Staff officer used to conditions just behind the front."⁶⁹ But on the other hand, Hentsch had visited First Army just a few days before. Then again, Hentsch had agreed with von Buelow, just the night before, that First Army would retreat if strong enemy forces pushed over the Marne.⁷⁰ On his ride to First Army, Hentsch had learned--correctly--that this was the case. If Second Army retreated, First Army could not stay where it was.

Hentsch arrived at First Army headquarters at about 12:30 PM, after a five and a half hour drive.⁷¹ The crisis atmosphere at First Army headquarters had peaked about an hour earlier. The right wing of the army had attacked that day (the purpose, in the end, of transferring the two army corps from the left wing). It

had been apparent for about an hour that this attack was going well, so the tension had eased at First Army headquarters.⁷² Immediately upon his arrival, Hentsch had a roadside conversation with the First Army Chief of Staff, Major-General von Kuhl. Von Kuhl told Hentsch three things. First, First Army had pulled back its left flank somewhat, thereby making it somewhat harder for enemy forces to outflank it. Second, the English were over the Marne. Third, in a move analogous to First Army's, Second Army had pulled back its right wing, thereby easing the threat of being flanked.⁷³ On the other hand, these moves also effectively moved First and Second armies even farther apart--in the case of Second Army's move alone, by a distance of 15 kilometers.⁷⁴

Second Army's move should not have surprised Hentsch, since First Army headquarters had made the arrangements for it in his presence the day before.⁷⁵ The Official History, however, maintains that Hentsch must have misunderstood this news of the limited retreat of the right wing of Second Army to mean that a general retreat of the Second Army had already begun--"Only thus can his whole behavior during the discussion with Major General von Kuhl appear explainable."⁷⁶ But there is a much simpler explanation which fully accounts for Hentsch's "behavior": Hentsch and von Buelow had come to an agreement the evening before that Second Army would retreat if the English pushed over the Marne in force. The English had done so: Hentsch knew it, von Buelow knew

it, and presumably Second Army knew it [in fact, Second Army had detailed aerial reconnaissance reports of the English move by 10:00 AM⁷⁷]. Given the situation and the agreement with von Buelow the night before, one does not need to postulate a major blunder on Hentsch's part to understand his behavior. Furthermore, within the hour, Hentsch would discuss the retreat of the right wing of the Second Army in a fashion that fairly well excludes the notion that he had misunderstood that movement to be the retreat of the whole of the Second Army.⁷⁸ Hentsch would have been exceedingly remiss to advocate any other course than the one he did.

What bound Hentsch to believe Second Army was already retreating was his agreement with von Buelow that Second Army would retreat if the English pushed across the Marne. The English had done so, therefore Second Army must be in retreat. Here one comes face to face with the coordination problem that Hentsch had to deal with. There was no means of instantaneous communication between First and Second army headquarters. (Ironically enough, the first telephone connection between First and Second Army came into service late that day, September 9.)⁷⁹ It had taken Hentsch five and a half hours to drive from First Army headquarters to Second Army headquarters. A round trip would take, presumably, about 11 hours. If the English actually got between First and Second armies with an open route to the rear of either army, what

damage might they do in the eleven hours (minimum) it would take to coordinate action between First and Second armies (on the basis of a messenger shuttling back and forth)?

Hentsch and von Kuhl continued their discussion inside First Army headquarters. Von Kuhl argued that the effects of the successful attacks by the army's right wing (which had flanked and driven back the French left) would counterbalance any threat to the left wing. The army had sent a division to stiffen the cavalry and smaller infantry units on the left flank. In any case, von Kuhl did not take the BEF seriously, given its exhaustion and combat losses. Besides, in his view, First Army had driven the BEF before it ever since Mons and Le Cateau.⁸⁰ First Army's IA, Lieutenant-Colonel Grautoff, commented after the war that "We knew from our own experience how slowly the English operated."⁸¹ All in all, von Kuhl thought the left wing could hold together until the effects of the victory on the right wing made themselves felt.⁸²

Hentsch refused to accept all such arguments, maintaining that Second Army had already begun to retreat.⁸³ It was already 1:00 PM as Hentsch and von Kuhl spoke. Coincidentally, far away at Second Army headquarters, von Buelow had written orders for Second Army to withdraw, effective 1:00 PM.⁸⁴ Hentsch could not have assessed Second Army's actions any better, had he been clairvoyant. Of course, Hentsch knew what Second Army was doing

because of his agreement with von Buelow the night before. The Official History points out that even if First Army had given the order, several hours must elapse before it could be put into effect.⁸⁵ There was still time, in other words, to countermand such an order. So conceivably there was still time to send a message to Second Army not to retreat. But that would require that Hentsch change his mind about the operational situation.

Argue as they might, Hentsch and von Kuhl could not come to any agreement. Finally, Hentsch declared: "he had the *Vollmacht* to order the retreat of the First Army to the line Soissons-Fismes, in the name of the *Oberste Heeresleitung*[OHL]. The army headquarters must follow this order (*Befehl*) without delay, for only in this way could a unified army front [for the whole army] be restored."⁸⁶

Despite Hentsch's invocation of authority, von Kuhl continued to argue on. He advanced in particular the argument that the way to restore an unbroken front was to attack forwards, not to retreat to the rear. The exploitation of First Army's success of that morning could lead to the defeat of the French Sixth Army facing it, then the English would retreat back over the Marne fast enough.⁸⁷

Basically Hentsch's argument with von Kuhl revolved around the question of how to close the gap with First Army. There were only three alternatives. First and Second armies could attack

forward, converging together to close the gap (von Kuhl's preference). Obviously, if First Army attacked forward while Second Army was in fact retreating, First Army would face possible catastrophe, attacking unsupported on both flanks. Then again, First Army could move sideways to close the gap (von Buelow's idea). This was no longer an option, as the BEF now stood (or rather marched) in the gap. Thirdly, both armies could retreat on converging lines (Hentsch's evident preference).

It is worth looking at von Kuhl's alternative in some detail. As von Kuhl knew and had told Hentsch, the First Army had its IXth Army Corps and an infantry division (supported by two infantry brigades) driving into the left flank and the rear of the French Sixth Army.⁸⁸ Hopefully that would lead to defeat of the entire Sixth Army during the course of the rest of September 9, or shortly thereafter. First Army had also sent a division to strengthen its left flank, nearest the gap. Hopefully that area would hold together long enough for the operational success of the right wing to have effect.

In other words, von Kuhl had in mind an operational solution to the problems of the German right wing. His solution depended on the operational success of the attack of First Army's right wing to defeat the French Sixth Army and force the BEF to retreat, thereby restoring the situation. But even though First Army might be in a good position, operationally, to achieve such future

operational success, von Kuhl was banking on something that had not happened yet.

Von Kuhl did not have anything like reserve forces available to push aside the BEF and regain contact with Second Army, nor did he have any real opportunities to create some. First Army had committed all its forces to the attack on the right flank and holding the center and left. As for the prospect of a smashing victory over the French Sixth Army, there was no German army poised to come in on Sixth Army's flank, or to cut off its rearward line of retreat. Indeed, no other German armies were in position to lend support of any kind, in particular Second Army. First Army was itself the flank guard of the German right wing, with no German forces to its own right. Furthermore, as von Buelow had pointed out to Hentsch the day before, Sixth Army's proximity to the Paris fortress zone meant it could mitigate the effects of a defeat by retreating the short distance to the fortress zone. In other words, any defeat of the French Sixth Army by First Army was likely to be of the variety described by the General Staff as "a frontal victory of the ordinary kind." First Army might drive Sixth Army back, but there were no German forces in a position to block the enemy's line of retreat and turn rout into catastrophe, thereby removing the French forces from the playing board permanently, rather than for just a short time.

At this point, some perspective on the relative strengths of the forces involved would be helpful. Altogether, German First Army counted 128 battalions. Opposing it were a total of 191 enemy battalions, 127 of them French, 64 of them English.⁸⁹ Both sides had taken heavy losses (exactly how heavy at any given point in time would be hard to determine), but given the roughly equal Allied and German peacetime strengths of a battalion, and given roughly equally depleted battalion strengths, we may take the German/French strength ratio as approximately 2:3 (alternatively a 3:2 Allied superiority). The Germans did have a superiority in heavy artillery, which would have produced a somewhat greater German combat power than the ratio of battalions would suggest.⁹⁰ But clearly First Army was numerically inferior to its opponents.

The force ratios facing Second Army were even worse. Second Army, together with half of Third Army (which was supporting Second Army's left), counted 134 battalions. The French opposing the one and a half German armies totaled 268 battalions⁹¹--a 2:1 Allied superiority. Clearly Second Army had no excess of force with which to aid First Army.

By accepting risks on the rest of its front, First Army command had created a force ratio of almost 3:1 in its favor on the extreme right flank, where two and a half active German divisions, a reserve brigade, a *Landwehr* brigade and a cavalry division opposed one and a half French divisions and two cavalry

divisions.⁹² Even though the Germans might reasonably hope for success on that sector, particularly as they had already flanked the French, the absolute size of the forces involved was not large. The Germans did not have an army crashing down on the French left, but something like a reinforced corps. Certainly the Allies had an excess of forces available over the Germans, which they might use to recover from operational reverses inflicted by the Germans.

Von Kuhl's theory of how First Army could have maintained itself and perhaps even reversed the situation is important, for it constitutes the basic argument for all those who have argued the retreat from the Marne was unnecessary, indeed that the Germans could have won the battle. The German Official History was the most important exponent of this view, but there have been many since. One has to grant a certain plausibility to von Kuhl's point of view.

Military operations, or operational art (ie., doing military operations well) can act something like an accelerator effect. Small operational advantages can be parlayed into larger ones, until finally the enemy's position has been completely overthrown. First Army might have parlayed its flanking attack into a defeat of French Sixth Army, which might have led to the retreat or destruction of the BEF, which would have changed the whole situation. Stranger things have happened in military history.

But any such operational accelerator effect would face an uphill battle against the weight of Allied numbers. The Germans would need a lot of operational success to counterbalance the Allied numerical superiority of about 3:2 over First Army and 2:1 over Second Army. Conversely, the Allies could make up for operational defeats with their reserve of manpower. Nor is it altogether clear First Army had any operational advantage over its opponents in terms of operational positioning. Did First Army's prospects for a successful flank attack against the French counterbalance 64 English battalions between First Army and its nearest support?

The accelerator effect of operations could work for the Allies as well. What if they woke up to the fact they had First and Second Army fixed frontally by superior forces, with a substantial Allied force already between the two German armies, and with only screening forces between it and the rear of either army? The English had so far been feeling their way forward cautiously⁹³. They probably were reluctant to take casualties. (The BEF constituted, after all, the bulk of England's trained military manpower and had already taken a beating in the campaign.) But even if they just remained between the two German armies they placed both in jeopardy, and pushing the expert riflemen of the BEF aside would take more force than First Army could spare anytime very soon.

There is of course no way to refute von Kuhl's argument in absolute terms. The only way to know if it would work was to try it, and since it was not tried, the prospect of its success has beguiled the "what if" school of military history ever since. For his part Hentsch did not buy any solutions to the right wing's predicament based on the prospect of future operational success. In this he was consistent from the time the problem first came up in Luxembourg through his whole involvement with First and Second Army. Hentsch had summed up his position to von Buelow by saying that the very last moment for retreat must come when the English crossed the Marne in force. Von Buelow had assured him that Second Army was in no position to provide the forces to throw them back over the Marne. To clinch his argument that Second Army must retreat as soon as the English crossed the Marne in force, Hentsch had assured von Buelow that First Army would probably be in even less of a position to do something about it than Second Army.⁹⁴

Nothing Hentsch heard at First Army changed the point of view he had expressed to von Buelow the day before. In his view, if substantial Allied forces pushed into the gap between First and Second Armies while both were fixed frontally, the only way to avoid catastrophe was to retreat. If one army or the other could stop the Allied incursion, fine, but if they could not, to delay was only to flirt with disaster. In a report Hentsch wrote in May 1917, Hentsch stated that he had specifically asked von Kuhl if

the First Army could support Second Army with its whole force on September 10, if it succeeded in defeating the enemy to its front on the 9th. Only when von Kuhl replied in the negative, citing the poor condition of First Army, did Hentsch make use of his *Vollmacht* and order the retreat of First Army. (Hentsch stated in 1917). Von Kuhl and another officer of First Army's staff categorically denied that Hentsch had asked any such question or received any such answer.⁹⁵

So it usually goes with the statements of the participants in this matter: they flatly contradict each other. Assuming at least half of them were not self-consciously lying, certain correctives make the situation more understandable. First, consider the viewpoints of the parties involved. First Army had just saved itself from disaster, restored the situation, and just now inflicted an important defeat on its opponent, with promise of more to come. Now it should retreat? Was the overall operational situation of First and Second Armies so bad as to necessitate that? Hentsch, on the other hand, saw himself as the representative of the high command, with a responsibility to prevent disaster on the right wing. First Army command had created this whole mess by chasing victories at the expense of its role as flank guard, had interpreted its directives from the high command rather creatively, and now continued to chase victories in the face of an imminent danger, threatening the whole German right

wing with disaster. Add to the human tendency to interpret events in light of one's own point of view a lively desire not to assume blame for losing the war, and you have a recipe for the mass of flat contradictions between the participants.

The way around this mess is to trace the operational situation and how the participants viewed it, rather than who said what about the condition of the army, as they remembered it 12 years later. At the operational level the situation is fairly clear. It is clear Hentsch believed First and Second Armies must retreat if neither one could do any thing about the forces marching through the gap into their rear areas. He knew from consultation with von Buelow that Second Army could do nothing about the situation. When he talked to von Kuhl at 1:00 PM, everyone--Hentsch, von Kuhl, and presumably Second Army as well--knew the English were over the Marne in force. There were only screening forces in front of them, which might hold them up for a shorter or longer time, but could not hold them indefinitely.

Therefore the only remaining question in Hentsch's mind was whether First Army could do anything about the English. His decision to order First Army's retreat turned on this question, as well as the subsequent controversy over the propriety of his action. The best von Kuhl could promise was defeat of the French Sixth Army, followed by action to deal with the BEF. But the defeat of Sixth Army on the 9th would have to be complete, not

partial, if First Army was going to make much of an effort against the English on the 10th. That was a big if. There was no prospect for doing anything about the English on the 9th, and no surety of being able to do anything about it on the 10th, by which time it might be too late. Conscious as Hentsch was that even as he argued with von Kuhl the English were marching for the rear of either First or Second Army, and that Second Army had probably already begun its retreat (in line with the agreement of the night before), von Kuhl's solution did not override Hentsch's conception of the operational imperatives. In this Hentsch exercised his military judgement, conscious of his responsibility and believing himself empowered by the OHL to take all necessary action.

The argument between Hentsch and von Kuhl had gone on along these lines, after Hentsch had invoked his *Vollmacht* the first time. Finally, von Kuhl asked Hentsch how von Buelow had been able to bring himself to retreat. Von Buelow was in a sour mood about it, Hentsch replied.⁹⁶ Von Kuhl protested that as far as he knew, only the right wing of the Second Army had "bent back" [*zurueckgebogen habe*]. Hentsch replied that the right wing of the Second Army had not had not gone back, it had been thrown back.⁹⁷ Hentsch added that "The Second Army is only slag."⁹⁸ Now for a second time Hentsch ordered the retreat of First Army.⁹⁹

Only after this exchange did von Kuhl give in, as he put it "not because it was a matter of an order--I would not have

hesitated to refuse it--but remaining on the Ourcq was no longer possible, after the definite statements concerning the 'beaten' and retreating Second Army." First Army could not attack forwards if Second Army retreated. To do so would only further expose its flank and put it in a wholly untenable position.¹⁰⁰

So according to von Kuhl, after the fact, he decided to retreat not because Hentsch had twice ordered it, making use of a *Vollmacht* granted by the Chief of the General Staff, but because Hentsch supplied ultimately misleading and exaggerated information about the condition of the Second Army. One need not take von Kuhl's statement at face value, although it forms the basis of the German Official History's interpretation of the Hentsch mission. Hentsch's statements about the Second Army's right wing being "thrown back" and Second Army being "slag" do however deserve closer examination.

The whole exchange about the right wing of the Second Army actually refutes the Official History's speculation that Hentsch had misunderstood the backwards movement of Second Army's right wing to be a general retreat of Second Army. When Hentsch had first arrived at First Army Headquarters, von Kuhl had told Hentsch that Second Army had withdrawn its right wing. The Official History speculates that Hentsch must have misunderstood this to mean the whole of Second Army, even though the decision to withdraw the right wing had been made in his presence the evening

before. "Only thus can his [Hentsch's] entire conduct during the discussion with Major-General von Kuhl appear understandable," states the Official History.¹⁰¹ But later on, von Kuhl brings up the matter explicitly: as far as he knew, only the right wing of Second Army [not Second Army as a whole] had retreated. Hentsch then referred specifically to *the right wing* in his reply, which hardly indicates a confusion in his mind of the right wing for the whole of the Second Army. To quote the entire exchange from the Official History: "To the objection of the General Staff Chief [von Kuhl], that the Second Army, so far as he knew, had only bent back the right wing, Hentsch replied by once again emphasizing, the right wing had not gone back, it had been thrown back."¹⁰²

Whether the right wing of Second Army had "gone back" or been "thrown back" was a matter of interpretation. While Hentsch was talking to von Buelow the evening before, von Buelow's Chief of Staff, von Lauenstein, had taken a phone message. Von Lauenstein came back with the message that the army's right wing had been "pressed back" [*zurueckgedraengt*]. Considering the lack of reserves, von Lauenstein proposed withdrawing the right wing behind the next major terrain feature [the valley of the Verdonelle]. Von Kluck agreed to this measure, even though it would widen the gap with First Army by 15 km and open the road through Chateau-Thierry to the enemy.¹⁰³ While one could not call this movement a rout, it was not exactly voluntary either. In

fact, "thrown back" might be a more accurate term for this retrograde movement than "gone back." Second Army command had reacted to having its lines driven back by drawing them even further back, because it lacked any reserves. Hentsch's use of the term "thrown back" is consistent with what he had heard the night before. It does not indicate any deep-seated confusion in his mind about the nature of what had happened to the right wing of the Second Army, let alone a confusion of the right wing of the Second Army with the Second Army as a whole. Doubtless Lieutenant-Colonel Hentsch, meeting with strong resistance from Major-General von Kuhl, did not feel any inclination to paint Second Army's situation in rosy colors.

As for Hentsch's description of Second Army as "Schlacke" [slag, cinders], it really brings up the question of how exhausted First and Second Armies really were, whether they were up to the tasks the military situation might demand of them. Clearly both armies were pushing the outer limits of human endurance, and how much longer they could keep going was a question in the minds of their commanders. For instance, von Kuhl argued against retreat for First Army on the grounds that its units had gotten intermixed during the violent change of front to meet the French flank attack, but also that the army was simply too exhausted to retreat.¹⁰⁴ Von Kuhl did not hold his army too exhausted to defeat the French Sixth Army on the 9th and come to the assistance

of the Second Army on the 10th, if one believes his statements made after the event, but then again there is a considerable psychological difference between attack and retreat. Members of both First and Second Army staffs subsequently maintained that the troops of their commands were up to all demands made on them, as shown by their magnificent conduct in the fighting on the 8th and 9th and during the retreat.¹⁰⁵

Of course, this is the sort of thing officers will always say about their troops, particularly when in point of fact the German troops did win victories over their opponents on the 8th and 9th and held together during the following retreat. But on September 8 and 9, looking into the future, their commanders may not have been so sure. (Then again, any scenario for a sweeping German victory on the Marne would have required even greater exertions from the troops than what they did on the 8th, 9th, and during the retreat.) A member of Second Army's staff reported that for several days prior to September 8, officers of Second Army staff had frequently referred to First Army as "*Schlacke*."¹⁰⁶ Von Buelow himself may have used the term to refer to First Army; it may be that Hentsch misunderstood him as referring to Second Army.¹⁰⁷ Then again, perhaps the expression simply stuck in his head and he applied it to Second Army for his own reasons.

Certainly the condition of the troops in First and Second Army must have been a factor in Hentsch's decision to order a

retreat: worn out troops ordinarily will not fight as well as fresh ones. But there were also compelling operational reasons for Hentsch to act as he did. Von Kuhl (and the Official History followed his interpretation) argued that Hentsch convinced him to retreat based on mistaken information: Second Army had been "thrown back" and was now only "slag." But von Kuhl knew as well as Hentsch the dangerous operational situation First and Second Armies were in, whether Second Army was slag or not. Hentsch's twice repeated orders in the name of the OHL probably were not without effect as well, despite von Kuhl's proclaimed willingness to "refuse"¹⁰⁸ them.

At any rate, immediately after the exchange about Second Army being "thrown back" and "slag," von Kuhl gave in. He went to the commander of First Army, General von Kluck--remember that von Kuhl was only First Army's Chief of Staff--to obtain his permission to retreat. "Heavy of heart," writes von Kuhl, von Kluck "gave the order effect."¹⁰⁹ The manner in which von Kuhl, not von Kluck, conducted the whole discussion with Hentsch says something about the importance of the Chief of Staff in the German command system. But then again the semi-collegial nature of the cooperation between a commander and the chief of staff--up to the point of the final decision--did not necessitate such monarchical detachment on the part of von Kluck. Von Buelow had not disdained to talk with Hentsch. Von Kluck probably knew that Hentsch was at his

headquarters, and he probably knew why he was there. By letting von Kuhl carry the ball for him in conference with Hentsch, von Kluck could minimize his association with the decision to retreat. But in the German army as in any other, the final decision rested with the commander of the unit. It was von Kluck's order which actually moved First Army back from the Marne.

Von Kuhl did not attempt to confirm this decision with the OHL. The only possibility for doing that was by radio. "How long that took is well known," wrote von Kuhl. "Answer to a brief inquiry during the night, at the earliest. Besides which no understanding possible in this fashion."¹¹⁰ While underlining the extremely poor communications the Germans had to work with on the extreme right wing, von Kuhl's comment points up another factor. It was only in face-to-face discussions or possibly telephone conversations that German commanders could come to an understanding, a union of views. This union of views von Kuhl referred to meant a common view of the operational situation. Hentsch's mission to the front, using *Vollmacht*, had provided a substitute of sorts for the ordinary exchange of views between commander and subordinate.

Hentsch left First Army Headquarters at approximately 2:00 PM: about an hour and a half after his arrival at First Army Headquarters. He sent an assistant to inform Second Army Headquarters that First Army was retreating. He sent that

assistant by a road calculated to meet Second Army Headquarters, even if the latter were on the road as part of the general retreat--indirect evidence, perhaps, of the sincerity of Hentsch's belief that Second Army was already retreating. On Hentsch's own drive away from First Army, he talked to his driver, who reported that "He emphasized repeatedly, that now in the absence of a written mission [*Auftrag*], from many quarters, the blame for the unhappy outcome of the operation would be shifted to him."¹¹¹

Such was not necessarily von Moltke's intention. But certainly in the last few days Hentsch had had to try and mitigate the consequences of mistakes made by officers much his senior. He believed he had *Vollmacht* to do that, of course. But even so, Hentsch's actions on September 8 and 9 (as well as, to a lesser degree, those of September 5) show the enormous responsibility the General Staff sometimes expected its officers to shoulder, particularly section chiefs such as Hentsch. Hentsch knew what was at stake on the Marne, and no doubt felt himself momentarily responsible for the outcome of the campaign, possibly of the war. No wonder his driver reported him "deeply shaken in spirit" on the drive back.¹¹²

SECOND ARMY'S DECISION TO RETREAT

Meanwhile, at Second Army Headquarters, aerial reconnaissance reports had come in at 10:00 AM. They showed five enemy columns moving forward through the gap towards the rear of First Army.

Von Buelow immediately held conference with his leading staff officers to discuss the situation. One thing was clear to von Buelow and his staff: Second Army did not have forces available to deal with the advancing enemy.¹¹³ In this they confirmed Hentsch's assessment that no one should look to Second Army to deal with an enemy advancing into the gap, whether one regarded Second Army as "Schlacke" or not.

Von Buelow and his staff officers now thought they could see the enemy's plan: to push aside and destroy First Army, followed by the encirclement of the German right wing. All agreed that "there was no doubt, that because of the tactical and operational situation the retreat of the First Army was unavoidable."¹¹⁴ If that was the case, Second Army must retreat as well.¹¹⁵

Accordingly von Buelow prepared orders for his army to begin its retreat at 1:00 PM. The orders went out to the units beforehand, but von Buelow could cancel them at any time prior to 1:00 PM. The orders specified that army's left wing should continue its attack (concerning whose progress von Buelow was completely in the dark), the withdrawal beginning only after the left wing had thrown back the enemy back.¹¹⁶

Meanwhile von Buelow attempted one last time to find out First Army's actual situation. At 11:02 AM he sent a priority radio message to First Army, informing it of the enemy columns moving forward and requesting information on First Army's

situation. However, because of haste, the last part of the message, requesting information on First Army's situation, was not transmitted.¹¹⁷ At 1:00 PM Second Army Headquarters received a message from First Army, informing it that First Army was withdrawing its left wing to a specified location. Although First Army had actually sent out this message before Hentsch's arrival, and it referred only to a limited withdrawal to relieve pressure on First Army's left flank, von Buelow took it as evidence of a general retreat.¹¹⁸ There was now no reason for von Buelow to halt his army's withdrawal at 1:00 PM.

While certainly von Buelow's misapprehension of First Army's message constituted a misunderstanding (one of a long list between First and Second Army), it hardly mattered. First Army was going to retreat; von Kluck gave his final approval by 2:00 PM at the latest.¹¹⁹ As long as First Army was going to retreat, it was best Second Army believed First Army was retreating, even if it believed so for the wrong reasons. Second Army would be in an untenable operational situation if First Army retreated and Second Army did not.

This particular misapprehension is only important, in other words, if one believes the whole German retreat from the Marne was a mistake that the responsible parties should have avoided somehow. That was the position of the Official History, as well as a whole raft of German apologists for the Schlieffen Plan.

Another element enters into this picture of events: von Buelow did not know how well the attack of his left flank (together with half of Third Army) had gone. Von Buelow had made this attack in an attempt to relieve pressure on First Army and perhaps counterbalance the Allied move into the gap between First and Second Armies.¹²⁰ By 3:00 PM or so the attacking forces had driven the French back all along the line; in places the French had fled beyond contact with the victorious Germans.¹²¹ But von Buelow did not hear of this until one of his staff officers could drive the news to him, a staff officer who only left the front for Second Army Headquarters at about 3:00 PM.¹²²

Von Buelow, of course, had to make his decision on the basis of what he knew by 1:00 PM, not what he would know by the late afternoon. But the success of Second Army's left wing constitutes the last element in the alternative scenario for the outcome of the Battle of the Marne. In the words of the Official History:

"The frightful crisis of the five-day battle had been overcome thanks to the incomparable dedication and bravery of the troops and the insightful and enterprising leadership. Further advance of the English over the Marne in the danger-threatening gap between the First and Second Army no longer presented any danger. They [the English] moved to their own doom. The operational and tactical effects of the simultaneous victories at the decisive point must force the entire enemy front between the Ourcq and Aube to retreat. The Marne campaign appeared decided in favor of the Germans!"

In other words, the tactical victories on the right wing of First Army and the left wing of Second Army would permit both armies to move forward to regain connection. The English would have to retreat to avoid encirclement. Failing that, the Germans would in fact encircle the English: the encircler would become the encircled. By a paradox of military operation, when an army advances on the enemy's rear, it unavoidably and by its own movement puts the enemy in its own rear.

EVALUATION

Let us suppose for a moment that the Official History's scenario for a successful outcome of the Battle of the Marne is plausible. First and Second Armies, encouraged by the success of First Army's attacks and hoping for good news to come in from Second Army's attack, put off making the decision to retreat a little longer. By evening they have news of Second Army's success. In the evening both armies frame their orders for the following day: continued attack and exploitation of the previous day's victory. The armies hope for operational success on a scale sufficient to cause the BEF to retreat, allowing them to close the gap by moving forward. This scenario, or something near it, constitutes the only way that the German First and Second Armies could have closed the gap between them without retreating.

No one can say whether these hypothetical operations of September 10, 1914, would have worked for the Germans. They might

have worked. Everything in war is uncertain and every course of action carries risks. But one can identify the risk involved in this particular plan, and consider whether the risk was worth the potential gains.

The risk, in this case, was the destruction of First and Second Armies and disaster for the entire German right wing. At the time of the German decision to retreat, strong enemy forces were marching through a lightly screened gap straight for First Army's rear. Neither First or Second Army, each facing an enemy army on its front, had reserves to deal with the situation directly. Neither First nor Second Army headquarters knew of the success of Second Army's left: at 1:00 PM on September 10, it had not happened yet. By any reasonable operational evaluation, both First and Second Armies were at risk.

On the other hand, some situations in war justify taking such risks. There is one in particular. Often two opposing generals will each put in motion operational plans designed to overthrow the other's position. Often these plans will begin to take effect more or less simultaneously: General A's flanking attack succeeds, but General B's penetrating attack breaks through; General B closes the pocket on an encircled force just as General A cuts a vital line of communication. Of course both sides can attempt to counter the enemy move directly. But often the forces needed to do so effectively would have to come from the operational plan

directed against the enemy. To defend (directly) against the enemy's plan may require giving up on your own.

In such situations the winning side will often be that whose trap springs shut first: or the side whose general's nerves hold out the longest. In other words, the best way to counter the enemy's plan is often to complete carrying out one's own. In the meantime the commanding general must often accept an apparent worsening of his own operational situation (due to the effects of the enemy's plan), while trusting that the overall situation will resolve itself favorably. Anxiety for one's own position has halted many a course of operations the enemy could not have countered directly.

The often useful (in operational terms) determination to carry an operational plan through to completion is not the same thing as believing that the commander's unshakeable will alone determines the outcome of a battle. There exists a line of thinking on generalship which holds that battle is a matter of the will (specifically the commander's willpower), that a battle won is the battle we will not admit to be lost (to paraphrase Marshal Foch). One might term this the metaphysical school of generalship. The genuine operational utility of a certain determination to carry through one's plan, regardless of what the enemy is doing, gives this line of thinking more credibility than it deserves. Certainly simple-minded bull-headedness has worked for some

generals. But others have allowed the enemy to convert slight operational advantage into overwhelming ones, taking no effective action to defuse the situation (such as retreating), because they refused to admit defeat. Other generals have surely saved their armies by pulling back in time from disadvantageous situations.

Because of the nature of operational art, a dynamic, interactive process wherein two sides each maneuver for advantage, generalship always has required strong nerves. But more than strong nerves are necessary. If one grants that operational considerations--the relative positioning of military forces with respect to each other and the terrain--have an effect on the outcome of a battle or a campaign, then it becomes possible to disentangle the question of generalship somewhat. Generalship becomes a question of 1)operational positioning 2) the balance of material force between the two sides 3) the ability to recognize and the nerve to carry out an appropriate course of action.

One can apply this schema to the German situation on the Marne. Superficially at least, there is a resemblance to "the opposing plans taking effect simultaneously" scenario described above. The Allied movements threatened the Germans with the isolation and destruction of First Army (at the least). On the other hand, if the Germans moved concentrically forward from their successes on the right wing of First Army and the left wing of Second Army, they might force the withdrawal of the BEF--and

possibly isolate and destroy it. The argument that the Germans should have stayed on the Marne turns on whether this latter plan would have worked--and whether it would have worked before the Allied "plan" started to seriously affect the German capacity to operate.

Let us grant that the scenario for German victory on the Marne had a certain finite probability of success, somewhere between 0 and 1. How large that probability was can be a matter of dispute, but it is not sensible to simply assume it would have worked. Certainly the German successes of First and Second Armies on September had set the stage for this scenario. But the German forces had driven back the French, not taken them prisoners in large numbers. The French could regroup.

Any operational successes the Germans might achieve would have to work against the weight of superior Allied numbers: a 3:2 superiority over First Army and a 2:1 superiority over Second Army and the supporting half of Third Army. To some extent, operational art--skill in maneuvering for positional advantages vis-a-vis an enemy force--can compensate for an inferiority in material strength. There must be some tradeoff, poorly defined and hard to estimate, between operational positioning and force ratios. But the Allied superiority in strength meant that the Germans would have to work much harder to get their operational schemes to work, while the Allies could recover from reverses by

the mere application of force: sort of like rolling a boulder uphill, from the German perspective. Nor is it clear that the Germans had any net advantage in operational positioning, even by the late afternoon of September 9 (let alone around 2:00 PM, when von Kuhl finally accepted retreat).

The risks involved with First and Second Armies fighting it out on the Marne are clear: possible destruction of one or both armies. What were the possible gains? The attack of the left wing of Second Army had overrun the last good defensive position for the Allies between the Marne and the Seine, so that continuation of the attack might force the French to withdraw behind the Seine. In the opinion of the Official History, this would lead to the whole enemy front between the Ourcq and Aube [ie., the forces in front of First and Second Armies] to "fall apart."¹²³ The Official History does not mention any specific consequences arising from this falling apart of the enemy front, such as major enemy units surrounded or destroyed.

THE DECISION TO RETREAT FROM THE MARNE AND THE CAMPAIGN AS A WHOLE

At this point, it is helpful to enlarge the frame of reference and look at the importance of the German position on the Marne for the campaign as a whole. The tactical/operational situation of the German First and Second Armies would not by itself determine the outcome of the campaign. Rather it had a part to play in the whole. Enlarging our frame of reference from

the immediate environs of First and Second Armies to the campaign as a whole sheds additional light on the implications of the German decision to retreat from the Marne. By September 8 and 9, First and Second Armies no longer had a leading role in the OHL's plan for the campaign as a whole. They were to provide a flank guard to the army as a whole, while other German armies sought to destroy the enemy. A brief summary of the operational developments prior to September 5 shows that this was so.

After August 27, 1914, the First and Second Armies had pursued the defeated French Fifth Army and the BEF towards the southwest, away from the battlefield at St. Quentin. The goal of the OHL was to complete the destruction of these Allied armies, to remove them as further factors in the campaign. In this the Germans failed, in large measure because the German armies further in towards the pivot (at Verdun) of the German wheeling movement did not assist in this task.

German First and Second Armies, although they had defeated the French Fifth Army and the BEF and were pursuing them, could not cut off the Allied retreat. Both the Allies and the Germans could only move at the speed of marching infantry, and the Germans had no advantage in initial positioning for the chase. They could only follow directly in the wake of the retreating Allies, and any attempt to get around the Allied flank to cut off their retreat

would mean the Germans would have to move farther, hence faster, than the Allies.

But at that time, the German Third Army had a clear line of march to the rear or the flank of the retreating French Fifth Army, with no major Allied units in position to block this movement. German Third Army had only to march laterally across a gap in the "front." (This was still a war of movement; while armies might in places support each other flank to flank, in other places there were major gaps in the line. One such gap would have allowed the passage of German Third Army to the flank of the French Fifth Army.) If the German Third Army succeeded in coming down on the flank or rear of the French Fifth Army, while German First and Second Armies fixed the French frontally, the result could only be catastrophe for the French force.¹²⁴

But the German Third Army did not march for the flank and rear of the French Fifth Army. Instead, Third Army responded to a request for help from the neighboring German Fourth Army (on Third Army's left), which was meeting stiff French resistance as it attempted to force a crossing of the Meuse River. In assisting its neighboring army rather than moving in on the flank or rear of the French Fifth Army, Third Army made what the Official History terms a "tactical" move,¹²⁵ when it had a chance to make an operational move leading to the destruction of a major fraction of the enemy's force.

One does not ordinarily think of anything an entire army does as a "tactical" move, particularly if one thinks of the gradation between tactics, operations and strategy primarily as a matter of scale. But the German General Staff used a conceptual definition of operations, which shows up here in the Official History. If the action of a major unit contributed to a course of action leading to the successful outcome of a campaign, then that action was operational. If the action did not have the potential to affect the course of the campaign, then that action was merely tactical--regardless of the size of the action.

Of course a variety of courses of action might affect the outcome of a campaign. It was the job of the Chief of the General Staff, the generals commanding the armies, and the General Staff officers advising both of the above to see and choose the most effective courses of action. But the assistance German Third Army rendered German Fourth Army was not even a valuable course of action for the Germans, if less than ideal. It was actually counterproductive.

The reason was this: if the German right wing destroyed French Fifth Army and possibly other Allied units at the extreme end of the German sweeping movement, the Germans could curl inward, sweeping past Paris to the rear or flank of any French units holding near Verdun. This was after all the end goal of the Schlieffen Plan: to envelop the French armies and drive them back

on their own fortress line or the Swiss border. In effect the French on the Meuse were holding the deepest part of a sack, and the longer they held on the harder it would be to get out of it. By helping German Fourth Army to push the French back from the Meuse, German Third Army was actually helping the French improve their operational situation.¹²⁶ In isolation, the French defense of the Marne would seem to be a good idea. The French forces were holding back the invaders of their country. But within the framework of the campaign, the French were hurting themselves. From the German point of view, it was well that they should hold on as long as possible, and it was a major mistake to divert Third Army to attack them.

This paradoxical effect arises from the nature of campaigns. If the Germans wanted the campaign to take a certain course--for instance they wanted to destroy French Fifth Army and the BEF and then roll up the rest of the French line from (the French) left to right--then there are certain things the Germans should have done to force the campaign into the desired form, and other things they should have refrained from doing. To carry out the scenario outlined above, the Germans needed for Third Army to cut across the front to the flank or rear of French Fifth Army. They would have done well not to reinforce German Fourth Army's attack across the Meuse--particularly if the reinforcement came from Third Army, which had better things to do. It was sufficient if German forces

fixed the French defender's frontally, holding them in place. Movements and combats take on significance from their relation to the course of the campaign as a whole.

The campaign did not take on the form outlined above. The OHL did not see the operational opportunity clearly enough to specify clearly what Third Army should do. It did give Third Army a line of march that would have taken it in the right general direction, so there was time for the Germans to wake up to their opportunity. But then the commander of Third Army decided on his own authority and without asking the OHL to assist the Fourth Army. The OHL did not step in forcefully to stop this diversion of effort, and eventually even came to feel that the flanking attack of Third Army could lend the attack against the French in that sector a decisive character.¹²⁷

Thus the German lost one of their best chances to win the campaign. To win a campaign, the commanding general must see opportunities like that outlined above and then bend every effort to shape events in the desired direction. It is possible to outline a campaign from beginning to end only in the broadest outline. Schlieffen and the younger Moltke had created such a general outline for the campaign. In particular, the heavily weighted German right wing would make a scything movement across Northern France, pivoting on Verdun and pushing any enemy resistance out of its way. By August 27 the Germans had

accomplished this. But what they desperately needed to do now was to start to destroy large Allied units. They needed to take Allied units off the playing board so that the Allies could not form a solid front again, somewhere further south.

No one could predict where the opportunities to do that would come from. Both sides were maneuvering simultaneously, their relative positions changed constantly, therefore operational opportunities opened up and closed down within short time spans. The Germans needed to recognize a promising opportunity and exploit it. They needed to use military operations to shape that phase of the campaign to a form of their liking. This they failed to do.

Perhaps situations like this were what the elder Moltke had in mind when he said that most military plans do not survive the first encounter with the enemy. One could outline the Schlieffen Plan, set up its leading operational ideas and goals. But the various steps in the campaign, the parts that made up the whole, the German command would have to improvise. The Germans were in such a stage of the campaign between August 27 and September 6, as they sought to continue the great wheeling motion, and destroy Allied units in the process.

From September 2 to September 5, the younger Moltke pursued the idea of flanking the left of the French main body and rolling it up against the Swiss border. (The French Sixth Army and the BEF

had fled to the southwest out of the action. The left of the French main body was therefore the Fifth Army.) Even though German First Army abandoned its assigned role of guarding the right flank against thrusts from Paris and joined wholeheartedly in the effort to flank the French, the Germans did not succeed. They simply were not positioned at the start to do this against an enemy withdrawing as fast as the Germans could advance.¹²⁸

By the evening of September 4, the OHL recognized that the German Armies of the right wing could not hope to flank the French main body. Anxious not to lose the initiative, von Moltke then planned to try and damage the forces of the French middle with concentric attacks from both sides of Verdun, which was now a salient of sorts. Some attacks would come from forces which had marched past the fortress belt, against French forces holding to the left of Verdun. Other German forces would attack the northern end of the French fortress line. Hopefully coordination of such attacks would cause the French difficulty. At the same time, German First, Second, and Third Army would defend against the expected attack from Paris "offensively."¹²⁹

The German campaign now had not one but two objectives. One was to guard--"offensively"--against the expected French counterattack from Paris. The other was to try and damage the French forces of the middle, using a somewhat complicated operational scheme that involved coordination of attacks on the

bend in the French line at Verdun. As operational schemes go, this one would seem to offer considerably less operational leverage than the operational schemes the OHL had lately pursued: the attack on the line of retreat of the retreating French Fifth Army, or flanking the French main body. In the words of the Official History:

The "culminating point" of the German offensive had been overstepped. It had been gradually loaded down with too many burdens, to now bring sufficient force to bear on the solution of its new dual task [defense against attacks from Paris and offensive action in the Verdun area]. The basic idea of the German army leadership in a war on several fronts, the rapid destructive blow in the West, could not be accomplished in the way thus begun. The moment had come, when, in the considerations of the commander, sober judgement of the limits and potential for exploitation of military success must triumph over one-sided and stubborn adherence to a desire which had become unfulfillable. A firm decision to break off the operation thus far and to introduce another on a new, different basis was now indicated.¹³⁰

Thus the Official History evaluated the course of the campaign up to the eve of the battle of the Marne. The culminating point of an offensive is a Clausewitzian idea. It indicates the point at which an offensive has accomplished about all it can accomplish. Beyond the culminating point the offensive has in effect run out of steam. It would find it increasingly difficult to accomplish anything against the enemy, while becoming itself increasingly vulnerable to enemy action.

But on September 6 the Allies began a counteroffensive all along the line. For weeks the Allies had retreated, preventing the pursuing Germans from destroying large Allied units. This threatened the Germans with a strategic nightmare: that the Allies would play for time in the West, defending on one river line after another as the Germans tried to push them south, avoiding decisive action. Meanwhile, the Russian colossus would get moving in the East--with the Germans still tied down in France. The Germans had implemented the Schlieffen Plan precisely to avoid such a situation.¹³¹

In the opinion of the Official History, the Allied counteroffensive changed everything. The Allies stopped retreating and even went over to the offensive, offering the German command the decisive battle it had sought for weeks.

[this] offered the Chief of the General Staff the opportunity to seize the vanishing initiative once again and straighten out the mismanaged operational situation. The leading idea of the original plan of campaign for the war on two fronts [ie., rapid decision in the West] appeared still capable of fulfillment. The Sixth of September could become the turning point of the whole war!

Certainly the Allies offered the Germans decisive battle, but one cannot compare the counteroffensive of September 6 with the earlier Battle of the Frontiers. At the Battle of the Frontiers the French had suffered massive casualties attacking the Germans in the wooded hills of Lorraine. But at the Battle of the

Frontiers the French had attacked relatively fresh German troops. Further, they had attacked the center of the German line, not an overextended flank, as at the Battle of the Marne. Despite von Moltke's directives, First Army was not in any position to meet the attack from Paris, "offensively" or otherwise. The German right wing managed to escape destruction and even recover its equilibrium, but that does not mean it was in any position to destroy the attacking forces, who outnumbered the Germans.

In terms of the course of the whole campaign, it did not matter whether the Germans retreated from the Marne to the Aisne as they did, whether they maintained themselves on the Marne, or whether they drove the attacking Allies from the Marne to the next river line south, the Seine. The armies would still have faced each other frontally, with the only operational move open to them an attempt to flank the enemy line to the west: the Race to the Sea, which was the sequel to the historical German retreat to the Aisne.¹³² The only thing that would have mattered would have been if First and Second Armies had destroyed a really large fraction of the attacking Allied forces. Given the numerical inferiority of German First and Second Armies and their awkward operational situation by September 9, this was unlikely.

In short, operational analysis of the course of the campaign prior to September 9 does not support the idea that the retreat from the Marne was a missed opportunity for the Germans to win the

campaign as a whole. The Germans were more likely to lose the campaign decisively on the Marne through the loss of First and Second Armies than to turn the campaign around through some stunning success. Any result of the battle other than the dramatic destruction of Allied or German forces would have only confirmed the trend of the previous days: the German offensive was winding down, as the outnumbered forces of the German right wing proved unable to exploit progressively dwindling advantages in operational positioning. As for the successes of German First and Second Army on September 9, one should remember that a withdrawal in the face of the enemy is one of the most difficult military operations. The German successes may only have bought them maneuvering room to make their retreat in good order.

The retreat from the Marne certainly signalled the failure of the Schlieffen Plan, but it did not necessarily cause it. The Germans had already failed to grasp their best operational opportunities for winning the campaign, in the period from August 27 to September 6. (In part because the French had managed to retreat their way out of some dangerous operational situations, and the Germans were unable to stop this.) The German Official History argues that the best option for the Germans on September 5 was to halt operations and begin the campaign anew on the basis of a new scheme of operations once German Seventh Army came up. The Official History does not present any convincing arguments that

the French counteroffensive on September 6 changed this situation in any basic way.

The German Official History essentially presents the General Staff's retrospective on the Battle of the Marne. The anonymous author(s) of the account obviously possessed experience at the higher levels of command in the war. The conception of operations and operational art that runs through the Official History's account is of the highest level of sophistication this writer has encountered. But the Official History departs from its own sophisticated conceptualization of operational art when it concludes its account of the German retreat from the Marne as follows: [in bold-faced type] "The mighty world-historical struggle on the Ourcq and Marne was broken off! The German right wing began the retreat out of the already attained victory!"¹³³ In fact the General Staff had failed to win the great operational victory on which it had banked Germany's future.

The Schlieffen Plan essentially rested on the assumption that the General Staff would come up with such a victory at the moment of crisis. It could have rested on nothing else. The invading German forces had no great margin of material strength with which to invade France and destroy the French army in six weeks. Even in the sphere of operations, the Germans conceded to the French certain permanent operational advantages: the French could use the fortress line as an economy of force area, the major fortress

of Paris was an ideal staging area for French counterattacks against the German right wing, and the French would have access to an undisturbed rail net to shift forces between the fortress line and Paris. If the Germans were to win the campaign and win it quickly (which was after all essential to the strategic aspect of the Schlieffen Plan), the Germans would have to prove much better than the French at operations. What the Germans really needed was a Tannenberg on the Western Front.

This puts the bungled German attempts to isolate and destroy major Allied units between August 27 and September 5 in the proper perspective. The General Staff's strategy for the conduct of the war depended on the success of these operations. The Schlieffen Plan had worked up to a point. The heavily weighted right wing had swung across Northern France, sweeping aside all opposition. But in order to prevent the French from eventually recovering their balance and restoring a stable front, the Germans had to destroy major Allied units, not just drive them back. The Germans had to exploit their victories thus far. This would have to come from recognizing and seizing operational opportunities as they presented themselves, such as German Third Army coming down on French Fifth Army's line of retreat, or flanking the French main body. The General Staff undoubtedly thought itself unsurpassed at this type of operation. But in the event they could not quite pull it off.¹³⁴

There is a certain unconscious intelligence to the Official History's position on the Battle of the Marne. The Germans desperately needed a smashing operational success in the West about this time. They needed one to win the campaign in the West decisively, rather than have it bog down into a stalemate. But this does not mean the Germans were actually in a position to win a smashing victory on the Marne. Consideration of the operational situation of the German right wing at the time of the decision to retreat suggests otherwise.¹³⁵

THE GERMAN COMMAND AND CONTROL SYSTEM DURING THE BATTLE OF THE MARNE AND ITS PRELUDE

There were obvious problems with the German command and control system before and during the Battle of the Marne. But one should put these failures in perspective. No one else in World War I ever conducted an offensive campaign comparable in speed and scope to the German invasion of France. The Allied offensives in 1918 were of a comparable scale, but moved much more slowly. So did the German campaigns in the East, except for the destruction of Roumania. Indeed, the victorious German campaign in France in 1940 was the next historical example of a campaign comparable in speed and scope to the Schlieffen Plan. The problems involved in coordinating the movements of millions across distances measuring in the hundreds of miles were of a formidable nature, just as the younger Moltke had foreseen before the war

The wonder is not that the German command system functioned poorly, but that it functioned at all. Good communications would have alleviated the German problem somewhat, though not entirely. Since the Germans were the invaders, they tended not to have good telephone connections between headquarters, whereas the French retreated into an undestroyed telephone net. Radio, then in its infancy, was a poor substitute for telephone links. Even when it worked, and did not involve lengthy delays, radio allowed only an exchange of (brief) messages, not an exchange of views on the operational situation. Moreover, the OHL and von Moltke in particular did not show much energy in utilizing fully or expanding the communications links that were available.¹³⁶ Perhaps this was because the Germans had put a lot of effort into a decentralized command system which minimized reliance on extensive communications. But it is clear that at a number of points in the campaign, misunderstandings or lack of information arising from spotty communications cost the Germans dearly.

Ironically enough, Lt.-Col. Hentsch, shortly before embarking on his historic mission to the front, had made known his belief that the French possession of an undestroyed telephone and rail net amounted to a strategic advantage for them.¹³⁷ At the crisis of the Battle of the Marne, there was no telephone line between First and Second Army headquarters, let alone a line back to the OHL in Luxembourg. First and Second Armies established telephone

connection on the afternoon of September 9--after Hentsch had already ordered First Army to retreat.¹³⁸ A working telephone connection between First and Second Army headquarters would not necessarily have prevented the German retreat, but it certainly would have reduced the uncertainty and confusion that surrounded the estimation of the operational situation of the two armies, and ameliorated the coordination problems which Hentsch had to cope with. But maintaining good telephone links between army headquarters was precisely the kind of thing that was hard to do in a fast moving campaign.

The detailed reconstruction in the German Official History of Hentsch's two missions to the front in September 1914 offer a rare opportunity to observe the detailed workings of the German system of decentralized control, *Weisungsfuehrung* and *Vollmacht*. It becomes apparent that the General Staff's conception of operational art was closely linked to *Weisungsfuehrung* and *Vollmacht*. In fact one can go further and state that *Weisungsfuehrung* and *Vollmacht* required a conception of operational art in order to work. The German system of decentralized command and control and the German conception of operational art went hand in hand.

The explanation is simple. A directive from the OHL attempted to specify precisely the OHL's operational intention for the subordinate unit--the part it was to play in the OHL's scheme

of the campaign as a whole. Due to communication limitations, communications capacity to say much more than that was not available, nor in a sense was anything more really necessary. Presumably, the army commanders and their staffs would adapt OHL's intention to the ever-changing local situation, which the army could oversee better than the distant OHL. One aspect of adapting the OHL's intentions to the local realities might include exploiting fleeting operational opportunities.

A shared conception of operational art among the General Staff and the higher German commanders made this possible. (One of the functions of General Staff officers was to point out operational opportunities to commanding generals, if the generals could not or did not see them for themselves.) This illuminates the importance of the stress on operational thinking in the General Staff's selection and educational process, an educational process which continued throughout a General Staff officer's career. First of all, someone at the headquarters of an army had to understand what a short, possibly even cryptic, directive from the OHL was getting at, in the operational sense. Once the OHL's intentions were clear, there remained the work of adapting the OHL's intentions to the local battlefield. This necessarily involved original operational thought. No wonder the General Staff required, through its rigorous selection and educational

process, that every General Staff officer be capable of independent operational thinking.

There were only two alternatives for controlling the German campaign in France. The Germans could have attempted to control everything from a central location (the OHL): gather information from the subordinate units and intelligence resources about the situation at the front, collate all available information to arrive at a detailed picture of the situation at the front, decide on a course of future action, issue detailed instructions to the subordinate units. This procedure has advantages: it would tend to ensure a greater degree of coordination of the actions of the subordinate units. This centralized approach would also likely work very slowly. Under the centralized approach a primary role of subordinate units is to report information to the central command. The subordinate units handle the petty details connected with actions ordered by the central command, but the scope of the subordinate units decision making powers is very limited.

The alternative would be to leave everything or nearly everything to the subordinate units. Arguably the OHL came close to this situation in the five day period from September 5-September 9--the crisis of the Battle of the Marne--when the headquarters in Luxembourg had a very hazy picture of what was going on at the front. During this period, decisions made at the front by the army commanders and Hentsch probably did more to

shape the course of the campaign than anything the OHL had to say. The local commanders acted energetically, certainly, but they did so in ignorance of the course the campaign as a whole was taking.¹³⁹ In other words, this state of affairs maximized problems of coordination between the German units.

The General Staff system of control through directives based on the operational intentions of the OHL was an attempt to get the best of both worlds. The OHL would follow the course of the campaign in outline--sufficiently detailed to follow the evolution of the campaign and the direction it was taking. The OHL needed nothing more to discern the direction it wanted the campaign to take, and the role the various armies should play in shaping the campaign to the OHL's liking. The field armies would then attempt to realize the OHL's intentions, adapting their actions to the local operational situation and the actions of the enemy. The OHL delegated more than just detail to the subordinate armies: it delegated a certain amount of decision-making, even fairly high-level decision making.

Appearances notwithstanding, giving subordinate commanders the widest possible latitude was not the goal of the German system of decentralized control through operational directives. Rather the intent was to specify as closely as possible the actions of the subordinate unit *in the operational sense*. If one accepts the idea that operational considerations really do affect the course

of a campaign, this means that the German command system, by specifying operational courses of action, specified the aspect of the subordinate commander's action most relevant to the course of the campaign---leaving other matters to the discretion of the subordinate commander.

A return to the OHL directive of September 2, 1914, which governed the actions of First and Second Army for three days between September 2-5, may illustrate this point. The directive first gives the overall intention of the OHL: "Intention of the OHL, to push the French in a direction southeast of Paris." The directive then specifies the operational role of both armies in this action: "First Army follows Second in echelon and further provides flank protection for the [entire] army." And that is all, apart from a few lines urging First Army to have its cavalry appear in front of Paris (presumably to spook the French command) and to destroy roads leading to Paris.¹⁴⁰

When First Army received this message, First Army was actually echeloned ahead of Second Army, not behind. Further, while First Army, because of its position relative to the retreating French, had some chance of pushing them southeast away from Paris, Second Army had little chance of doing so. Accordingly, First Army decided to continue pursuing the French, thereby following the overall "intention of the OHL," at the cost of neglecting its assigned role as flank guard for the army.¹⁴¹

In the end neither First nor Second Army caught the retreating French, and First Army's neglect of its role as flank guard caused the Germans serious problems when the French counterattacked. But First Army's actions show the extent of the latitude army commanders had in reconciling the intentions of the OHL with the local situation.

The main drawback of any system of decentralized control is the prospect that a subordinate will take action which does not fit in with the overall plan. Coordination of the actions of subordinate units, so that everyone's action fits into some larger scheme of things, can be difficult enough without subordinate units acting on their own. Real decentralized control means subordinate units can (and will) take action without clearing it with higher authority first. Thus, decentralized control inevitably makes the task of coordinating action more difficult. On the other hand, decentralized control may allow subordinate units to act and react more quickly, and in a fashion better adapted to the exigencies of the local situation. In adopting a system of decentralized control, one hopes that the benefits of increased responsiveness will outweigh the detriments of generally poorer coordination.

In the case of the Germans in 1914, decentralized control sometimes led to poor coordination. For instance, von Kluck attempted to flank the French main body in early September 1914, a

task the OHL had assigned to Second Army. First Army's assigned task was to guard the flank towards Paris. This was a failure in coordination from the OHL's point of view--particularly once the French did attack the flank, and caught First Army unprepared. At the same time, von Kluck's action might have been worthwhile, had he succeeded in flanking the French. It was a calculated risk which did not pay off. On the other hand, the German system also allowed von Gronau, acting on his own authority as a corps commander, to undertake a reconnaissance in major force towards Paris, simply because of suspicious French activity on his front and because he knew the presence or absence of French forces near Paris was the question of the hour for his superiors. This action may well have saved the German right wing from destruction.

The German Official History argues that von Moltke could have overcome many of the command and control difficulties the Germans faced in the campaign through more personal interventions. In other words, von Moltke should have visited the front more often. He could have set up a flying headquarters of the OHL at Rheims, for instance, a place that had telephone lines back to Luxembourg. From Rheims he could have kept in touch with the main headquarters in Luxembourg, while getting messages from the front more quickly than he could in Luxembourg. From Rheims, he would have been within easy driving distance of the front, for personal visits.¹⁴²

While an arrangement like this might in fact have helped, it would be in the nature of what the Germans call an *Aushilfe*--an expedient. It would not have entirely solved the problems of coordination the German campaign faced. For one thing, moving von Moltke to a forward command post or having him visit the front more often would inevitably have weakened the central headquarters in Luxembourg. Doubtless the higher level General Staff officers at the OHL, such as Tappen, perhaps helped along by temporary grants of authority such as Hentsch enjoyed in the field, could have kept the OHL in Luxembourg going as something of a command center even in Moltke's absence. But inevitably, increasing von Moltke's contact with the front would reduce his ability to oversee the whole. Von Moltke would himself have assumed some of the role Hentsch and the army commanders played historically. With von Moltke as his own *Bevollmaechtigte*, the German command system would have remained essentially decentralized.

In a command system as informal and heavily dependent on trust as the German, it would be surprising if personalities had not been a factor in the functioning of the German command system. They were. There were particular problems between two of the critical actors, von Kluck and von Buelow, commanders of the German First and Second Armies, respectively. The account in the Official History makes it sound as if they basically were not speaking to each other: "That the gap between the First and Second

Army in fact turned into a source of serious danger ... [could only arise because] every connection, every personal relation of the responsible Commanders or Chiefs [of Staff] on this part of the theater of war was as good as entirely missing."¹⁴³ Apparently not only were First and Second Armies not connected by telephone lines, there was no exchange of liason officers at the height of the battle, with one exception (mentioned in the previous chapter). This even though the two headquarters were not at any point far apart--First and Second Armies were, after all, neighboring armies.

As the fighting grew more intense on the fronts of both armies, the task of keeping in touch with the neighboring army slipped into the background.¹⁴⁴ While this is understandable enough, a military force which cannot maintain liason between neighboring armies should not expect to decisively outmaneuver an enemy in the operational sense. Better liaison between First and Second Armies, which should have been a routine staff function, could have saved the Germans much trouble at the Battle of the Marne. For instance, poor coordination of the forces screening the gap between First and Second Armies meant that on September 9 the English I Corps and II Corps crossed the Marne unopposed, on intact bridges. The English III Corps, on the other hand, barely made it across the Marne that day, having to fight its way across: the German screening forces in that sector had done their job

properly.¹⁴⁵ Rather than making derogatory remarks about how slowly the English operated, the First and Second Armies would have been better off blowing up bridges and covering likely crossing points with fire.

Earlier in the campaign, when the German right wing was still fighting on the Sambre and Meuse, the OHL had temporarily placed the First Army under von Buelow's direction, as an emergency coordination measure. By the time period immediately preceding the Battle of the Marne, this measure no longer applied.¹⁴⁶ Yet it might have saved the German right wing much confusion if this emergency measure had remained in effect throughout the course of the campaign. It was too much to expect the OHL to control eight independently moving armies, each with its own complicated operational situation, from any single location. In effect, the Germans needed an army group organization, which they adopted for the army in the west (apart from the early expedient mentioned above) on November 25, 1914.¹⁴⁷

Neither the Germans nor anyone else had ever experimented with an army group organization. There had not been the need. But the German 1914 campaign in the west had shown clearly enough the defects of trying to coordinate maneuvering armies as single units. The younger von Moltke had seen some of the problems involved in a campaign of this scope, if not all of the solutions. Since an army group organization in effect decentralizes the

control of armies from the supreme headquarters to the army group headquarters, one of the solutions to the problems the Germans faced in the campaign was in fact more decentralization, not more centralization.

It is hard to fault von Moltke's generalship in the events that led immediately to the Battle of the Marne. (He was to blame for weakening the decisive right wing (First, Second, and Third Armies) by 96 battalions over the course of the campaign, for such projects as garrisons in Belgium and reinforcements for the Eighth Army in Prussia.¹⁴⁸ This was the equivalent of 8 divisions, or 4 army corps.) Von Moltke had seen the danger of counter-attack from Paris and directed First Army to address itself to that threat, in what should have been plenty of time.

But First Army acted on the opportunity to achieve an operational victory rather than the purely cautionary task of covering Paris. It seems unlikely that First Army would have done so if it had known why the OHL had ordered it to cover Paris: because the OHL had evidence of troop transfers from other parts of the French line to the area of Paris. First Army's ignorance of these troop transfers was thus one of the pivotal factors in the campaign. Yet it is hard to fault the OHL for not informing First Army of this. The OHL had many things on its collective mind. First Army had a directive to cover Paris in any case, and the limitations of radio transmissions prohibited more extensive

communications. It would have been difficult for anyone to anticipate in any way the effects of this minor omission. Doubtless Clausewitz had such matters in mind when he spoke of the frictions of war.

This matter makes it possible to isolate more precisely how poor communications hurt the Germans during the campaign. The problem was not so much that army commanders did not know in general terms what they should do. The problem was that they lacked the picture of the overall unfolding of the campaign that might have informed their interpretation of what they should do. Even with poor communications, the German system still allowed for the rapid exploitation of opportunities and adaptation to local circumstances--First Army's actions might rank as an example of that, actually. It was at the conceptual level that the system broke down. Commanders no longer knew which of the opportunities they might exploit made sense in terms of the overall campaign; they no longer knew how to adapt to local circumstances in ways that would benefit the *campaign*. The converse of the problem afflicted the OHL. From scattered reports and overheard messages between neighboring armies--often cryptic, the OHL could not form a coherent enough picture of the unfolding campaign to sensibly direct its further course.¹⁴⁹ In other words, the Germans lost track of the operational unity of the campaign, from the point of view both of OHL and the individual armies. The actual course of

the campaign shows one of the dangers of a decentralized control system: giving subordinate units the power to act independently, without their having a means of recognizing the demands of coordinated action, of the whole.

In one respect, at least, the German command system functioned at the Battle of the Marne. In the final analysis, a command system cannot do any better than to accurately reflect the will of the overall commander. At noon on September 9, at his headquarters in Luxembourg, von Moltke proposed to his advisors the withdrawal of the entire right wing of the German army as the only solution to the operational crisis of the German campaign. At precisely the same hour at First Army headquarters, Hentsch ordered retreat in the name of the OHL.¹⁵⁰ Small wonder that von Moltke never charged that Hentsch had exceeded his authority on his mission to the front, despite Hentsch's free use of *Vollmacht* to order retreat.¹⁵¹

The Battle of the Marne and the events preceding it illustrate an important point. Coordination problems in warfare are real, and they have important effects. The main problem the Germans faced in the campaign was that no one either at headquarters in Luxembourg or at the front could get a clear picture of how the campaign as a whole was unfolding. At another level, Hentsch had to accept the fact that minimum reliable round trip message time between First and Second Army headquarters was

about 11 hours, ie., double the time it took him to drive from First to Second Army. This meant he had to make certain arbitrary rules to govern Second Army's actions, namely that Second Army must retreat as soon as the English crossed the Marne in force. This in turn limited his flexibility at First Army headquarters. To cite another example, von Buelow could only know how an attack of his own army was going with a delay of several hours, and this may have affected his decision to retreat.

Coordination problems are real; they limit the effectiveness of military units. They will cause a unit to perform less effectively than if its commanders always had perfect intelligence and operational insight, there were no communications problems or delays, and large units responded to orders like squads at close order drill. One would be better off admitting that from the start. Of course, some units and some armies will lose less efficiency due to these factors than others. But there is a widespread tendency, especially in the writing of military history, to act as if these factors should not exist at all--as if units should actually achieve everything that they could conceivably achieve.

In his book on naval tactics, Wayne Hughes observes that "military historians are too quick to point out opportunities that could never have been exploited."¹⁵² The German Official History falls prey to this failing in its treatment of the Battle of the

Marne. To add an instance to those already cited, it observes at one point that "Retrospective observation on the basis of present day knowledge of the situation of the enemy on the afternoon of September 9 gives the picture of a complete victory of the German right wing."¹⁵³ But one cannot expect battlefield commanders to act as if they knew the enemy's situation as completely as historians reconstructing the situation (at leisure) from the other side's documents after the war.

How well did the German command system work prior to and during the Battle of the Marne? The Germans themselves had set the relevant standard by their choice of the strategy embedded in the Schlieffen Plan. To overcome the relative equality in numbers, the French fortress zone, and the undestroyed French railway and communications net--all within a short time frame--the German command system had to work much better than the enemy's. It did not. But it did produce decisions that were at least rational in the operational sense while operating with poor communications and little direction from the center. The Germans did not win the glorious victory they needed on the Marne, but they did recover from a potentially disastrous situation.

On September 14, 1914, the Kaiser relieved von Moltke of his position as Chief of the General Staff, replacing him (in secret) with Lieutenant-General Erich von Falkenhayn. A sick man, von Moltke would play no further role in the military direction of the

war. But the decentralized command and control system of *Weisungfuehrung*, which the younger von Moltke had done so much to preserve and promote in the German army, would survive to see find uses in the rest of the war which the younger von Moltke could not have foreseen.

-- Notes --

1. Reichsarchiv, Der Weltkrieg, vol. 4, p. 220
2. Ibid.
3. Ibid, p. 21. See also p. 22ln2. .
4. Ibid., p. 221
5. Ibid., p. 222
6. Ibid., p. 222
7. Ibid., p. 222-23.
8. Ibid., p. 223
9. Ibid., p. 223-226. Elsewhere, the Official History points out that Hentsch could have at least made some notes for his own use, a practice it describes as "thoroughly usual" among General Staff officers. It points out that such notes, even without a signature from von Moltke, could have been "of great importance" (certainly for historical purposes). See Ibid., p. 231.
10. Ibid., p. 226
11. Ibid., p. 225
12. Von Moltke wrote this comment in the margin of First Army's war diary, hence the uncertainty of the date. Ibid., p. 223-24.
13. Ibid.
14. Ibid., p. 224
15. Ibid.
16. Ibid.
17. Ibid., p. 225.

18. Ibid.

19. Ibid., p. 226

20. In its discussion of a special mission of Major Max Bauer to the Sixth Army, the Official History maintains that Bauer did not hold *Vollmacht* during that mission, contrary to the impression he gave on the scene. The sentence referred to in the text reads in the original: "*Einen bestimmten, ueber allgemeine Orientierung hinausgehenden Auftrag oder eine Vollmacht der Obersten Heeresleitung, in ihrem Namen Weisungen zu geben, hatte er, soweit bisher festzustellen, nicht gehabt.*" [He did not have, as far as can be thus far determined, a definite mission going beyond general orientation, or a *Vollmacht* from the OHL, to give directives in its name.] Reichsarchiv, Der Weltkrieg, vol. 3, p. 285.

21. Reicharchiv, Der Weltkrieg, vol. 4, p. 516.

22. Ibid., p. 222.

23. According to a message also received on the morning of September 8, the Allies had evacuated the Belgian coast. This freed the 7th Army from the task of protecting the army's communications and made it available for other purposes. See Ibid., p. 221-22.

24. See Ibid., p. 222. Hentsch did not express this view at the September 8 meeting with von Moltke, Tappen and von Idommes, but clearly held it at the time. See Ibid., p. 228-29, p. 229n2.

25. Ibid., p. 226. The German in the Official History reads "... *Antworten und Fragen, die er stellte.*" According to the sense of the quotation, this probably should read "*Antworten auf Fragen, die er stellte.*"

26. Ibid.

27. Ibid.

28. Ibid.

29. Ibid., p. 227.

30. Ibid., p. 227-28.

31. Ibid., p. 227.

32. Ibid.

33. Ibid., p. 223.

34. Ibid., p. 262. The original in the Official History reads "... *erklarte Hentsch schliesslich, er habe die Vollmacht, der 1. Armee in Namen der Obersten Heeresleitung den Rueckzug in die Linie Soissons-Fismes anzubefehlen.*" Germanists will recognize the use of the "indirekte Rede," or indirect speech, a form of indirect quotation. Because of the use of this particular grammatical construction, it is not clear the Official History means to reproduce the exact words of Hentsch, or only a paraphrase. (For this reason, I did not put quotation marks around the English translation of Hentsch's statement in the text.) At a minimum, the use of "indirekte Rede" shows Hentsch used words to the effect of those quoted, including, we may presume, "*Vollmacht*" and "to order" ("*anzubefehlen*").

35. Ibid., p. 230.

36. Ibid., p. 228.

37. Ibid., p. 231.

38. Ibid., p. 221.

39. Ibid., p. 228-29. The Official History apparently bases this assessment on information from another officer in the OHL at the time, as well as Hentsch's actions during his famous trip to the front. See p. 229n2.

40. Ibid., p. 230-233.

41. Here the Official History relies on a report of the Operations Officer (Ia) of the First Army, Lieutenant-Colonel Matthes. Ibid., p. 233.

42. Ibid., p. 234. Matthes was the source for this exchange as well.

43. See Ibid., p. 237-39.

44. Ibid., p. 235.

45. Ibid., p. 235.

46. Ibid.

47. Ibid. See also Ibid., p. 264 for Hentsch's use of the expression "*Schlacke*" while at First Army Headquarters.

48. Ibid., p. 235-36.

49. Ibid., p. 236.

50. Ibid., p. 237. The original reads "*er habe Vollmacht, dies im Namen der Obersten Heeresleitung noetigenfalls zu befehlen.*" The Official History encloses this phrase in quotes, that is to say as a direct utterance of Hentsch. The reason for use of the indirect quotation verb form is not altogether clear. It may reflect a paraphrase of Hentsch's words, or else the tendency in the German language and especially military writings of the period to direct attention away from the first person singular.

51. Ibid., p. 237.

52. Ibid., p. 237-39.

53. Ibid., p. 239. This quotation is also in the form of "indirect quotation" in the the Official History, which however places the passage cited inside quotation marks.

54. Ibid., p. 239-40

55. Ibid., *passim*, see in particular p. 240 and p. 270.

56. Ibid., p. 240.

57. Ibid., p. 222.

58. Ibid., p. 239.

59. Ibid., p. 240.

60. Ibid., p. 241.

61. Ibid., p. 243.

62. Ibid., p. 241-42.

63. Ibid., p. 243.

64. Ibid., p. 241-42.

65. Ibid., p. 242.

66. Ibid., p. 243.

67. Ibid., p. 255-56.

68. Ibid., p. 257.

69. Ibid., p. 256.

70. Ibid., p. 257

71. Ibid.

72. Ibid.

73. Ibid., p. 358-59.

74. Ibid., p. 236-37.

75. Ibid., p. 258, see also p. 236-37.

76. Ibid., p. 258.

77. Ibid., p. 268.

78. See the detailed discussion of this point in the text below, based upon the Official History at Ibid., p. 264 and p. 236-37.

79. Ibid., p. 140.

80. Ibid., p. 259-60

81. Ibid., p. 259n2.

82. Ibid., p. 259-60.

83. Ibid., p. 262.

84. Ibid., p. 269-70.

85. Ibid., p. 263.

86. Ibid., p. 262. The Official History puts Hentsch's statements in the form of "indirect quotation," but without quotation marks.

87. Ibid., p. 262-63.

88. Ibid., p. 258.

89. Ibid., p. 522.

90. Ibid., p. 522-23.

91. Ibid., p. 523.

92. Ibid., p. 522.

93. Ibid., p. 259, p. 259n2, p. 263n2.

94. Ibid., p. 241-42.

95. Ibid., p. 261.

96. Ibid., p. 264. In the German, Hentsch said "*Der Entschluss zum Rueckzug ist dem alten Buelow sehr sauer geworden.*"

97. In the German "... *der rechte Fluegel* [of Second Army] *sei nicht zurueckgegangen, sondern zurueckgeworfen.*" Ibid.

98. "*Die 2. Armee sei nur noch Schlacke.*" Ibid.

99. Ibid.

100. Ibid., p. 264-65.

101. Ibid., p. 258.

102. Ibid., p. 264.

103. Ibid., p. 236-37.

104. Ibid., p. 261.

105. For statements of this type from Second Army officers, see Ibid., p. 235. For similar statements from First Army officers, see p. 261.

106. Ibid., p. 235-36.

107. This is the implication of the Official History's account, although it does not directly accuse Hentsch of this particular confusion. See Ibid., p. 235-36, p. 264 and p. 264nl.

108. Ibid., p. 264.

109. Ibid., p. 265.
110. Ibid., p. 265.
111. Ibid., p. 265-66.
112. "*Seelisch tief erschuettert.*" Ibid., p. 266.
113. Ibid., p. 268.
114. Ibid., p. 268.
115. Ibid.
116. Ibid., p. 268-69.
117. Ibid., p. 269, p. 269nl, p. 267nl.
118. Ibid., p. 269-70.
119. Ibid., p. 265.
120. Ibid., p. 245.
121. Ibid., p. 246-55, especially p. 253-55.
122. Ibid., p. 254-255.
123. Ibid., pp. 523, 255.
124. Ibid., p. 511-513.
125. Ibid., p. 511.
126. Ibid., p. 511.
127. Ibid., p 511-512.
128. Ibid., p. 515-16.
129. Ibid., p. 516.
130. Ibid., p. 517.
131. Ibid.

132. Actually, if the Race to the Sea had started from the Marne or the Seine, it would have presented a nice problem for the

Germans: Paris would be in the way of extending the German lines, and they would have to bend around that fortress in what could only have been an awkward fashion. The Germans wisely wished to defeat the French armies in the field before they besieged Paris.

133. Ibid., p. 270.

134. Partially because the French command acted intelligently at this stage of the campaign. Along much of the front they retreated as fast as they could. (If certain units had tried to stay in place or even retreat more slowly, the Germans undoubtedly would have destroyed them.) Meanwhile the French accepted risks along the fortress line, used it as an economy of force area, and used the troops thus released to build a mass of maneuver in the Paris area. Their counteroffensive on September 6 then caught the German right wing in a most awkward operational situation.

135. It is interesting to note that the smashing operational victory the Germans won at Tannenberg released the Germans from the immediate strategic implications of the stalemate in the West. The German nightmare was a drawn out campaign in France, with the German armies still mainly engaged in the West, just as the Russian steamroller finally got going. The Germans got a stalemate in the West, but Tannenberg forestalled an immediate threat from the Russians.

136. Ibid., p. 519. For instance, it would have been possible to send communications liaison officers to the army headquarters, and to set up relay stations for messages at those points closest to the front which possessed wire links to the OHL in Luxembourg.

137. Ibid., p. 228. This information comes from Captain Koenig, a trusted subordinate of Hentsch's at the time.

138. Ibid., p. 521.

139. Ibid., p. 519.

140. Reichsarchiv, Der Weltkrieg, 1914-18, Vol. 3 (Berlin, E. S. Mittler and Sohn, 1926), p. 231-32.

141. Ibid., p. 236-37.

142. Reichsarchiv, Der Weltkrieg, vol 4, p. 519.

143. Ibid., p. 520.

144. Ibid., p. 522.

145. Ibid., p. 520.

146. Ibid., p. 528.

147. Edgar Graf von Matuschka, "Organisationsgeschichte des Heeres 1890 bis 1918," in Deutsche Militaergeschichte in sechs Baenden 1648-1939, Vol. 3, Gerhard Papke and Wolfgang Petter, ed. (Publisher: Militaergeschichtliches Forschungsamt. Herrsching, Licensed edition for Manfred Pawlak Verlagsgesellschaft mbH, 1983), p. 223. At one point the OHL unified the forces of the German extreme left wing under local commanders as well, early in the 1914 campaign.

148. Reichsarchiv, Der Weltkrieg, vol. 4, p. 510.

149. Ibid., p. 526.

150. Ibid., p. 530.

151. Ibid., p. 531.

152. Wayne P. Hughes,, Jr., Fleet Tactics: Theory and Practice (Annapolis, Naval Institute Press, 1986), p. 191.

153. Reichsarchiv, Der Weltkrieg, vol. 4, p. 255.

CHAPTER V

THE ARTILLERY EXPERT: GEORG BRUCHMUELLER

The common wisdom has it that machine guns caused the trench deadlock in World War I, and the common wisdom is close to the mark. It is closer to the mark to say that increased firepower--artillery, machine guns, even rifles--caused the trench deadlock of the First World War. That, and the ability of the defense to dig in, which made it less vulnerable to the vastly increased firepower than an attacker advancing in the open. It was possible, given the right equipment and techniques (which in fact took years and great effort to develop--this is a matter which will come in for discussion later in the chapter) for an attacker with numerically superior artillery to largely suppress the defending artillery. That left the defending rifles and machine guns as a problem for the attack. The rifles, though much more powerful than the weapons which had produced trench fighting in the American Civil War, were not as much as a problem for the attack as machine guns. The tremendously powerful (by 1916 at any rate) artillery of the First World War could neutralize the defending riflemen, at least enough so that the usually much more numerous attacking riflemen could defeat them. Machine guns were

more of a problem, for they represented a more concentrated source of firepower.

It is not hard to see how a weapon capable of firing 600 rounds per minute (a typical "cyclic rate" for a World War I machine gun) could kill or wound large numbers of soldiers in a short period of time. But if anything, the raw cyclic rate understates the killing power of the weapon. What made the machine gun so destructive was not just that it could fire ten rounds a second, but the means of controlling it: the tripod. The weight of the heavy tripod helped absorb the recoil of each round, keeping the gun on approximately the same bearing (with a certain amount of vibration around the point of aim, which was actually helpful in terms of distributing the fire). Furthermore, all military tripods had means of mechanically changing the elevation (up and down bearing) and traverse (right and left bearing) of the gun--typically all the gunner had to do was turn a hand wheel. This meant that even a frightened gunner with shaking hands could accurately control a source of heavy firepower. A rifleman, on the other hand, in order to hit anything, had to assume a stable position, form a sight picture comprising the target, his foresight, and his backsight (difficult for the eye to do since all of these elements are at a different distance from the eye, hence impossible to focus on simultaneously), control breathing, and gently squeeze the trigger while continuing to hold the target

steady in the sights. This was difficult enough to do on a safe, controlled rifle range. It strains the imagination to imagine doing it on the field of battle, although casualty rates attest it has been done often enough. But the tripod allowed the machine gunners to bypass this complex operation demanding precise psychomotor skill and control under stress (aiming a rifle) favor of turning a simple hand wheel. Small wonder someone once termed the machine gun a "nerveless rifle."

Beyond the machine gun's high rate of fire and ease of handling, certain ballistic characteristics of the round it fired (usually identical to the standard rifle round of each nation), together with its mechanical traversing mechanism, contributed to its effectiveness. A full power military rifle bullet, aimed with the correct elevation to hit a target laying on the ground 700 meters away, will not rise more than six feet above a direct line between the gun barrel and the target.¹ Six feet is the approximate height of an erect man. Thus a machine gun, firing over level or uniformly sloping (as at the Somme) ground, could hit any erect man in the line of fire out to a distance of 700 meters—without adjusting the sights for elevation. It was then a small matter for the machine gunner to turn the traversing wheel and hit a whole line of advancing men. Imagine machine gunners then, not just shooting at individual targets (although they certainly could do that as well), but sweeping out great arcs of

fire 700 meters deep, hitting everyone standing or walking in that arc. Imagine the target: a dense crowd of infantrymen struggling across broken ground littered with obstacles. For the machine gunners, slaughter was a matter of setting the elevating screw correctly, traversing the gun slowly, and keeping the gun fed with bullets.²

Throughout history, whenever an attacker advanced into effective range of defensive missile weapons, whether those were spears, slung stones, arrows, musket balls or rifle bullets, the attacker would inevitably take casualties. (Unless of course the defenders ran away first, which was not unheard of.) Up until the modern era, the way attackers attacked successfully was to pack so many soldiers into the attack that there were just too many targets for the defenders to hit, in the time it took the attacker to cross the zone of effective fire. Then hopefully there would be enough surviving attackers to defeat the defenders in hand-to-hand combat.

After about 1850 this became harder and harder to do, especially against entrenched defenders. In the First World War it became impossible, at least for attackers whose tactical technique did not extend beyond walking forward into fire. Against machinegun fire, increasing the density of the attackers only increased the number of casualties. A few well-placed machine guns, perhaps only one every couple of hundred yards,

could stop almost any infantry attack--at least any attack of the "line-em up and charge" variety.

Destroying some or all of the defending machine guns with firepower--infantry firepower or artillery firepower--was the only way to attack successfully. But it was easy to hide and protect machine guns, far easier than to hide and protect the number of attacking riflemen required to develop equivalent firepower. It was an easy matter to put the machine gun and crew in a hole in the ground, with just the barrel projecting over an earthen bank. It was not much harder to fashion a firing slit for the machine gun, with sandbags, some boards and earth, perhaps a few logs. Then it was not much more difficult to provide overhead cover for the gun and crew: a regular bunker, impervious to bullets (rifle and machine gun) and artillery splinters. Such an emplacement, constructed of quite ordinary materials, would require a direct hit from an artillery piece to destroy it (apart from fire coming in through a narrow firing aperture. From a distance, such a dug-in machinegun emplacement might be completely inconspicuous, with the firing aperture covered by a cloth or wooden cover and hidden in the bank of earth in front of a trench (the parapet). Sometimes the defense would dedicate a portion of its machine guns for defensive purposes, not firing them until the enemy's infantry was actually out in the open. Then the attacker could not even locate the defending machine gun positions until it was too late.

Constructing bunkers for machine guns made them essentially invulnerable to the infantry weapons (rifles and machine guns) of the defense. Then the machine guns became an artillery problem, since it required a direct hit from a shell of artillery caliber to destroy such an emplacement. But it took some time for the artillery to develop the techniques to do this.

There were three ways to fire an artillery piece: direct fire, indirect fire, and predicted fire. Firing directly meant that the gunner could see the target through the gunsights. Such fire was extremely effective. (With perhaps one or two ranging shots, a field gun could place a shell within a few feet of the aiming point at visual distances.) A field gun firing direct could destroy a (located) machinegun emplacement simply by quickly putting a few shells into it.

The problem was that, in World War I, the second method of firing artillery, indirect fire, put direct fire out of business as a normal mode of using artillery.³ Indirect fire meant that the gunners could not see their targets. They fired the guns in a calculated direction at a calculated angle. An observer, who could see the target, observed the fall of shot and relayed corrections back to the firing battery. Eventually the guns would start to hit the target: but it would take longer to do so and the shooting was not as accurate (hence destructive) as with direct

fire. This was mostly because the gun was farther away from the target, behind a hill probably.

Indirect artillery fire had one overwhelming advantage: it was much less vulnerable to the enemy's counterbattery fire. In fact, artillery firing indirectly could silence artillery firing directly. During the Russo-Japanese War, at the battle of Sha-ho on September 1, 1904, the Japanese had deployed their artillery out of sight behind hills, linked by field telephone to observers who could see the front. The Russians deployed their guns in the old fashion, in plain sight. The result was clear cut. The Japanese destroyed the Russian guns at slight cost to themselves. Then, not only did the Russian infantry have to fight without artillery support while the Japanese fought with it, the Japanese went on to destroy the Russian machine guns.⁴ The lesson was there for all to see who would: in the next war artillery would fire indirectly as a rule and directly only as an exception.

All the major European artillery arms did prepare to use indirect fire in the next war, with varying degrees of thoroughness and success. The French, whose tactical doctrine depended heavily on a storm of fire from their justly-famous seventy-five millimeter guns to keep the defender's heads down, stuck to open or only semi-concealed positions to preserve the seventy-five's tremendous fire effect.⁵ In accordance with their national stereotype, the Germans paid greater attention to the

whole complicated paraphernalia of indirect shooting: maps, gun-sights, observation post equipment, communications, coordination of artillery units (indirect shooting made it easier to mass fires, a definite bonus for the technique). Then again, the Germans had opted for a goodly proportion of heavy howitzers in their artillery forces. They had done this partly because they wanted to get through the French and Belgian border fortifications quickly, partly because they had observed the success of howitzers in Manchuria. The howitzer by its very nature is largely an indirect fire weapon, because it always fires its shell along a highly-angled trajectory.⁶ Besides prompting the Germans to take indirect fire shooting more seriously than they otherwise might have, the howitzers gave the Germans important advantages in the First World War, particularly early in the war, before the other powers had time to manufacture a like quota of heavy howitzers.

Even though indirect fire allowed artillery to survive on the battlefield, it had its problems and limitations. First, the forward observer at least had to be able to see the target. The forward observer could direct fire unto any target visible from within friendly lines, but that was all. Anything the enemy had deployed behind a hill or ridgeline the forward observer could not see, hence could not target. But the enemy could easily adopt a "reverse slope" defense (ie., site the main defensive line behind a hill or ridge). This became a popular German tactic as the war

went on, with the precise aim of escaping effective Allied artillery bombardment. Beyond the problem of reverse slope defenses was the problem of defense in depth. Early on, all the combatants began to defend not just one line of trenches, but two or even three. In general this compounded the attacker's problems, because it meant it was no longer enough to break one defensive line, it became necessary to break two or three. It was correspondingly easy for the defender to seal off partial penetrations of the defensive system. Defense in depth almost ensured that part of the defensive system would be out of sight of the attacker's forward observers, hence relatively invulnerable to indirect artillery fire. Naturally, no one had thought much about defense in depth before the war, or what it might mean for artillery.⁷

Theoretically, of course, one might observe the enemy positions from an airplane. An observer might call an artillery battery from the airplane, observe ranging shots from the airplane, and correct the fire unto the target. But the equipment (particularly aerial radios) and techniques to do this did not exist in 1914, and had to be developed during the course of the war. Even once such techniques existed, aerial observation proved to be more important for predicted fire, not indirect fire.⁸ It was much easier to identify targets from an aerial photograph than for an aerial observer to pick them out by eye, hanging over the

side of an aircraft in very dangerous airspace. There were other problems with indirect artillery fire. Of course, the artillery had to be able to hit the targets identified from aerial photographs, a problem discussed below.

There were practical problems with aerial reconnaissance. A ground based artillery could set up on a hill and watch the enemy front all day every day. For aerial reconnaissance you needed a plane in the sky. It would have been difficult to keep a plane in the air over all the enemy positions one might want to survey under any circumstances. Weather was a problem. One might not have aerial superiority. Even if one did, enemy fighters made loitering over enemy lines a dangerous proposition for vulnerable observation planes. Throughout the war, ground-based artillery observation proved much more useful than aerial observation, and whole battles (much of the fighting in Flanders, for instance) turned on the control of hills offering good artillery observation.

There had to be a communications link between the forward observer and the firing battery: therefore indirect artillery fire was no better than the communications link between the forward observer and the firing battery. Field telephones worked well for this purpose, but hostile artillery fire easily cut telephone wires. European armies recognized communications as a weak link in indirect artillery fire, as early as the war in Manchuria.

Without telephone wires, one had to rely on visual signalling methods, vulnerable to disruption from smoke and mist.⁹ In 1914 radio was far too bulky and clumsy to even consider for directing indirect artillery fire. This situation changed as the war went on, due to dramatic improvements in radio reliability, power, and portability.¹⁰

The biggest problem with indirect fire arose when the problem was not to lay down fire from a single battery on a given target, but to coordinate the fire of hundreds or even thousands of guns in a full-scale offensive. To fire indirectly it was necessary to "register" the guns on the target. A battery in a given position, seeking to hit a given target, had to fire ranging shots in the general direction of the target, then adjust fire until the shells were on target. Then it knew what angles to set its gunsights at to hit the target whenever it wanted (provided the wind did not change matters too much). Going through this process for hundreds of guns registering on hundreds of targets might take a long time, perhaps several days. And the enemy knew what was going on when all along the front, ranging shells walked towards defensive positions, finally landed in them, then fire ceased.

In other words, registering guns in this manner provided the defender with substantial warning of an attack. In fact, it entirely conceded the element of strategic surprise ("operational surprise" would be a better term in this case) to the defense.

One of the few advantages an attacker has is the ability to mass troops for an offensive, to secure a favorable force ratio over the defender. Of course, if the defense knows an attack is coming at a certain point, it can mass troops in the threatened sector. Normally this "battle of concentration" is a matter of good intelligence and guesswork. Registration of fire (together with the buildup of vast numbers of guns and stocks of ammunition prior to a long bombardment) conceded the battle of concentration to the defense. Extensive registration of artillery fire along a defensive front was a signal to the defending command to get the trains full of reserves rolling toward the threatened front.

In 1914 and particularly in 1915 the Allies had some bad experiences attempting to launch offensives against the Germans on French territory. There was not enough artillery, particularly not enough heavy artillery. The field artillery which formed the bulk of the artillery equipment was not effective against field fortifications, and there was not enough ammunition for the artillery there was. The artillery preparations did not sufficiently destroy the defensive system: barbed wire, trenches, machine guns, and so on. The result was slaughter when the attacking infantry went forward. The solution to the tactical impasse seemed simple: more and heavier artillery.

When the Allies had more heavy artillery and more shell available to them, as a result of industrial mobilization, they

resolved to use it to destroy the enemy defensive system entirely. Never again would Allied infantry have to walk forward into machinegun fire. The artillery would fire as long as necessary, would fire as many shells as necessary to completely destroy the defense. The attacking infantry would deal with any surviving opposition and round up the prisoners.

The problem with this system was that it just did not work. It was not possible to destroy so many of the defending machine guns that the infantry attack was a walk-through, no matter how many shells the artillery fired. We may take the Allied offensive on the Somme as the first battle where the Allies tried this approach, though it was certainly not the last. Even if the artillery could locate all the relevant targets (it couldn't), it could not necessarily hit them. For one thing, the artillery shooting at the Somme was not good. Being in a trench when shells were landing in and about the trench was unpleasant. But being in a trench when all the shells were landing 50-100 yards short or over was not very dangerous. The artillery shooting at the Somme was often off by at least that much, partly due to the inexperience of the gunners, partly due to insufficiently developed technique.¹¹

Furthermore, it just was not in the nature of artillery to hit every target. Artillery fire at a fairly long range falls in a pattern, an ellipse with the long axis pointing back towards

the gun. (There are more factors throwing off the range of the gun than those throwing off the bearing, hence the ellipse.) Therefore artillery is an area weapon. Fired against a concentration of troops and weapons, it will kill many of the former and destroy many of the latter. But not every last one. Against a real point target, such as a dug-in machine gun, the best the artillerist can do is center the elliptical area where the shells will hit (the "beaten zone") on the target. If only a direct hit will destroy the target (as opposed to shell fragments), getting such a direct hit is a matter of time and probability. It may require the expenditure of 50-100 shells. But in a really large artillery bombardment, the artillery would never locate some targets and hence never shoot at them. Some targets the artillery shot at it would not hit (ie., place the elliptical beaten zone on the target). Presumably some targets over which the artillery placed a beaten zone would escape destruction.

The solution to the problem of fighting through a defensive zone had four parts. First, armies had to change their conception of what they expected a preliminary bombardment to do. They had to stop expecting the artillery bombardment to destroy the defensive system--which was impossible--and settle for an artillery bombardment which neutralized the defensive system--which was possible. Destruction meant physically destroying the

machineguns, their firing positions, and all the gun crews. This was hard to do when the Germans sheltered both the machineguns and their crew in deep dugouts during the bombardment. After the fire lifted they would rush out and set up the machineguns. (As they did at the Somme and afterwards.)¹² Neutralization meant that it was enough if the machinegun could not fire before the attacking infantry overran the gun, its position, and crew. To continue the Somme example, neutralizing the defensive system rather than destroying it might mean that the artillery would lift its fire just before the attacking infantry arrived on the defensive position. Then attacking infantry could either kill or capture the German machine gunners in their dugouts or shoot them down as they set up their guns.

Neutralization implied the second part of the solution of the problem: better coordination of the artillery and the infantry.¹³ This coordination was hard to achieve. The infantry had to actually be in place, waiting to rush the enemy defenses just as the artillery fire lifted. Confusion, mud, obstacles and enemy fire might prevent that. For neutralization to work, the artillery had to fire close to its own infantry without hitting it. There could be no good communications between the infantry and the artillery, as artillery fire (always plentiful on a First World War battlefield) quickly cut telephone wires. The infantry and the artillery had to do everything by timetable.

But what if something unexpected held the infantry advance up, as might happen on a battlefield? After all, it was not just a matter of taking the first trench line. The infantry had to fight its way through a defensive position in depth. With the artillery support moving through the defensive zone on a timetable, the following infantry could easily fall behind if the defenses held them up longer than calculated at a given point. Then, almost unavoidably, the infantry would "lose the barrage," in the parlance of the times, and with it most of its capacity to advance. How much easier to have the artillery completely destroy the defenses, then have the infantry walk in and occupy them!

A third part of the solution was an increase in the capacity of the infantry to fight its way through the defenses using its own firepower. Although knocking out machineguns was an inherently difficult task, tactical improvements over the 1914 infantry state of the art were possible. For one thing walking forward into machinegun fire was not the best way to advance. In almost any piece of ground there were areas of "dead ground," which is to say areas which enemy machine gun bullets could not reach, because of their flat trajectories. A little dip in the earth, a foot or so, an undulation of the ground, were enough if the soldiers lay flat. Small groups of men (though not a battalion, or even a company) might rush from cover to cover. A squad might work forward along a ditch, or an abandoned trench.

Though not a panacea, since it was almost always necessary to cross some of the ground under fire, such methods could hold down losses in the advance.

On the other hand, advances in small groups increased the infantry's command and control problems. From the time the first band of cavemen advanced against other cavemen throwing spears, infantry had advanced erect in lines or columns through the zone of enemy fire, accepting losses as the cost of moving forward. If someone in an advancing line wavered or turned to run away, every one would see it and know it, particularly the officers and sergeants--who usually followed the main line with weapons in their hands to kill anyone who turned to flee. A line which "went to ground" in the face of superior firepower tended to dissolve into a collection of terrified individuals and was almost impossible to get moving toward the enemy again. For the infantry to deliberately advance not in lines but in small groups, deliberately going to ground whenever possible, yet moving forward, placed unprecedented demands on individual courage and initiative. To get troops to move forward in this fashion also required small unit leadership of an unprecedented caliber.

The infantry also acquired greater firepower, and firepower which was more useful against defensive machineguns. The infantry started the war armed almost exclusively with bolt-action rifles, but over time it acquired grenades, mortars, and light machine

guns, all useful against defending machine guns. With these weapons the infantry had a greater ability to destroy defending machineguns directly, or at least to suppress their fire while it worked within range to destroy them with close-range weapons. Obviously, the more machine guns the infantry could destroy on their own, the fewer the artillery had to destroy. Advancing against an defensive system not thoroughly damaged by artillery fire was still suicidal, but increased infantry fighting power brought the destruction required of the artillery within the realm of the possible.

Once armies started trying, and they all started trying after trench deadlock began on the Western Front in autumn 1914, there were many things they could do to increase the attacking power of infantry against modern weapons. The machinegun contributed to trench stalemate not just because it increased firepower, but because it increased defensive firepower more than it increased offensive firepower, particularly with the equipment and techniques available early in the war. The countermeasures to defensive machinegun fire took longer to develop.

For example it was possible to use machineguns to support one's own infantry attack, rather than just to repel enemy attacks. In all their attacks prior to the capture of Vimy Ridge in the spring of 1917, the British did not really support their attacks with friendly machinegun fire. Prior to Vimy, the only

role assigned the machine guns was to walk alongside the attacking infantry, lugging their guns and ammunition across No Man's Land. Upon reaching the objective, the machine guns were to set up in the captured positions and help defend them against the expected counterattack. Those that survived did so and were useful, but the infantry rarely reached its objectives in any numbers. The machine gunners mostly died in the attack along with the infantry, without firing a shot. They did nothing to help the infantry get forward, which was the main problem, after all.¹⁴

At Vimy the Canadians pioneered a new technique of using the heavy machine guns to support the attack. They fired at German positions over the heads of the attacking infantry, the natural ballistic arc of the bullets eventually bringing the fire down on the target. This fire was effective in suppressing the German fire, keeping their heads down as the Canadians moved forward. The British used the technique in the Battle for Messines Ridge, in June 1917,¹⁵ and thereafter it was available for any army to use which could master the technique involved. The Germans adopted the technique in the fall of 1917.¹⁶

It took almost three years of war before the British figured out how to use heavy machine guns to support the attack. (It took about that long for light machine guns (which could accompany the assault troops and help shoot them into their objective) to appear in large numbers on the Western Front.) On the one hand this

might appear to the reader to be an overly slow process. But then again the British army first acquired large numbers of machineguns after the outbreak of the war. It had to train the machinegunners in basic machinegun techniques, before the army could use the machineguns even for defensive purposes. Most of the machinegunners were straight from civil life. The army as a whole was in the throes of expansion, and meanwhile suffering heavy casualties. One might also point out that the British army had already tried one solution to the problem of the tactical offensive, massive artillery fire, as at the Somme. After this failed there was more interest in increasing the fighting power of the infantry.

Many civilian organizations take at least three years to introduce basic changes, so perhaps it is not surprising the armies of the First World War took as long as they did. All the major infantries of the First World War increased their ability to fight their way through a defensive position arranged in depth. It was a matter of improved technique, of which the use of heavy machine guns to support the assault is but one example. The Germans were ahead in this area of improved infantry technique, but only by a matter of degrees.¹⁷ The British were not all that far behind, as the account in Bidwell and Graham's Firepower makes clear.¹⁸

We are now in a position to add in the fourth element of the solution to the tactical problem of the breakthrough in the First World War: predicted artillery fire. Predicted fire meant being able to shoot at any located target without use of ranging fire. In and of itself, widespread use of predicted fire meant being able to dispense with a long period spent registering the attack artillery on its targets. That meant the attacker no longer conceded the advantage of surprise to the defender. But of course this would do little good if the "predicted" bombardment was as long as the old registered bombardments had been. The defense would still have too much warning. The predicted bombardment would have to be short and aim at the neutralization of the enemy position, not its utter destruction. Neutralization put a premium on cooperation with the infantry, as well as placing heavier demands on the ability of the infantry to fight its way through the enemy defensive position.

Although the British had used predicted fire during the war in South Africa,¹⁹ its widespread use in World War I presented enormous difficulties. Suppose one located a target by means of aerial photography (a technique which itself took until summer of 1915 to develop)²⁰. That in itself was not enough, one still had to locate the target on a map. For that one needed an accurate large-scale map. These did not exist in 1914. The only maps available had a scale of 1/80,000 and were not very accurate.

Predicted fire required accurate maps of a scale 1/20,000. The only way to get these maps was to make them. Small wonder, therefore, that the BEF alone had a survey section of 400 officers and 6,000 other ranks by the end of the war.²¹ Then, once the firing battery accurately located *itself* on the map (a matter of survey work), it could obtain a distance and bearing to the target. It is worth pointing out that any error in the location of the target, the battery, or the indicated bearing and distance from the map would systematically throw off the shooting (remember, no one but the enemy would observe the fall of shells, and they were not likely to call in corrections) by a like amount.

But that was only the beginning. There are winds aloft, air pressure varies: these things materially affect the flight of shells. Therefore, one needed tables to correct for the effect of wind and humidity on the flight of artillery shells, and a weather report of the atmosphere over the battlefield. Then again, every gun tends to shoot just a little bit differently, enough to cause unregistered artillery fire to miss. Every barrel is different, and muzzle velocity (hence range) falls off with increasing barrel wear. Accordingly, every gun had to be fired periodically on a range, its performance minutely tabulated, and its idiosyncracies corrected for when firing from the map. Then again, powder burns at varying rates, depending on its temperature and moisture content. This affects the muzzle velocity, which affects the

range, which adds up to another factor to correct for through the use of complex tables. Field artillerymen were not in the habit of taking the temperature and moisture content of their powder in the middle of a bombardment, but they would have to learn.²²

Surely the reader will agree by now that predicted artillery fire is a technical subject. It was a technical problem requiring technical solutions: a matter for expert artillerymen and artillery staffs, technical commissions and the like: not a matter for generals and general staffs to solve. Once the tactical need for predicted artillery fire became apparent, the artillerymen solved the technical problems involved.²³ Probably for this reason, both the British and the Germans solved the technical problems associated with predicted fire at about the same time. By late 1917, both sides had at least imperfect predicted fire techniques. There was a transition period: the British had the correct techniques by the summer of 1917, but did not regard them as fully reliable. Thus predicted fire was not the governing principle in the massive bombardments preceding the 3rd Battle of Ypres. The British first relied exclusively on predicted fire at the Battle of Cambrai, where its use helped to secure surprise.²⁴

The difference between the British and the Germans was not in their adoption of predicted fire, or the rate they adopted predicted fire. The difference was that the British did a poor job of integrating their artillery fire plans with their infantry

attack plans, while the Germans did a good job. This was a serious matter, if the reader will recall the argument above that predicted fire had to aim at the neutralization of the enemy defensive system, rather than its utter destruction. This meant predicted fire placed a premium on infantry/artillery cooperation. The reason the British did poorly at infantry/artillery cooperation was that the British General Staff refused to listen to their artillerymen in drawing up attack plans, or to give artillerymen the power to implement their ideas.²⁵

The Germans did a much better job at infantry/artillery coordination, as the career of the celebrated German artilleryman Georg Bruchmuller shows. Bruchmuller was not primarily an innovator in the development of artillery technique. He did play a pivotal role in the application of techniques developed by others. During the First World War, Bruchmuller organized artillery support for a series of large-scale attacks. His basic technique was to keep the supporting bombardment as short as the artillery technique of the day would allow (while still thoroughly disrupting the defensive system). He also ensured a maximum of infantry/artillery cooperation. This is precisely what fighting through a World War I defensive system required, as argued above.

There were British artillerists men who could have done the same thing, indeed who did try to do so. The difference is that the German General Staff system allowed and encouraged

Bruchmueller to do what he did, whereas the British General Staff system did not allow British artilleryists to fill a similar role. The latter point is a theme of Bidwell and Graham's work Firepower. Bruchmueller's career, as depicted in his two memoirs and other sources, throws the matter into sharp relief.

The problem with the British was their system of command and the British General Staff. (By contrast, Bruchmueller had the backing of the German General Staff and used various features of the German command system (such as *Weisungfuehrung* and *Vollmacht*) to accomplish his work.) The problem began at the top. The British command had artillery advisors as good as any the Germans had, but seemed intent on using them as a species of servant.

Haig, a cavalryman, may not have understood artillery techniques but he had successive advisers, H. S. Horne, F. D. V. Wing, H. F. Mercer, John Headlam and Noel Birch, who were all good artillerymen. Surely he took their advice? The answer is that he told them what he wanted. In essence, this was to silence or suppress the fire of the German artillery, breach the ever-deepening belts of wire protecting the German trenches on the sector chosen for attack, and to suppress or silence the machine-gun and rifle fire threatening the assault troops. He did not allow even Noel Birch, who was with him from June 1916 until the end of the war, an equal part with himself and the General Staff in making his plans.²⁶

Haig thought he could form an infantry plan of attack in isolation from artillery considerations. The artillery specialists could then work up the details of how to support the attack he had planned out. But in fact, successful attack on the

Western front required coordination and interworking of infantry and artillery attack plans. It was not effective to draw the two up separately.

Unlike Sir John Monash who described a battle as an engineering matter, assembling materials on site, Haig never regarded battle as the application of techniques. Consequently he never shaped his plans to obtain the best results from his weapons; rather he expected his weapons to adapt to his plans, and simple though he made war seem when he quoted principles, he was often guilty of pursuing objects that were technically and logically incompatible. This was the opinion of the foremost of those with whom he had to deal in the great battles on the Western Front.²⁷

So there was a problem in the way the highest commander looked at the matter of infantry/artillery cooperation. That was bad enough, but Haig compounded matters by the way he regulated the rest of the chain of command. First of all "Haig insisted that the commander at each level was entirely responsible for making tactical plans within the framework of his own general scheme."²⁸ In and of itself this might seem like the German practice of *Weisungsfuehrung*. But as we shall see below, control of artillery was one area where the Germans disregarded a simplistic application of *Weisungsfuehrung*. When the requirement in artillery matters was centralized control, the Germans used centralized control.

British command practice also did not allow artillery commanders to give orders to other artillery commanders in artillery matters. (A practice which the Germans call *Dienstwege*

or, roughly "service channels.") They followed the normal chain of command, which is to say that army gave orders to corps, which gave orders to division. The division commander then gave orders to the division artillery commander. "In no circumstances could the artillery commander at Army headquarters issue orders to corps or divisional units. They were to take orders only from their respective corps or divisional artillery commanders."²⁹

The effect of Haig's approach to artillery matters, independence of action for subordinate commanders, and adherence to the normal chain of command for artillery matters was to effectively cut the artillerymen out of the decision making process. At the top, Haig at GHQ made his plans without reference to artillery considerations, expecting the artillery to perform certain tasks but never trying to shape his plans to exploit the potentialities of the artillery arm. Within Haig's general scheme, army, corps, and division commanders made their plans, which were likely to reflect the same approach to artillery matters as Haig's (since that was the approach of the British General Staff). Artillerymen took their orders from their unit commanders, so artillery advisers were not in a position to correct matters. In short, there was no one enforcing artillery "best practice" from the top.

Small wonder then, that at the battle of the Somme

...the wide variation in the artillery plans for the actual assault directly reflected the degree of

enlightenment of the several divisional commanders on these questions. Rawlinson [commander of British Fourth Army, the army which was to carry out the assault] did not enforce a uniform artillery plan and he allowed each corps and division to take a different tack over the crossing of No Man's Land. In short, there was widespread doubt about who was supposed to be master in the house.³⁰

There were British artillerymen who had the drive and personality to try and enforce best artillery practice. Take Major-General H. C. C. Uniacke, the adviser to the commander of British Fifth Army at the Third Battle of Ypres.

Uniacke, the Major-General, Royal Artillery to Gough in the Fifth Army, was a man who split no hairs about the nice paradigms of staff duties; he may not have been officially a commander, but he felt himself to be a General Officer Commanding Royal Artillery, and he expected to be obeyed because he knew what he was doing. Yet he was not consulted before Gough made his plan, let alone when Haig and GHQ evolved the outline that Gough received. Had he been given the option, he would not have fought a battle under such disadvantageous conditions.³¹

The disadvantageous conditions referred to were these. Because Haig chose to fight the battle in the Ypres salient, Uniacke had to deploy his guns strung out in a line, on ground overlooked by German groundbased observation. The German guns were in a compact position behind a ridge. As a result it took 2,868 British guns 43 days and heavy casualties just to suppress the 1556 German artillery pieces. The total British artillery bombardment prior to Ypres totaled 7 weeks. The British had already developed the techniques to do a shorter predicted

bombardment. But at Ypres the German observers overlooked the British attack assembly areas and battery positions, so it was imperative to completely silence the enemy guns. By his choice of the battlefield, Haig had dictated the artillery technique the British would have to use, which were a reversion to the days of the Somme. Uniacke was never in a position to change matters.³²

The difference between the British General Staff's approach to its leading artillerymen and the German General Staff's approach to an artilleryman like Bruchmueller's reflects differences in the approach of the two general staffs. The German General Staff, long before the war ever began, made extensive use of staff experts who were not general staff officers. In fact, the German General Staff's ideal was to have non-general staff officers do all the work of the staff which was not specifically connected with operations. It was enough if the general staff officers handled all matters concerning operations. Thus, general staff officers actually sought out an able artillery expert like Bruchmueller and were willing to work his advice into planning, if it meant a greater probability of success for forthcoming operations.

Something like an inferiority complex seems to have afflicted the British General Staff in these matters. Take as an example the matter of the officers who examined aerial photographs at corps level. This officer was originally an artilleryman, and the

work regarded as an artillery specialty connected with counter-battery fire. Gradually it became apparent that this work of constantly reviewing aerial photographs could also detect a buildup in the enemy's rear areas, which might well precede an enemy offensive. Therefore, what had begun as an attempt to locate the enemy's batteries began to acquire importance for general intelligence.

At first, the General Staff was unwilling to allow this new technique to be honoured with General Staff status. Then, when it realised that it had applications wider than counter-battery, GHQ imposed an Intelligence Corps officer on the Royal Artillery. However, this did not prove to be satisfactory since he was not a trained artillery officer.³³

The British General Staff system had been largely the creation of Haig and Launcelot Kiggell in the period from 1906-1911. That creation shortly before the outbreak of the war suggests an organization that must have been less secure in organizational terms than the German General Staff, with its vast prestige. Haig became Commander-in-Chief of the British Expeditionary Force, with Kiggell as his chief of general staff. As Bidwell and Graham put it "it was inevitable that the organization they had both created would cast a long shadow."³⁴

The long struggle with the General Staff to ensure that the artillery was consulted before a plan was made, that all the artillery in a battle was controlled, initially, by a single commander who had the right to

issue orders down the artillery chain of command, and that there should be an adequate establishment of artillery General Staff officers, is recorded in the papers of several senior artillery officers. ... matters improve but the battle with the General Staff was never won.³⁵

The advantage the German artillery had in World War I was that it never had to fight a battle with the German General Staff, but rather had the latter's support in promoting best artillery practice, including the integration of infantry/artillery plans.

THE ARTILLERY CAREER OF GEORG BRUCHMUELLER

The man who supervised the artillery preparations for a goodly fraction of the German offensives in the second half of World War I began the war as an obscure lieutenant-colonel in the *Landwehr*--the German 2nd line reserve forces, called back from retirement for the war. Only in 1918 did the army see fit to promote him to Colonel.³⁶ The promotion was to "brevet" Colonel (*Oberst mit Patent*). Bruchmuller was also not on the active duty list throughout the war. His transfer to the active-duty list was supposed to take place after the war, but never actually took place due to the revolution in Germany. Bruchmueller retired from the army ten months before the outbreak of the war, the result, as he puts it, of a nervous breakdown after a fall from a horse. At the time of his separation from active service in 1913, Bruchmueller received letters of commendation from the Inspector-General of the Foot Artillery, General von Lauter, and the

Commander of the Foot Artillery Firing School, General von Ziethen. He described these letters, which in fact came from two of the most important German artillerymen of the day, as a great satisfaction to him.

Despite his low rank throughout the war, Bruchmueller was probably the premier German artilleryman of the war. He was originally a Foot (heavy, as opposed to field) artilleryman, coming therefore from that half of the German artillery most proficient in the new technicalities of indirect (not yet predicted) fire. In addition, in 1912-1913, just before his separation from active service, Bruchmueller had served as an instructor at the Foot Artillery Firing School (*Schiessschule*).³⁷ Doubtless he possessed a good grounding in the technical aspects of his trade.

Bruchmueller's first post on mobilization was not very exciting. He became commander of the 2nd Guard Landwehr Battalion and Foot Artillery staff officer of the fortress at Culm-- commander of a battalion of fortress artillery, doubling as a staff officer, in other words. In November 1914 he became the artillery commander of the newly-raised 86th Infantry Division. In 1915 he was also given command of the 86th Field Artillery Regiment. Presumably this was an 86th Infantry Division field artillery regiment, an instance of "double hatting" (having one officer, in this case Bruchmueller, command two units.)³⁸ So far

Bruchmueller was just one of many German divisional artillery commanders.

Divisional artillery commanders were, as Bruchmueller puts it, a "leader of troops with the power of command."³⁹ The divisional commander gave orders to the divisional artillery, who in turn commanded the artillery of the division. Units larger than divisions did not have permanent artillery components, rather higher command attached batteries and "detachments" [*Abteilungen*, usually four batteries] of heavy [Foot] artillery.⁴⁰ The attached artillery units had their own troop commanders and took orders directly from the corps, army, or army group headquarters. Therefore these higher level formations maintained an artillery advisor [*artilleristische Berater*] to advise the corps headquarters on the best employment of these attached heavy artillery units. The artillery adviser did not have any power of command, orders to the attached artillery units coming from the corps, army, or army group headquarters. The artillery advisers at corps, army, and army group were known as "staff officers of artillery."

In addition, armies involved in critical battles might have as their artillery advisers "Generals of Artillery," who might in fact range in rank from lieutenant-colonel to lieutenant-general. The designation General of Artillery really designated an artillery adviser and an attached artillery staff. The generals

of artillery were therefore really special artillery headquarters, available for assignment to armies facing unusually large or difficult artillery tasks.⁴¹

The "staff officers of artillery" fitted into the structure of officers and officials who did the bulk of the work on a higher headquarters staff, under the supervision of a General Staff officer. It was an office subject to all the limitations, frustrations, and potentialities of the adviser's role.

Bruchmueller says some revealing things about the position:

The peculiar position of an "artillery adviser" required an complete personality. One could make a great deal out of this position, in it one could create for oneself great influence, indeed an influence, which was of decisive importance for the course of an engagement. Concern over the holding of the position, which all too easily came into question, in cases when the adviser and the chief of the [unit] General Staff concerned had differing points of view concerning artillery matters, clinging to old methods, shyness in pushing one's own self forward, and yet other reasons were however the cause, that the "artillery adviser" did not everywhere exert the influence, which was absolutely justified and which absolutely should have been exerted by him. Happily, however, these cases constituted only exceptions. With the majority of the "artillery advisers", the artillery found itself in thoroughly trustworthy hands.⁴²

It is noteworthy that Bruchmueller underlines the importance of good relations between the artillery adviser and the chief of staff of the higher command to which the artillery adviser was attached. He says nothing about maintaining good relations with the commander of the unit. All this was as it should have been.

In the German system, everyone on the headquarters staff worked for the chief of staff, not the commander.

Although as artillery commander of the 86th Infantry Division, Bruchmueller participated in at least three significant battles on the Eastern Front in 1915, he owed his rise to prominence to the Battle of Lake Narotsch (also on the Eastern Front), March 18 to April 30, 1916.⁴³ Prior to that battle, in all the battles in which Bruchmueller had taken part as artillery commander of the 86th division, there had been no coordination of fires beyond the level of the division. At the Battle of Lake Narotsch, such a coordination of fires took place, at Bruchmueller's suggestion. The artillery adviser to Tenth Army [not Bruchmueller] had simply planned to allow the artillery of each attacking division to make its own fire plan. Here is the account of Colonel Hell, Chief of Staff of Tenth Army, on whose authority (with the customary approval of Tenth Army's commander) the change took place. (Note: the statements within parentheses in the following quote are Bruchmueller's, the statements within brackets are the author's.)

... Lieutenant-Colonel Bruchmueller (artillery commander of the 86th Infantry Division) considered a strict concentration of fire necessary, in contrast to this, and submitted this view to the artillery commander [artillery adviser] in writing. The latter sent to me as the General Staff Chief of the Tenth Army this proposal. It contained concentration of fire, box barrages, and rolling barrages, and was approved by the army command. The proposal proved itself in its carrying-out so brilliantly, that I,

when I was named [General Staff] Chief of the Army Group von Linsingen in the summer of 1916, requested Lieutenant-Colonel Bruchmueller for the artillery preparation of a number of attacks, through which points of penetration in the Austrian Front had to be overrun again. Also in these cases the Bruchmueller process proved itself brilliantly.⁴⁴

In other words, the Tenth Army artillery adviser had apparently simply divided up the army's attached artillery assets among the divisions and determined to let each division use them and its organic artillery however it saw fit. Bruchmueller, who was only the divisional artillery commander of one of the divisions attacking at Lake Narotsch, sent a suggestion to the Tenth army artillery adviser, to the effect that there ought to be a unified fire plan, employing all the army's artillery assets. The army artillery adviser sent this written proposal (which specified concentration of fire, and use of box and rolling barrages) on to Colonel Hell, Tenth Army Chief of Staff, who approved of it and secured the approval of Tenth Army's commander. Tenth Army implemented Bruchmueller's proposal with great success. When Hell went on to become Army Group von Linsingen's Chief of Staff, he used Bruchmueller to make similar preparations for other attacks.

It is not clear, and not necessarily important, whether Bruchmueller himself drew up the unified fire plan at Lake Narotsch--remember that he was still only the artillery commander, 86th Infantry Division. It may be that Bruchmueller's original

written suggestion was detailed enough to serve as the fire plan, or the basis for one. Perhaps the artillery adviser of Tenth Army sat down and drew up a unified fire plan, perhaps with Bruchmueller's help. Perhaps Bruchmueller did it himself, as he certainly did on the later attacks he planned. The important thing is that there was a unified fire plan.

This was actually a revolutionary development in the history of artillery. One of the less immediately apparent features of indirect artillery fire was that it made it easier to concentrate the fire of a large number of guns.⁴⁵ Concentration of fire became simply a matter of giving the guns the same coordinates to shoot at. Before the introduction of indirect fire, it was necessary to mass the guns themselves in order to mass fire--hence the recurring descriptions of guns massed wheel to wheel in military history.

At Lake Narotsch, in the spring of 1916, the Germans, or rather Tenth Army, solved the artillery coordination problems which the British never fully solved in the course of the whole war. All the artillery of Tenth Army fired a single fire plan which exploited the best available artillery techniques to help the infantry get forward. There were no problems of coordination between the practices of the different sub-units making the attacks, no problems of getting the ideas of the the most expert available artillerist carried out.

The difference seems to have been a general staff which cooperated with the artillerymen in ensuring use of best artillery practice--or rather a general staff officer, Colonel Hell, who did so. There is no evidence that Tenth Army's rather ad hoc procedure for organizing the artillery preparation at Lake Narotsch in the spring of 1916 required the approval of anyone outside of Tenth Army--nor, under the German system of command, should it have. Bruchmueller made his suggestion and Colonel Hell had the authority to see it carried out. Of course the unique position of a chief of staff in the German army helped here. The artillery adviser, as a member of Tenth Army's staff, was but a helpmate to Hell, who oversaw the whole process of command in Tenth Army. If Hell could be made to see a better way to do things, Hell could order those better things done, subject to the approval of his commander.

Flexibility as well as authority probably played a part in this process. In his daily work, Hell dealt constantly with general directives that allowed a subordinate maximum latitude to get things done. Perhaps as a result it didn't matter to him that the suggestion for an improved artillery plan came from a mere divisional artillery commander. If an idea looked like it would improve the prospects of success in the upcoming attack, it was a good idea, to be acted upon.

Hell took the "Bruchmueller process"--and Bruchmueller--with him when he went on to become Chief of Staff of Army Group von Linsingen. Bruchmueller and his artillery process found employment on the whole of the Eastern Front by 1917, as a letter to Bruchmueller from General Max Hoffman, Chief of Staff to the eastern command (*Oberkommando-Ost*), testifies. After German victory in the east, Bruchmueller migrated to the Western Front, where the techniques developed in the East were the basis of the artillery preparations that preceded the German 1918 offensives. In the period between the autumn of 1914 and the spring of 1918, the Germans undertook very few offensives in the West, with the exception of Verdun. Bruchmueller's experience directing attacks in the East, where the Germans had been on the strategic offensive, was of great value when the Germans resumed the strategic offensive in the West.⁴⁶

Thus Bruchmueller's technique, and more importantly, his basic idea of a unified fire plan drawn up by an artillery expert, spread from its beginnings at Lake Narotsch. It began with Tenth Army in that specific battle, spread to battles under Colonel Hell's jurisdiction, from there to the whole of the Eastern Front, from there to the main operations of the German army in 1918. In almost entrepreneurial fashion, high-ranking general staff officers and commanders, starting with Hell, gave Bruchmueller the authority he needed to implement his artillery process: because it

worked. This was the pattern for some of the more important German doctrinal innovations of the war: local commanders tried out the new ideas on their own authority first. By the time the innovation became a matter of official policy, it was already in general use and thoroughly field tested. The change in defensive doctrine pioneered by Colonel von Lossberg, the subject of a subsequent chapter, is another prominent example.

Why did not the British, faced with the same problem, come up with a similar solution to the problems of artillery coordination as the Germans? If the account in Bidwell and Graham provide any clues, differences in the functioning of the British and German general staff provide the clues. For one thing, in the British system the chief of staff of a unit was a subordinate of the unit commander, not a colleague of sorts. Therefore, we can rule out a British chief of staff sponsoring an able artilleryman in the way Hell sponsored Bruchmueller. Further, when British artillerymen attempted to exert control beyond units under their command

The [British] General Staff, quoting the Staff Manual, insisted that orders could only be issued through Army, Corps, or Divisional Commanders. An artillery officer could only issue orders to the units that were directly under his command. ... the Staff system protected the autonomy of each level of command, consigned the senior artillery officer there to be an adviser rather than an executive and permitted a great deal of variation in the artillery methods that were used at each level.⁴⁷

The commander-in-chief of the BEF himself, General Haig, set the example for the rest of the British General Staff:

... [Haig] insisted that the commander at each level was entirely responsible for making tactical plans within the framework of his own general scheme. In no circumstances could the artillery commander at Army headquarters issue orders to corps or divisional units. They were to take orders only from their respective corps or divisional artillery commanders. Commonality of method was consequently difficult to achieve.⁴⁸

One wonders if Haig and the British General Staff (which Haig played a large part in establishing), were not self-consciously imitating the German principle of *Weisungfuehrung*. Colonel Hell, on the other hand, seems to have taken the attitude that all the artillery of Tenth Army was ultimately under his control anyway. The artillery adviser and the divisional artillery commanders were instruments of his will, not autonomous units with rights of their own. If the lieutenant-colonel commanding one of the attacking divisions artillery had the bright idea of combining the fire of several attacking division into one unified plan for the first time in history, Hell would see that it was done.

The German army was famed for allowing subordinate commanders maximum latitude in carrying out their missions, and justly so. But in cases where more centralized control provided a better solution to the problem at hand, the German General Staff at least was always ready to exercise centralized control. Flexibility was

the keynote of the German command system, not rigid adherence to principles of autonomy for subordinates.

The real problem the British had was not that their command relationships were written in stone--surely they could have revised command relationships in the artillery without provoking a constitutional crisis--but that Haig and the General Staff did not realize they had a problem with the coordination of artillery fires. (Actually, the problem was even worse: the high command thought it already had a solution to all its artillery problems: greater and greater masses of artillery. As ever, the perception that a solution to the problem had already been found tended to dampen further thought on the subject).

Of course the Germans in 1916 did not realize they had a problem with artillery coordination, either. No one had ever combined the artillery fires of several divisions until Bruchmuller did it in March 1916. An order did not come down from the OHL or Oberkommando-Ost to the effect that: "In the future, in offensives involving more than one division, all available artillery will combine its fire according to a single overall plan." Bruchmuller and Hell simply went ahead and did so, and because it worked so well, larger and larger fractions of the German army adopted the procedure. When British artillerymen attempted to do the same thing, as for instance Major-General Budworth, Major-General Royal Artillery to Rawlinson's Fourth

Army, attempted to do at the Battle of the Somme, the British General Staff enforced the sanctity of the chain of command.⁴⁹

THE BRUCHMUELLER PROCESS: BRUCHMUELLER THE ARTILLERY SPECIALIST

Georg Bruchmuller became in the course of World War I a specialist in the preparation and organization of artillery bombardments designed to enable large-scale infantry offensives to succeed. Along with Bruchmuller's central contribution to German artillery practice in the First World War--the idea that there should be a central plan for the artillery of all the units participating in the attack--Bruchmuller was the master of a great deal of detail concerning artillery preparations for the offensive. This mastery was necessary, if the overall plan Bruchmuller drew up was actually to work. Furthermore, through his detailed plan, Bruchmuller could ensure that all the artillery involved in the attack followed best artillery practice--something which the leading British artillerymen could never entirely accomplish. A certain amount of variation even among competent artillerymen, left to themselves, was inevitable. Bruchmuller also felt that not all German artillerymen of the First World War were fully competent.⁵⁰

An instance of the importance of detail: it was necessary for Bruchmuller to survey himself the approach roads into the artillery areas. If they were of poor quality, they could not handle the traffic which poured into an offensive sector just

before a major attack--masses of heavy guns and the ammunition for them. If the roads were not up to the load, engineers would have to build them up. Bruchmueller had to advise a delay in the attack on Duenaburg, in autumn 1917, for this reason.⁵¹

The outline of the process Bruchmueller used to prepare an attack went something like this: first, it was necessary to locate, mostly through aerial photography, all significant enemy installations in the defensive system. The German artillery had to bombard most of these with enough shells to destroy or neutralize them. How many shells were necessary was mostly a matter of experience. The number of shell required to achieve neutralization or destruction also varied with the size of the gun. Guns of larger caliber were more destructive per shell delivered than guns of smaller caliber, but the smaller caliber guns could make up for that by simply firing more shells. Some guns were better for certain targets than others.⁵²

From the number of targets and the number of shells of various types needed, Bruchmueller could calculate the amount of ammunition needed.⁵³ The ammunition had to be gathered before the battle, in dumps near the battery positions. These dumps had to be invisible to enemy aerial observation. In The German Artillery in the Breakthrough Battles of the World War, Bruchmueller devotes thirteen pages to the need to maintain secrecy, and the measures required to achieve it.⁵⁴

The artillery preparation of a given defensive system according to Bruchmueller's methods required a certain minimum number of batteries. It was never possible to fire at all enemy targets simultaneously, but a certain minimum number of targets would all require fire at the same time--all the forward infantry positions in the breakthrough sector, for instance. Then again, while a small number of guns might attempt to prepare an attack by firing for a longer time, that would only give the defender more warning of the impending attack. According to Bruchmueller, Ludendorff always made sure that the number of guns required for an offensive were actually on hand, even if it meant hauling guns all the way from the Eastern Front to the Western Front, or vice-versa.⁵⁵

In its fully developed form, a Bruchmueller bombardment had three phases. The first phase was the sudden opening of fire on all parts of the enemy defensive system: infantry positions, artillery batteries, mortar positions, command posts, telephone exchanges, camps and staff quarters. The intent was primarily to shock and demoralize the enemy, as well as causing some destruction. In the second phase, most of the German artillery shifted to concentrate on the enemy artillery. Long range guns continued to shoot at camps, villages, and staff quarters in the rear. Generally the German artillery left the foremost infantry positions alone during this phase, although some guns might

bombard infantry positions toward the rear of the defensive system, in order to disrupt the movement of possible enemy reinforcements. The third phase involved a systematic bombardment of the forward infantry positions just prior to the assault, while keeping the enemy artillery and rear installations under fire.⁵⁶

BRUCHMUELLER CHANGES COMMAND ARRANGEMENTS FOR THE ARTILLERY

As mentioned above, before Bruchmueller's involvement in the artillery preparation at Lake Narotsch, it was customary for the attack divisions to handle all of the artillery preparations individually. In the attacks he managed, Bruchmueller introduced a more functional division of labor which cut across unit lines somewhat. The attack divisions still controlled the artillery assigned to bombard the infantry positions (*Ika: Infanteriebekaempfungsguppe*). But the corps headquarters controlled the artillery assigned to combat the enemy artillery (*Aka: Artilleriebekaempfungsguppe*) and artillery firing at rear installations (*Fernkampfgruppe*). Finally, the army headquarters (if the attack was large enough to involve an entire army, otherwise some smaller headquarters) controlled a group of very heavy artillery firing at the most distant targets (*Schwefla: Schwersteflachfeuergruppe*).⁵⁷

Sensible as it might seem, this division of labor contradicted the pre-war German doctrine, which stated that the artillery of an attack division should have undivided control of

the artillery preparations for its own attack sector. This principle apparently found expression in the German regulations for artillery.⁵⁸ Bruchmuller's procedure took away from the attack divisions any influence on the suppression of the enemy artillery in their attack sector. Suppressing the enemy artillery was a matter of the greatest importance. Troops moving in the open--and attacking troops had to move in the open--were extremely vulnerable to artillery fire. As a last resort, any surviving defending artillery could fire a standing barrage in front of the defensive positions. Such a standing barrage, if intense enough, would stop any assault.

While certainly the principle that an attack division should be responsible for the artillery preparation in the sector it would assault had much to say for it, it did not fully correspond to the situation at hand. It was necessary to concentrate attack divisions on a narrow frontage before an attack. To avoid giving warning of an attack, these attack divisions moved in at the last minute. Typically, before the offensive began, a single German division had held the offensive sector, at a much lower density than was necessary for the attack. It was Bruchmuller's practice to entrust the artillery commander of this defensive division with the preparations for the counter-artillery battle. This officer had a detailed knowledge of the local sector and knew how to exploit the local communications net and means of observation--

ground observing stations, balloons, flying units and so on. The artillery commander of an attack division did not have this detailed knowledge and would normally only arrive in the attack sector a few days before the attack.

There were other reasons to handle counter-battery fire at the corps level, rather than have the attack divisions do it. For one thing, there was no telling where all the enemy artillery actually was. The way for the defense to keep some artillery available was to hide batteries from aerial observation and have them only open fire once the attack actually began (thus keeping German sound ranging from finding them). If a whole group of these hidden guns suddenly opened up in the sector of a single attacking division, the attacking division might not have the guns to spare to neutralize them, without shifting guns from the infantry preparation. Basically, gun ranges and fire direction had outrun the method of control by a single attack division, for counter-battery purposes. The defending batteries which might suddenly open up could shoot into the sectors of several attacking divisions, just as counter-battery fire could reach the defending guns from positions along the entire attacking corps. The logical level to control counter-battery fire was the corps, which Bruchmueller did.⁵⁹

Control of counter-battery fire by the corps was the rule in the attacks Bruchmueller directed in the East. However, when

Bruchmueller shifted his activity to the Western Front in autumn 1917, this method met with resistance, as it violated established practice, as well as the artillery regulations. The OHL had to adjudicate the issue, and issued something of a compromise ruling on February 8, 1918. The commander of the defending division would direct counter-battery fire until the attack divisions arrived at the front. At that point in time, control of the counter-battery artillery passed over to the attacking divisions. The counter-battery guns themselves would continue to fire on their prearranged targets (the commander of the attack division would presumably deal with previously unknown guns that suddenly revealed themselves.) Meanwhile, the artillery commander of the defensive division became an adviser to corps artillery as soon as the attack divisions arrived, and his local knowledge was available to anyone who wanted to make use of it.⁶⁰

So Lieutenant-Colonel Bruchmueller failed to prevail entirely against the leading artillerymen of the Western Front. On the other hand, he clearly had the ear of the OHL on this issue and got some of what he wanted. Bruchmueller implies in his memoirs that, in the armies and army groups he advised, there was no nonsense about the attack divisions controlling the counter-battery fire.⁶¹ He also implies that practical experience on the Western Front tended to shift actual practice in the direction

Bruchmueller preferred, although one must treat this observation with some caution.⁶²

BRUCHMUELLER AND INFANTRY/ARTILLERY COOPERATION

The artillery bombardments Bruchmueller organized varied in length from seven hours, 15 minutes long to two hours, 40 minutes. Such bombardments were much shorter than those the British and French were using on the Western Front. Of course it was highly desirable to keep the artillery bombardments short, as then the enemy would have less time for counter-measures--bringing up reserves in particular.⁶³ Bruchmueller could make short bombardments work by accepting that the purpose of the artillery preparation was to neutralize the enemy defensive position, not to destroy it root and branch. As he puts it:

... with the fire for effect it was not a matter of a complete destruction of the trench system--the sole purpose of the preparatory fire was to prepare the enemy position for assault, which could probably be achieved in a short time with a suitable method of shooting.

Naturally, no complete destruction of enemy trenches, complete destruction of obstructions and so on could be achieved with a fire period of only a few hours. That was also hardly intended. One wanted only to morally exhaust the enemy through the artillery fire, to hold him in his dugouts and then overwhelm him through surprise attack.⁶⁴

In short, Bruchmueller had a conception of the purpose of artillery fire in preparing for the attack--a conception which

sounds exactly like what Bidwell and Graham believe the British should have used.

Bruchmueller went to some lengths to ensure good infantry/artillery cooperation. One of the ways he did this was to give talks to the infantry on the artillery preparation that would precede the attack. Normally Bruchmueller would address all the officers and non-commissioned officers serving as officers of a regiment. He would go through the artillery plan in detail, pointing out what the artillery would fire at and when. After Bruchmueller's talk the officers and acting officers had the chance to ask question and make suggestions. Afterwards all the leaders would pass on the contents of the talk to their men, so that every last soldier knew what the artillery plan was. Bruchmueller gave almost all of these talks himself when he was in the East, and had delegates give the talks for the much larger artillery preparations he organized in the West.

Even though these talks took a great deal of time, and were a considerable security risk (for this reason Bruchmueller always held them as close to the date of the attack as possible, particularly the lectures to the troops), Bruchmueller thought them well worth while. For one thing, they strengthened the confidence of the troops in the thoroughness of the artillery preparations. This was an important psychological factor in the mood of the troops going into the battle. (The troops wanted to

think they had enough artillery support to win the battle, rather than simply sacrifice themselves--as anyone would.) This knowledge of the artillery fire plan had severely practical benefits. As mentioned above, it was not possible for the artillery to take every possible target under fire simultaneously. But if the infantry saw known enemy positions to their front not being bombarded, they would jam telephone lines to the rear to demand that the artillery shell those positions. This was not a small matter to men about to actually assault those positions. If the infantry knew the artillery fire plan in advance, this would not happen.

Finally, the talks to the infantry helped ensure that the infantry would actually act in close cooperation with the artillery fire, which a successful World War I attack required. For instance, the infantry got instruction on the best way to follow the rolling barrage and how to deal with dugouts. It also received instruction on how to attack rearward positions in conjunction with the artillery.

There had been some such artillery lectures to the infantry before Bruchmueller arrived on the Western Front. But it would seem that most of the artillery lectures to the infantry had their origins in Bruchmueller's initiative, if only because there were very few infantry attacks on the Western Front, apart from Verdun. Bruchmueller states that some hundreds of thousands of infantrymen

heard his lecture (mostly through their own officers) just prior to attacks.⁶⁵

In short, through aggressive use of his position as an artillery adviser, Bruchmueller was able to put into practice most of what Bidwell and Graham feel were missing from the British offensives: common practice for all the artillery involved in the attack, emphasis on neutralization of defensive positions rather than their destruction, and close cooperation with the infantry. Bruchmueller organized or helped organize the artillery for some 12 German offensives after the battle at Lake Narotsch, including the capture of Riga, the German counterattack at Cambrai, the March 21, 1918 Michael offensive, the attack on Armentieres on April 9, 1918, the attack on Soissons and Rheims, May 27, 1918, and the final German offensive on July 15, in the Champagne.⁶⁶ Most of his attacks in the East were smashing successes, as was the Michael offensive, at least in the tactical sense. The Michael offensive achieved the first breakthrough on the Western Front since 1914. Bruchmueller earned his nickname in the German army: "Durchbruchmueller," or "Breakthrough Mueller."

BRUCHMUELLER AND REGISTRATION OF FIRE

Prior to the outbreak of World War I, every artilleryman learned that in indirect fire, it was necessary to "register" the guns by firing ranging shots. Artillerymen considered firing for effect without prior registration of the guns a waste of precious

shell--and with the existing techniques, it was. But as Bruchmueller quickly discovered in the attacks he managed in the East, there were great practical difficulties connected with actually registering the guns. For one thing, exact registration of a large number of guns took time. The enemy could hardly fail to notice ranging shots from 20 or more batteries falling about the defensive positions. This provided the defender with extra warning time of an impending attack, time to bring up reinforcements and win the battle of concentration vs. counterconcentration around which breakthrough attempts on fortified lines hinged. Then again, it was never possible to find covered firing positions for all the attacking artillery. Many of them had to move up to the attack sector just before opening fire, often taking positions in open fields. If these exposed guns all attempted to register their fire, the defending artillery would detect their positions through sound ranging or aerial reconnaissance, and destroy them. Then again there were practical difficulties in registering a large number of batteries in the smoke and dust of the artillery duel that erupted as soon as the defender suspected an attack was imminent.

For this reason, in the artillery preparations Bruchmueller managed, by the summer of 1917 he began to cut corners with the artillery registration. The means by which he did this are technical in nature. Suffice to say that he took shortcuts with

registration, such as only registering for the aximuth (right vs. left direction) of the fire and not the range, registering fire approximately rather than exactly (using only a few shots) and so on. By the summer 1917 Bruchmueller's artillery also shot a crude form of predicted fire, which it corrected by limited registration.⁶⁷

The Russian Revolution put an end to the need to organize artillery bombardments in the East, and Bruchmueller transferred to the Western Front--brimming, as he saw it, with knowledge of how to properly organize an artillery preparation. Presumably because there had been so few offensives on the Western Front, artillerymen there still believed in exact registration. Bruchmueller found limited interest in the experience won in the East on the part of officers who had been serving on the Western Front. The commanding generals were most interested in the experience from the East: Bruchmueller cites the interest of von Hindenburg, Ludendorff and the army commanders. He names six general staff officers who took an interest in his views, including Generals von Kuhl, Graf von dem Schulenburg, and Lieutenant-Colonel Wetzell. But only three Western Front artillerymen took an interest.⁶⁸

Bruchmueller had presented his views on the need for limited registration to a general staff officer representing the OHL in November 1917. But on January 18, 1918, the OHL issued a special

regulation for the upcoming offensive in the spring of 1918, "The Attack in Position Warfare." That manual expressly specified that all artillery was to carefully register on its targets before firing for effect. Bruchmueller regarded this position as a step backward, as already in the East in the summer of 1917 the artillery had gotten by with only a limited registration.⁶⁹

Already certain powerful figures in the German army were pushing for no registration of the guns at all, for predicted fire. In December 1917, Bruchmueller became the artillery adviser to the Army Group of Crown Prince Rupprecht, whose General Staff Chief was General von Kuhl. Von Kuhl had Bruchmueller give a presentation on his artillery experience in the East and also had him write up his experiences. Von Kuhl already wanted to completely eliminate artillery registration before an attack, to open fire using predicted fire only. He asked Bruchmueller and another artillery advisor to the army group, Lieutenant-Colonel Lindenborn, if this was technically feasible at present. Bruchmueller was not sure, but immediately traveled to Maubeuge to consult with a Captain Pulkowski, who had responsibility for working on the problem. Based on this discussion, Bruchmueller became convinced a complete abandonment of registered fire was possible, and so reported back to von Kuhl.⁷⁰

The use of predicted fire on the Western Front had begun with predicted fire for defensive purposes. One of the main ways to use

artillery in the defensive was to fire standing barrages in front of one's own infantry position during the attack. As a practical matter, the attacking infantry could not advance through such a barrage. Even with a known target, such as the area immediately in front of one's own infantry positions, weather influences and gun barrel wear could affect shooting to the extent that the artillery either overshot or undershot the target area. In the former case, the fire might not be effective, in the latter, it might hit one's own infantry position. The solution was to register the guns before firing, but this took time. Accordingly, in 1917, the German artillery developed a rudimentary form of predicted fire for use in these defensive barrages. Captain Geyer, a General Staff officer at the OHL whose responsibilities included artillery matters (the infantry's complaints about artillery support landed on his desk), played a major role in the adoption of this form of predicted fire.⁷¹ But Bruchmueller reports that at the end of 1917 all the necessary tables for predicted fire were not even ready.⁷²

Pulkowski and the German Artillery Testing Commission (*Artillerie Pruefungskommission*) developed a method of predicted fire, known in the German army as "the Pulkowski process." Apart from the basics of predicted fire--the exact location of the guns and targets, the distance and bearing between them--Pulkowski's method depended on two corrections. One was for the weather

influences, wind and atmospheric pressure. Frontline weather stations provided "a daily influence" which all gunners on a given sector could use to correct their fire for weather factors. Obtaining the weather influence was not necessarily easy, and there was a definite potential for getting the "daily influence" wrong and causing shooting errors. Another correction factor was for "particular errors." These were differences in the way each particular gun shot, arising from variations in manufacture to the amount of wear on the gun barrel. Shooting on a range determined the particular influence on each gun. A battery of tables allowed artillerymen to correct for these factors, and hopefully shoot accurate predicted fire without any registration.

The account above is a simplification of the actual procedure. The Pulkowski process contained numerous potential sources of error.⁷³ It was entirely possible that a major artillery preparation fired using the process would prove largely ineffective and result in the slaughter of the assault troops. As a result, the idea of predicted shooting met with strong resistance from soldiers with experience on the Western Front. Bruchmueller says the method met with strong resistance from the "troops" [*die Truppe*], by which he meant not the enlisted men but line officers and general staff officers. Resistance to predicted fire came in particular from artillerymen. The artillerymen who advised the OHL in artillery questions were a particular source of

opposition to predicted fire. Apparently as technicians they could see all the problems connected with predicted fire. But Bruchmueller complained that they also did not fully recognize the advantages of the predicted fire or fully recognize the disadvantages of trying to fully register in a large-scale attack. They lacked the practical experience Bruchmueller and others had gathered in the East.⁷⁴

In January 1918, immediately after the appearance of the regulation "The Attack in Position Warfare" Pulkowski wrote to the OHL to complain about the regulation's insistence on exact registration of fire. On January 10, 1918, Prince Rupprecht's Army Group (von Kuhl was chief of staff, Bruchmueller was the artillery adviser) also complained to the OHL. The response from the OHL was rapid. Captain Geyer took up the cause of those advocating less pre-registration of artillery in the attack. (Remember that Geyer had played a role in developing predicted fire for defensive purposes.) Geyer received important support, according to von Kuhl, from Colonel Max Bauer, who was no less than Ludendorff's right hand man. (Geyer was also a protege of Bauer's.)⁷⁵ Before the end of January, the OHL had issued an addenda to "The Attack in Position Warfare." The addenda dropped the insistence on exact pre-registration of artillery prior to an offensive. The OHL also ordered trials of the Pulkowski method of predicted fire.⁷⁶

On February 28, 1918, the OHL issued a judgement on the use of the Pulkowski process. This document pointed out that there were still many potential sources of error in Pulkowski's method, and recommended at least a limited registration of artillery. In particular, the artillery was to register at least for bearing, if not for range. (The nature of the dispersion of artillery is such that errors in bearing are more serious than those of range.)⁷⁷ Bruchmueller judged this February 28 ruling of the OHL no better than a return to the artillery practice of the East in the summer of 1917.⁷⁸

The actual introduction of predicted artillery fire by the Germans went something like this: they used some registration of fire in their great attacks on March 21 and April 9, 1918. In those attacks, despite limited use of registration, the artillery actually shot at most of its targets by predicted methods, which turned out to work quite well. Registration of guns, on the other hand, proved a most difficult matter. The weather was poor, so most guns could not see to register anyway. Then again, a large number of batteries were in such exposed firing positions that prior registration would have been suicidal. Bruchmueller stated that most of the potential problems with predicted fire vanished if all the artillerymen simply followed the proper procedures to the letter: applying all those tables correctly. All the German attacks after April 9 used predicted fire as a matter of policy.⁷⁹

So as stated earlier, following Bidwell and Graham, predicted fire was an technical problem which the artillery could solve on its own. And the British and German artilleries solved the technical problems at about the same time. According to Bidwell and Graham, the British had predicted fire methods by the time of Ypres in 1917, but were afraid to use them extensively. They did use predicted fire at Cambrai in November 1917, but that was something of a special case: a rolling barrage fired in front of a surprise tank attack. The demands for accuracy of destruction were much less than in a more deliberate attack. The Germans had predicted fire methods in the Spring of 1918, but were reluctant to rely upon them fully. If the British had been able to launch their planned Spring 1918 offensive (the Germans beat them to the punch), they likely would have shown a similar reluctance to rely fully upon predicted fire.

The almost simultaneous introduction of predicted fire by the Germans and the British should not obscure the role of Pulkowski, von Kuhl, Bruchmueller and others in overcoming resistance to the new method within the German army. Bruchmueller never claimed to have developed predicted fire himself; he gives full credit to Pulkowski for that.⁸⁰ But Bruchmueller undoubtedly supported Pulkowski. Bruchmueller had already gone a long distance towards reducing dependence on registration for the attacks he prepared in

the East. This constituted something like practical evidence of the benefits of reducing registration.

Pulkowski himself had this to say about the the controversy surrounding introduction of predicted fire in the German army:

The wish to carry out an attack without prior registration was doubtless present with most troop leaders. The possibility of carrying this out was however absolutely disputed by almost all artillerymen in high positions. Of the artillerymen in influential positions, ... only Colonel Bruchmueller and Colonel Gobbin had real trust in my process.⁸¹

It is possible at this point to draw some kind of balance of the forces in the German army that affected the controversy over the adoption of predicted fire. The field commanders were mostly for it, for they could see the advantages of the method. The technical specialists, the artillerymen, were by and large against the measure, except for the new method's enthusiasts: Pulkowski, Bruchmueller and Gobbin. The mass of artillerymen were too aware of the problems involved, too wedded to prior practice, and too concious of their responsibility to actually hit the targets the infantry would have to assault. The pro-prediction forces received important, indeed critical support from certain General Staff officers, particularly von Kuhl (who as chief of staff of an army group had the same concerns as the field commanders), Geyer, and Bauer. These three officers all helped ensure that the matter came to Ludendorff's attention.⁸²

It is worth noting that the German artillery innovators in general received important support from the German General Staff, whereas the British General Staff was by and large an obstacle to innovative British artillerymen.⁸³

THE GERMAN ATTACK OF MARCH 21, 1918

At 4:00 AM on March 21, 1918, the artillery of three German armies, thousands of guns, opened fire on the positions of British Fifth Army near St. Quentin.⁸⁴ The guns moved systematically through the British positions for 5 hours and 40 minutes, neutralizing artillery positions, command posts, communications junctions, and the like. Finally, while continuing to suppress the British artillery, they settled on the British infantry positions. At 9:40 AM the German artillery began firing a rolling barrage in front of German assault troops.⁸⁵

The result, whether due to improved artillery practice or improved infantry tactics, both of which the Germans had, was the first breakthrough of a fortified trench system seen on the Western Front. By the evening of the first day the German Second and Eighteenth armies had advanced between 5 and 10 km along most of their front. By the evening of March 23rd, the third day of the attack, Second and Eighteenth Army had created a bulge in the British lines about 25 kilometers deep. (German Seventeenth Army in the north made considerably less progress.)⁸⁶ Eventually the Germans gained some 40 miles against the British.⁸⁷ The Germans

had done what the British and French had tried in vain to do for three years: drive through a defensive system and restore open warfare.

Bruchmueller cannot claim all of the credit for the artillery preparations. The Army Group of [Bavarian] Crown Prince Rupprecht made the preparations for the attack, including the artillery preparations.⁸⁸ Bruchmueller states that the army group received several artillery specialists for the leadership of the artillery. Bruchmueller praises by name seven artillery advisers and commanders of the Eighteenth Army alone, for their work in preparing the artillery bombardment.⁸⁹

Bruchmueller himself was one of the artillery advisers assigned to the Army Group of Crown Prince Rupprecht. Bruchmueller felt that the attack at Riga, which he himself had directed, constituted a sort of model for the army group's artillery plans. But there were three Generals of Artillery involved [one for each of the three armies, presumably] in the attack preparations, as well as a number of "leading artillerists" [*leitende Artilleristen*] assigned to Seventeenth, Second, and Eighteenth Armies.⁹⁰ After the initial planning stage, Bruchmueller became the General of Artillery in charge of the artillery preparations of Eighteenth Army. The General of Artillery for the Seventeenth Army was General von Berendt and the General of Artillery for the Second Army was Colonel Habicht.⁹¹

For the artillery planning of the Michael offensive as a whole, Bruchmueller probably played a large role, thanks to his experience at Riga, but still had to compete with other leading artillerymen to have his voice heard.

THE BRUCHMUELLER/BERENDT CONTROVERSY

After the war, a retired Colonel Bruchmueller seems to have spent much of his time writing the memoirs which have made him the most famous German artilleryman of the First World War. He also carried on a running feud with a number of other German artillerymen, a battle carried out in the pages of the German military magazines and in personal letters between some of the principals and their supporters. The correspondence relating to these controversies constitute a large part of the material in Bruchmueller's *Nachlass*.⁹² At stake were reputations: who could claim the most credit for various artillery innovations, who was to blame for various artillery failures. Certainly Bruchmueller owes some of his fame to his skill as a publicist. In the battle of article and counter-article, and not least in lining up supporters to write articles friendly to one's own side, Bruchmueller gave as good as he got.

The controversies Bruchmueller and his enemies waged are not of particular interest to this chapter. But they do underline an important point. Bruchmueller was not the only German artillery adviser of the war. Remember that every German corps and every

German army had a permanent artillery adviser. For particularly important battles, there were 16 Generals of Artillery, who might in fact be of any rank from lieutenant-colonel up. There were the artillery advisers to the OHL. There were all the divisional artillery commanders, from whose ranks Bruchmueller rose. Although most of these individual were deservedly obscure, all had the chance to put something of a personal stamp on German artillery practice. The German army seems to have given its artillerymen a free hand in coming up with and enforcing best artillery practice for its attacks. Bruchmueller arose out of a competitive system, and if he went on after the war competing for attention, it was perhaps only appropriate. He had competed for attention and prominence during the war, as well as for getting his ideas translated into practice.

Bruchmueller's chief literary adversary after the war was a General von Berendt, who had been one of the leading German artillery of the war. Von Berendt had directed the artillery preparation for the attack at Caporetto, for instance. Bruchmueller devoted some nine pages in his second book to a detailed attack on von Berendt's conduct of the artillery preparation of the for the Seventeenth Army's attack in the Michael offensive.⁹³ In an article largely devoted to replying to Bruchmueller's charges, von Berendt explicitly draws a parallel between his and Bruchmueller's careers.

The two leading artillerists [of Seventeenth and Eighteenth Armies: von Berendt and Bruchmueller] were specialists, who had been sent from attack to attack by the OHL or other higher agencies. Both had always seen their activities accompanied by success.⁹⁴

Bruchmueller and von Berendt had know each other before the war, when they were both captains in the same regiment of Foot Artillery.⁹⁵ The author of this work does not know the specific cause of the bad blood between them. It may date back to an attack which both men helped prepare during the summer of 1917. Von Berendt put it like this: "At the attack in East Galicia in the summer of 1917 (Zloczow sector), Colonel Bruchmueller and I put in place the [artillery] preparations under my command." Bruchmueller's copy of Berendt's article, found in the former's Nachlass, contains the angry marginalia "But not under command!"⁹⁶

In his second book, Bruchmueller criticizes von Berendt's handling of the artillery preparation for Caporetto. Von Berendt had ordered a registration of fire lasting five days. According to Bruchmueller, therefore, only the poor quality of the Italian enemy accounted for the success of Caporetto.⁹⁷ Von Berendt replied that he had had to order exact registration because of the poor quality of the Austo-Hungarian maps used at Caporetto.⁹⁸

And so it went. Von Kuhl offered a balanced assessment of Bruchmueller's career, as follows:

I see the main value of his [Bruchmueller's] activity in that he engaged his entire personality and with an unusual soldierly passion understood how to

convey to the troops his rich artillery experience. Untiringly after the accomplishment of one task he moved on to the next. Thus in the course of the war he worked himself up from the commander of a battalion of *Landwehr* Foot Artillery to artillery expert to the OHL.⁹⁹

We should not let Bruchmueller's success as a memoirist, relative to the other German artillery specialists, obscure for us to the nature of the system which allowed Bruchmueller to rise as high as he did and to have the impact he did. There were dozens of German artillery specialists, and they had this much in common: they all received a relatively free hand in organizing the artillery aspects of German battles.

There seem to have been a striking contrast in the British and German approach to the employment of artillerists. The German artillerists could draw up what they thought was an effective artillery plan, without having to work within the straight-jacket of an infantry plan which regarded the artillery preparation as an afterthought (and cure-all for enemy resistance!). The German artillerists could innovate, and did. For this the German General Staff deserves credit, just as Bidwell and Graham blame the British General Staff for the contrary phenomenon in the British army. All the German artillery advisers worked for a General Staff Chief: everyone on a German staff did. The role of Hell and von Kuhl in Bruchmueller's career shows that these General Staff

Chiefs often supported their artillery advisors when they wanted to do new things, as their British counterparts did not.

-- Notes --

1. Commanding General Marine Corps Development and Education Command, Machineguns and Machinegun Gunnery, (Quantico, Marine Corps Development and Education Command, June 1987), Appendix A, Table V--Part 1, (p. A-12). This table is for the ammunition of the current M60 Machinegun, which uses a round very similar in its ballistic characteristics to the full power World War I rifle/machine gun cartridges.

2. This description of machinegun gunnery does not take into account such dismal subjects as "the beaten zone," searching fires, searching and traversing fires, final protective lines, and so on. Suffice to say, the only safe place within range of a hostile machine gun was in a depression of the earth, behind an earth bank, and so on: a place the trajectory of the gun could not reach because there was something in the way. But attacking infantry had to get forward somehow, not just cower under protection.

3. Artilleries continued to use direct fire in specialized circumstances, such as in mobile situations, briefly at the culmination of an attack, and so on. But the losses to the artillery involved were very high. There was also an attempt to develop very light artillery pieces (37 millimeters was a common caliber) to use as "trench artillery" (a term which includes mortars). These light guns were essentially specialized anti-machinegun-nest weapons. They were of some value, but not a solution to the problem the machinegun posed for the attack.

4. Shelford Bidwell and Dominick Graham, Fire-Power: British Army Weapons and Theories of War 1904-1945 (London: George Allen & Unwin, 1983), p. 10.

5. Ibid., p. 14.

6. Ibid., p. 17-18.

7. Ibid., p. 27.

8. Ibid., p. 101-115, *passim*.

9. Ibid., p. 10.

10. Ibid., p. 141-43.

11. Ibid., p. 107-108.

12. D. B. Nash, Imperial German Army Handbook, 1914-1918 (London: Ian Allan Ltd., 1980), p. 75.

13. Both the ideas of neutralization and coordination come from Bidwell and Graham, Firepower. The authors come back to these ideas repeatedly in the book, but see chapters 5, 6, and 7 in particular, pp. 66-130.

14. G. S. Hutchinson, Machine Guns: Their History and Tactical Employment (London: MacMillan and Co., Limited, 1938), p. 163-164.

15. Ibid., p. 175-176

16. Ibid., p. 193-194.

17. See Bruce I. Gudmundsson, The Forlorn Hope (draft copy of a forthcoming book in the possession of the author) for the first definitive account of the development of German "infiltration" (*Stosstrupp*) tactics.

18. Bidwell and Graham, Firepower. The development of the infantry's ability to fight its way through enemy positions without relying on the artillery's help overmuch is a theme of the book, but see the chapter on the infantry, p. 116-130, in particular.

19. Ibid., p. 10.

20. Ibid., p. 102-103.

21. Ibid., p. 105-106.

22. This only scratches the surface of the complexity of predicted fire, but is enough for our purposes. See Bidwell and Graham Firepower, p. 105-109.

23. Ibid., p. 72. Although Bidwell and Graham discuss the process for the British army, the same thing holds true for the Germans. See the remainder of this chapter.

24. Ibid., p. 91. The Germans went through a similar transition period in the adoption of predicted fire.

25. This point is from Bidwell and Graham. See argument below for specific references.

26. Ibid., p. 71.

27. Ibid., p. 72.

28. Ibid.

29. Ibid.

30. Ibid., p. 82.

31. Ibid., p. 90

32. Ibid., p. 90-91.

33. Ibid., p. 103-104.

34. Ibid., p. 72.

35. Ibid., p. 100-101.

36. Georg Bruchmueller, Die deutsche Artillerie in den Durchbruchschlachten des Weltkrieges, 2nd, substantially enlarged edition (Berlin: E. S. Mittler & Sohn, 1922), p. 43.

37. Bruchmueller, Die deutsche Artillerie in den Durchbruchschlachten des Weltkrieges, p. 3.

38. Ibid., p. 1.

39. "*Truppenfuehrer mit Befehlsbefugnis.*" Ibid., p. 7.

40. D. B. Nash, Imperial German Army Handbook 1914-1918 (London, Ian Allan Ltd., 1980), p. 56.

41. There were 16 *Generale der Artillerie*. Ibid., p. 53. See also, Bruchmueller, Die deutsche Artillerie in den Durchbruchschlachten des Ersten Weltkrieges, p. 8.

42. Bruchmueller, Die deutsche Artillerie in den Durchbruchschlachten des Weltkrieges, p. 8.

43. This is Bruchmueller's own judgement. Ibid., note on p. 1. For a listing of the battles which Bruchmueller considered the basis of the experience which he condensed into "The German

artillery in the Breakthrough Battles of the World War," see his Foreword, p. V.

44. Ibid., p. 74-75.

45. Bidwell and Graham, Firepower, p. 10-11.

46. Ibid., p. 75-76.

47. Bidwell and Graham, Firepower, p. 100.

48. Ibid., p. 72.

49. Ibid., p. 100. The artillery of XIII corps followed Budworth's plan of its own free will, with great success.

50. Bruchmueller, Die deutsche Artillerie in den Durchbruchschlachten des Weltkrieges, p. 43-44.

51. Ibid., p. 67.

52. Ibid., p. 53-54.

53. Ibid., p. 55.

54. Ibid., p. 25-39. Pages 67-73, concerning the approach march and firing positions of the artillery, Bruchmueller also largely devotes to questions of maintaining secrecy. The problem of secrecy is a theme throughout the book.

55. Ibid., p. 52.

56. Ibid., p. 77-78.

57. Ibid., p. 58-59. For the meanings of the abbreviations, see Foreword, p. XI. The Ika group would also fire for part of the period of the bombardment at artillery targets. See p. 77-78.

58. Ibid., p. 59. See the reference to "*im Sinne unserer Vorschriften*" in the statement from the OHL which Bruchmueller quotes.

59. Ibid., p. 59-63.

60. Ibid., p. 59.

61. Ibid., p. 61.

62. Ibid., p. 59.

63. Ibid., p. 79-80.

64. Ibid., p. 80.

65. Ibid., p. 44-50.

66. Ibid., Foreword, p. V-VI.

67. Ibid., p. 85-88.

68. Ibid., p. 90.

69. Ibid., p. 88-89.

70. Ibid., p. 90-92. The information on Lindenborn's role come from, von Kuhl, "*Das deutsche Agriffsverfahren bei der Offensive im Jahre 1918*," Deutsches Offizierblatt, Volume 25, Number 27 (September 21, 1921), p. 534. Von Kuhl reports that [somewhat later] Lindenborn actually brought Pulkowski to von Kuhl, Pulkowski convincing von Kuhl of the worth of his new process. As von Kuhl puts it "Colonel Bruchmueller also agreed." Bruchmueller reproduces a writing of Pulkowski's which mentions this Lindenborn-Pulkowski-Kuhl meeting. See Bruchmueller, Die deutsche Artillerie in den Durchbruchschlachten des Weltkrieges, p. 99.

71. Bruchmueller, Die deutsche Artillerie in den Durchbruchschlachten des Weltkrieges, p. 99. See also p. 93.

72. Ibid., p. 85.

73. See the detailed account of the Pulkowski process in Bruchmueller, Ibid., p. 92-97.

74. Ibid., p. 96.

75. The author bases this judgement on correspondence between Bauer and Geyer in the *Nachlass* Bauer at the Bundesarchiv, Koblenz.

76. Bruchmueller, Die deutsche Artillerie in den Angriffschlachten des Weltkrieges, p. 99-100. For the information to the effect that Bauer supported the idea of lessening dependence on registration, Bruchmueller quotes von Kuhl from "*Das deutsche Agriffsverfahren bei der Offensive im Jahre 1918*," p. 534. After the war, an extensive controversy developed over

Bauer's role in the adoption of predicted fire. In 1935, Geyer submitted an article praising Bauer's role to the German military magazine Militaer-Wochenblatt. The editor of the magazine, Wetzell [formerly a prominent General Staff officer in the war] referred the article to Bruchmueller and Major [his World War I rank] Marx, a protege of Bruchmueller's, for comment. Wetzell was clearly deeply suspicious of Bauer and his protege Geyer, ascribing to them an attempt to claim credit that did not belong to them. Wetzell so expresses himself in a letter to Bruchmueller on July 6, 1935. See Bundesarchiv/Militaerarchiv, Freiburg, Nachlass Bruchmueller, 275/36. In a long exchange of letters, copies of which Wetzell forwarded to all the participants in the debate, Bruchmuller and Marx cast doubts on the accuracy of Geyer's articles. Geyer in turn defended his point of view. Geyer offers personal testimony that Bauer did support limited registration of artillery in January 1918, in the critical period after the OHL regulation of January 1, 1918. Bruchmueller and Marx cannot offer any real evidence that this was not so, but are darkly suspicious of Geyer and Bauer's motives, suspecting that they are trying to steal credit for the adoption of the Pulkowski method. Bruchmueller and Marx agree that General Ziethen, an artillery adviser to the OHL, was an outspoken enemy of limited registration and predicted fire. It seems to this author that Geyer's testimony must be accepted at face value, for the following reason. It is clear from the exchange of letters that Ziethen and Bauer were the leading artillery advisers to the OHL. Accordingly someone important in the OHL, presumably Bauer, had to support the new methods, if one is to account for the change in the OHL's insistence on exact registration. The OHL had arranged a special trial of the Pulkowski process on February 2-3. This trial was a failure. Bruchmueller considers this an excuse for the Bauer-Geyer-Ziethen axis to issue the ruling of February 28, 1918. (See letter of Bruchmueller's headed "*Rueckaeusserung zu den Ausfuehrungen ... Herrn Generals [Geyer's post-war rank] Geyer*, p. 6.) But it seems more likely that with a failed trial of the Pulkowski process on February 2, and the united opposition to limited registration/predicted fire of Zeithen, Bauer, and Geyer, the OHL never would have retreated from its insistence on exact registration of January 1, 1918. A more likely explanation was that there were divided counsels on the question in the OHL, resulting in the compromise ruling of February 28, 1918. If the trial of February 2-3 was a failure for the Pulkowski method, and Ziethen was an opponent of limited registration, someone in the OHL had to support the new method. The claims Geyer (who was after all present at the OHL, as Bruchmueller and Marx were not) makes for Bauer therefore have a certain inherent plausibility. Based on this extensive exchange of letters in the Nachlass Bauer (some 47 pages), I see no reason to change the interpretation in

the text, which is based in any case on Bruchmueller's first book. See Bundesarchiv/Militaerarchiv, Nachlass Bauer, 275/36, *passim*.

77. Bruchmueller, Die deutsche Artillerie in den Durchbruchschlachten des Weltkrieges, p. 95.

78. Ibid., p. 96.

79. Ibid., p. 96-97.

80. For instance, see Bruchmueller's statement on p. 92, Ibid.

81. Ibid., p. 100. Bruchmueller takes this statement of Pulkowski's from a writing which Pulkowski lent to Bruchmueller. See Ibid., p. 97. Colonel Gobbin was the artillery commander of the 7th Reserve Division, Army Group of the German Crown Prince. See Ibid., p. 100.

82. Bruchmueller says Ludendorff discussed the matter with von Kuhl and General Graf von dem Schulenburg in January 1918, a meeting which resulted in limited support for the predicted fire/limited registration position. See Ibid., p. 100.

83. See Bidwell and Graham, Firepower, *passim*.

84. The artillery of Eighteenth Army alone comprised 594 batteries. See Georg Bruchmueller, Die Artillerie beim Angriff im Stellungskrieg (Charlottenburg: Verlag "Offene Worte," 1926), p. 98-101. For a major attack such as this, all the armies received additional attached artillery from the OHL reserves, beyond their complement of organic artillery.

85. Ibid., p. 112.

86. Ibid., see map on p. 96.

87. Martin Middlebrook, The Kaiser's Battle: 21 March 1918: The First Day of the German Spring Offensive (London: Penguin Books Ltd., 1978), p. 309.

88. Later, the OHL transferred one of the army group's three armies, the Eighteenth, to the control of the Army Group of the German Crown Prince. This meant that general coordination of the attack passed over to the OHL. Bruchmueller, Die Artillerie beim Angriff im Stellungskrieg, p. 97.

89. Ibid.

90. Ibid., p. 112-113.

91. Bruchmueller, Die deutsche Artillerie in den durchbruchschlachten des Weltkrieges, p. 91.

92. Found at the Bundesarchiv/Militaerarchiv in Freiburg, West Germany.

93. Bruchmueller, Die Artillerie in den Angriffschlachten des Weltkrieges, p. 116-120, p. 177-181. Bruchmueller attributes the relative lack of success of the Seventeenth Army almost entirely to von Berendt's artillery preparation, particularly too much pre-registration [presumably alerting the enemy, although all the German armies used some pre-registration on March 21]. It seems more likely Seventeenth Army's problems were due to having stronger Allied forces opposing them. See p. 112 for Bruchmueller's grudging admission of this fact. Interestingly, in his first book, Bruchmueller had quoted von Kuhl in praise of von Berendt's artillery preparation of Seventeenth Army's attack. See Bruchmueller, Die deutsche Artillerie in den Angriffschlachten des Weltkrieges, p. 91. If thereby Bruchmueller extended an olive branch to von Berendt, von Berendt did not take the proffered branch. See Von Berendt's article attacking Bruchmueller, "Schiessuebungen," Artilleristische Rundschau 1, (October 1925), p. 193-196.

94. Von Berendt, "Die Artillerie beim Angriff im Stellungskrieg," Artilleristische Rundschau 3 (April 1927), p. 19.

95. Bruchmueller, Die deutsche Artillerie in den Durchbruchschlachten des Weltkrieges, p. 91.

96. Von Berendt, "Die Artillerie beim Angriff im Stellungskrieg," p. 19. In his account of the attack in East Galicia, Zloczow sector, Bruchmueller says the "sector Zloczow" and the corps carrying out the main attack (XXIII Reserve Corps) each received an artillery specialist. Presumably (although Bruchmueller does not say) von Berendt was the "sector Zloczow" specialist and Bruchmueller the XXIII Reserve Corps specialist. In that case, von Berendt would have been an adviser senior to Bruchmueller but not his commander. German command relationships, particular in the area of advisers, could become rather vague, with a great deal dependent on personalities. See Bruchmueller, Die Artillerie beim Angriff im Stellungskrieg, p. 46-47.

97. Bruchmueller, Die Artillerie beim Angriff im Stellungskrieg, p. 116.

98. Von Berendt, "Die Artillerie beim Angriff im Stellungskrieg," p. 20.

99. Von Kuhl, "Das deutsche Angriffsverfahren bei der Offensive im Jahre 1918," p. 534.

CHAPTER VI

FRITZ LOSSBERG, DER ABWEHRLOEWE

In the popular imagination, the phrase "trench deadlock" sums up World War I from beginning to end. It is true that, in the West, the front lines did not move very much at all from the autumn of 1914 to the spring of 1918. It is still hard to believe, but not one of the great offensives on the Western Front during this period--not Verdun, not the Somme, not Arras and not Passchaedaele--moved the front by even ten miles.¹ Yet these were all offensives that cost hundreds of thousands of lives and represented something like a maximum effort on the part of the attackers.

But the trench deadlock on the Western Front actually masked a great deal of tactical evolution on both sides. In 1915, Falkenhayn made a strategic decision to fortify the front in the West and hold it with minimal forces, while seeking a decision against the Russians in the more open conditions of the East. Attack was therefore a strategic imperative for the Allies, to take pressure off the Russians and keep them in the war against Germany. The Allies did not want to fight Germany alone. The Allies had strategic reasons to attack, and they did improve their tactics as they went along. The only reason the lines in the West

did not move is that the Germans also improved their defensive techniques as time went on.

The most obvious response to the trench deadlock was to increase the amount of heavy artillery. The European armies had all known that only heavy artillery could effectively destroy trenches, from accounts of the fighting in Manchuria during the Russo-Japanese War. Only the Germans started the war with a substantial complement of heavy artillery; its value was obvious to all once the war began. By the end of the war the Germans had fourteen times the amount of heavy artillery in their army they had had in 1914, and they started from a much higher base than anyone else.² All the other armies in the war increased their heavy artillery in like measure.

By the time of the Battle of the Somme artillery bombardments had reached massive proportions. During the preparatory bombardment, the British fired 1,628,000 shells.³ Not all of these shells were of heavy caliber, but there were enough shells of all calibers to make the trenches basically uninhabitable. Nor were deep dugouts any panacea: the troops tended to stay in them too long after the bombardment had lifted, risking capture by the assaulting infantry. (Early in the war, the artillery had hit upon the trick of lifting fire on the defender's trenches, only to renew it after a short pause. The artillery might do this several times, which made it difficult for the defenders to know when they

could actually occupy the trenches.) At the Somme, the Germans learned to live in their trenches and dugouts, moving into the sea of shellholes that surrounded all their positions during really heavy bombardments to escape the brunt of the shelling.⁴

From early on in the war, the combatants recognized that crowding the front line trenches with troops would only increase the defender's casualties. Trenches were fine protection against flat trajectory bullets, but rather less satisfactory protection against a really heavy bombardment. Particularly if the attacker could observe the artillery fire against the defender's front-line positions (which since they were front-line positions, usually was the case), this preparatory artillery fire could be deadly. Artillery is an area weapon: the more soldiers in an area, such as the trenches, the heavier the casualties. The German tactician Hermann Balck recorded that General Joseph Joffre, the French commander early in the war, cautioned against overcrowding the front trenches with troops as early as January 5, 1915.⁵

For a variety of reasons, both the Allies and the Germans tended to pack the front-line trenches with troops. The Allies were reluctant to yield another foot of the sacred soil of France. The Germans were reluctant to give up any of their dearly-bought gains. Both sides magnified the value of any territorial gains they made for the purposes of the propaganda war.⁶ Then again, everyone's military ideal for the defense was to fight to the last

man and the last cartridge, and to immediately counter-attack to regain any ground lost. Armies had always fought that way, and in the ages before heavy artillery that was the best way to do things.

The second wartime Chief of the General Staff, General Erich von Falkenhayn, certainly understood the effects of overcrowding the front-line trenches. Falkenhayn based his attack on Verdun on this principle. His reasoning was that the French could not afford to lose Verdun, for psychological reasons. Furthermore, Verdun lay only a short distance behind French lines, so the French could not afford to give up any ground in front of Verdun. Therefore, in order to hold the line in front of Verdun, they would have to pack their front-line trenches with troops. There the superior German heavy artillery would slaughter them. Falkenhayn did not actually want to take Verdun. He wanted to bleed the French Army white in front of it. Rather cynically, he did not tell this to his troops or their commander, the German Crown Prince. Of course the problem was that the Germans, on the attack, also had to pack their front lines with troops, and therefore took heavy casualties from the French artillery.⁷

If Falkenhayn knew how to exploit the Allied tendency to pack the front-line trenches with troops when he attacked, thinning out the German front lines in the defense seems never to have occurred to him. He insisted that German commanders hold the front lines

at all costs and enforced this policy by removing those commanders who did not. German commanders accordingly tended to pack the front line with troops, this being the only way they knew to ensure the front line held. But this policy concentrated German troops where they were most vulnerable to the Allied artillery: at the very forward edge of the battlefield. Falkenhayn held to this policy throughout the Battle of the Somme, where the massive Allied artillery caused the Germans heavy casualties.⁸

With Falkenhayn's removal as Chief of the General Staff, the team of Field Marshal Paul von Hindenburg and General Erich Ludendorff took over the OHL. Although nominally Hindenburg was the Chief of the General Staff, in reality he became more like the commander and father-figure of the German army, while Ludendorff, with the title of First Quartermaster-General, was his chief of staff. Ludendorff initiated a search for better defensive tactics for the German army. Strategically, Germany needed to continue to hold on the Western Front while she finished off Russia in the East. It was easy to see where Falkenhayn's policy of packing the front-line trenches with troops was going to lead, as the Allied artillery grew ever more powerful.

In his book The Dynamics of Doctrine, Timothy Lupfer characterizes Ludendorff's search for the new defensive tactics as a "corporate effort."⁹ Hindenburg and Ludendorff had attained great tactical success in the East, but they did not expect to be

able to apply them in the different conditions of the West. As Lupfer cites Ludendorff:

On the Eastern Front we had for the most part adhered to the old tactical methods and old training which we had learned in the days of peace. Here [in the west] we met with new conditions and it was *my duty to adapt myself* [Lupfer's italics] to them.¹⁰

What Ludendorff did was to promote a debate on defensive doctrine in the German army. Even during Falkenhayn's tenure, the OHL's Western Front operations section [a sort of satellite of the OHL dealing exclusively with Western Front matters] and some troop units had moved towards an improved defensive doctrine. Falkenhayn had ignored these stirrings, but Ludendorff encouraged them.¹¹ At least when it came to matters of defensive doctrine, Ludendorff was a good listener, and actively sought out new ideas. In this he was similar to the Chief of Staff of Army Group Rupprecht, von Kuhl. Von Kuhl was also notable for aggressively seeking input from subordinates.¹² We have already seen how von Kuhl solicited Bruchmueller's views on artillery preparation, based on the latter's experience in the East. Von Kuhl had even gone beyond that and asked Bruchmueller and Lindenborn to look into the matter of the feasibility of predicted fire.

Ludendorff's inquiry, coupled with ongoing battlefield experience, came up with a defensive system that looked something like this. The basic alternative to packing the front lines with troops was to hold the front lines thinly and put as many of the

defending troops as far back as possible. Most World War I artillery had a range of under ten miles; the lighter guns started to drop out at about six miles. The attacker's artillery observation also tended to deteriorate with increasing range. If the defender kept most of the defending troops fairly far back, they would escape the brunt of the offensive artillery fire.

Of course, this made it easier for the attacker to penetrate the defensive system. The defender's solution was to hold the defensive system primarily by means of counterattack. Relatively light forces in the forward parts of the system would break up the cohesion of the attack and inflict casualties. Counterattack units would then restore the cohesion of the line. The counterattacks would take place in a "battle zone" behind the front lines--a battle zone chose with a view to securing favorable artillery observation for the German force. So ideally, German counterattack forces would operate in the battle zone with friendly, responsive artillery support, whereas the Allies had probably outrun their observed artillery support. If they could launch their counterattacks quickly enough, fresh organized German units would confront Allied units strung out and disorganized by the fight to get through German screening units.

The great virtue of counterattack units was that it was possible to keep them farther back from the front lines, to escape the terrible initial bombardment. At the least, the Germans could

usually station the counterattack units in areas not under direct Allied artillery observation. It was also possible to station counterattack units completely outside the effective range of Allied artillery. By 1917, it was common for the Germans to do this with whole counterattack divisions.¹³

The OHL under Ludendorff began the development of this system at a special meeting at Cambrai on September 8, 1916. By December 1, 1916, the OHL had published a doctrinal statement entitled The Principles of Command in the Defensive Battle in Position Warfare (hereinafter referred to as Principles). Ludendorff credited Colonel Bauer and Captain Geyer with its authorship.¹⁴ There was still an argument going on in the German army about the suitability of the new principles, an argument which Ludendorff had encouraged. But once the Principles appeared, embodying as it were the winning ideas, Ludendorff "put his full authority behind the new doctrine," as Lupfer puts it.

Ludendorff was willing to enforce the doctrine. Shortly after the publication of the new doctrine, the French counterattacked at Verdun. The defending German forces had not positioned their reserves correctly for a rapid counterattack, which allowed the French to consolidate the gains. Ludendorff sacked the two commanders responsible.¹⁵ Ludendorff also made sure that training reflected the new doctrine, establishing

special schools to teach the new tactics to high ranking and staff officers, junior officers, and non-commissioned officers.¹⁶

In other words, the new defensive policy was one supported from the top in every way. Yet, just as a doctrinal debate had been the genesis of the new defensive policy, Ludendorff allowed the new policy to continue to develop in light of new experience.

As Lufper puts it:

Ludendorff's other actions, however, showed that he could be tolerant when he detected a disagreement based on reflections and experience, not careless neglect [as in the failures at Verdun]. This tolerance appears in his reaction to the criticism of Colonel von Lossberg. This expert tactician believed that the Principles were too liberal in allowing troops in forward trenches to move to the rear if necessary. He also feared that the movements of so many small units would become too chaotic. Ludendorff's reaction was gracious. He published von Lossberg's ideas, as expressed in the paper "Experiences of the First Army in the Somme Battles," as part of an official training directive rather than stifling all criticism. ... Colonel von Lossberg, for his part, later demonstrated great flexibility during the battles of 1917 and he became the supreme practitioner of the elastic defense in depth.¹⁷

Lossberg's views were important. Lossberg was the chief of staff to the German armies most heavily involved in the defensive battles of the Champagne (autumn 1915), the Somme (summer 1916), Arras (spring 1917), and Passchaendaele (autumn 1917). In each of these battles, Lossberg received extraordinary powers, going beyond the already great influence of a chief of staff, to direct the dispositions of forces. In effect, Lossberg directed all the

the major German defensive battles on the Western Front after the autumn of 1915. Small wonder then that the German army's nickname for this fireman of the Western Front was "the defensive lion" (*Der Abwehr Loewe*).

It was Lossberg who actually applied the new German defensive tactics in the field. It had to be so, for Lossberg was in charge at all the major German defensive battles. Furthermore, Lossberg got his start as a defensive expert under Falkenhayn, so he worked under both the old and the new tactical dispensation. During each period, Lossberg advanced the state of the art of defensive tactics by practical innovations in the field, applied on the spot.

Lossberg was the German army's defensive expert, in other words, who the high command moved from defensive battle to battle, just it moved artillery experts like Bruchmueller and Berendt from battle to battle. The new German defensive tactics originated as a result of a conceptual effort which was somewhat self-consciously "bottom-up" in nature,¹⁸ (The enforcement of the new defensive doctrine was "top-down," as it needed to be.) In Lossberg's career we can see that development and application of defensive doctrine were also "bottom-up" activities. With Lossberg, we see a subordinate given the freedom to develop new techniques in the process of working out practical problems, new techniques which

the high command later sponsored for general use. Something very similar happened in the case of the German artillery experts.

It now behooves us to look more closely at the career of the "defensive lion." Lossberg began the war as a career General Staff officer with the rank of lieutenant-colonel. He served as Chief of Staff of the XIII Army Corps from the outbreak of the war until January 26, 1915. His corps first saw action in the Verdun area, as part of the left wing of the Schlieffen Plan. Later it fought in the first battles around the area of Ypres. Then the XIII Corps moved to the Eastern Front, its location when Lossberg left it for other duties. Lossberg valued his experiences with XIII Corps, as they gave him his first combat experience.¹⁹ However, there is no indication that he was responsible for any noteworthy tactical innovations during this period, so his experiences need not detain us.

In January 1915, Lossberg was appointed deputy chief of the Operations Section of the *Oberste Heeresleitung* (OHL), the Army High Command. At that time the OHL had its headquarters in the French town of Mezieres, and Lossberg would remain there until September 1915.²⁰ The Chief of the Operations Section and Lossberg's immediate superior was Colonel Gerhard von Tappen. As Chief of the Operations Section in wartime, Tappen was the most important assistant to the Chief of the General Staff, Falkenhayn. When Falkenhayn moved the OHL to the German town of Pless in order

to be nearer the Eastern Front, Tappen went with his chief. Lossberg and a small group of staff officers remained behind at Mezieres to act as a liason office for the Western Front. There they worked out staff proposals for future operations and handled routine staff work. The power to actually move units remained with the main headquarters in Pless.²¹

One of Lossberg's chief duties was to transmit the reports of the Western Front units to Pless, if sufficiently important directly to Falkenhayn.²² Many of these reports emphasized the tactical advantages of reverse slope defenses, based on Western Front combat experience. Lossberg's exposure to these reports may have played an important role in the development of his tactical thought.²³ Certainly he made extensive use of reverse slope defenses in the coming years.

There were about a dozen staff officers in Lossberg's section,²⁴ and as one might expect they usually ate dinner together. As their General Staff training emphasized operational expertise, they all had informed opinions on the military questions of the day. In particular, many of these officers criticized the current defensive doctrine of the German army. Falkenhayn favored a rigid defense of the front lines, holding every position in strength and to the last man. He enforced this policy by ruthlessly sacking officers who lost sections of the front line. Some of the younger officers at Mezieres favored a

more elastic and flexible defense, in particular Major (later Colonel) Max Bauer, Major Bussche, Captain Geyer and Captain Harbou.²⁵ An elastic defense would hold the front lines with a minimal number of troops, and allow them to retire during a major attack. Reserves kept beyond the range of effective artillery bombardment would then counterattack and retake the front line positions. Falkenhayn's program of rigid defense had proved satisfactory thus far in the war. The younger officers who criticized it worried about the increased British and French artillery production, however. Since a rigid defense involved packing troops into the front lines, heavier and longer artillery bombardments were bound to increase German casualties.²⁶

For his part, Lossberg remained a believer in the rigid defense of a line, believing it the only practical defensive tactic under combat conditions.²⁷ An elastic defense requires a higher level of training, discipline, and morale than a static defense. The foremost troops must make an orderly withdrawal under fire. Reserve troops must then counterattack at the precise moment when the attacking troops are most disordered from their advance. With the exception of Lossberg himself and a captain who had won the *Pour le Merite*, all the staff officers at Mezieres lacked combat experience. Lossberg was sure his junior officers overestimated the capabilities of field troops and underestimated combat difficulties:

... I often came upon over-confident opinions concerning the conduct and capabilities of troops, especially from the younger officers, which my front-line experiences strongly contradicted. From the beginning I openly and very strongly contradicted such ideas and thereby did much good.²⁸

Lossberg considered combat experience an essential component of an officer's development. Since his younger staff officers lacked such experience, he often sent them to the fighting front of the XVI Corps in the Argonne Forest. This action was indeed quite out of the ordinary, as the Operations Section in Mezieres did not have any staff duties which required such front-line exposure. As soon as Tappen heard of these expeditions he forbade them, much to Lossberg's disgust.²⁹ But Tappen's attitude was typical of the German army, not Lossberg's. Trained General Staff officers were too valuable to waste in front-line combat.

In his position at Mezieres, Lossberg also gained the confidence of Falkenhayn, which was certainly a factor in his subsequent career. Lossberg already knew Falkenhayn from his peacetime service. When Falkenhayn was in China from 1900 to 1903, Lossberg's family and Falkenhayn's family lived in the same house in Karlsruhe. While Lossberg was an instructor at the *Kriegsakademie* (1907-08), Falkenhayn refereed a war game for one of Lossberg's classes. During the 1908 maneuvers in Lorraine, both men served on the staff of the XVI Army Corps, Falkenhayn as Chief of Staff and Lossberg as the intelligence officer. Although

Lossberg criticized many of Falkenhayn's decisions as Chief of the General Staff, he also described him as a "very industrious, skillful worker with an exceptionally quick intellectual grasp."³⁰

Lossberg also knew Tappen from pre-war days, when Tappen was also an instructor at the *Kriegsakademie*. When Tappen left the *Kriegsakademie* to become operations officer of the XVII Army Corps, Lossberg took over Tappen's former subjects of tactics and military history. When Tappen went on the head the *2. Abteilung* of the *Grosser Generalstab* (which in wartime became the Operations Section), Lossberg became Tappen's successor as operations officer of the XVII Army Corps.³¹

Tappen and Lossberg did not get along. On May 5, 1915, the entire Operations Staff of the OHL Pless headquarters was out of telephone contact on a train to Berlin. On his own authority Lossberg issued some orders directly to Western Front armies, in order to relieve an emergency situation. This step technically overstepped the bounds of Lossberg's authority and infuriated Tappen. In retaliation Tappen ordered Lossberg not to question directly any Western Front army headquarters, which would have made Lossberg's staff work nearly impossible. Falkenhayn overruled Tappen's order as soon as he learned of it.³² Lossberg was never a great stickler for the procedures and formalities of command, so long as the job was done well. This approach would

show up in the course of Lossberg's later career as a defensive expert. He commented on his quarrel with Tappen as follows:

Colonel Tappen and I were of completely different natures. For me purely and simply practical action was important and on this basis I have myself had very good understanding with my superiors and subordinates all my life.³³

The German General Staff expected a high degree of independence from its officers, which Lossberg had certainly shown by issuing orders to Western Front armies on his own authority [that of the head of a branch office of the OHL]. Lossberg's superior, Tappen, thought Lossberg had overstepped his authority. The conflict between Tappen and Lossberg shows how important personalities were when officers like Lossberg exercised a great deal of discretionary authority.

Falkenhayn knew of the misunderstanding and suspicion between Lossberg and Tappen. When Lossberg became Chief of Staff of the Third Army Falkenhayn asked: "You are no doubt glad to leave von Tappen?"³⁴ Indeed, Lossberg soon received as much independent authority as he could have wished.

Lossberg's position at Mezieres made him intimately familiar with the tactical situation of every army on the Western Front. On September 12, 1915, both the Sixth and Third armies reported increased enemy activity on their fronts. Particularly worrisome was a systematic registration of enemy artillery, which usually heralded a heavy bombardment. On several occasions in September

the commander of the Third Army, General von Einem, discussed the anticipated offensive with Lossberg.³⁵ On September 22, 1915, the French began a prolonged artillery bombardment of the Third Army front. The Germans referred to such barrages, so characteristic of most Allied offensives, as *Trommelfeuer* or "drumfire." Massed artillery would fire for days without let-up. While these barrages were enormously destructive, they completely sacrificed the element of surprise. The German high command simply shifted its reserves to meet the new attack. For instance, after the *Trommelfeuer* began in Champagne, Lossberg persuaded Falkenhayn to shift the Third Army over to the control of the Army Group of the German Crown Prince, as that army group had more reserves available to it than Third Army's old controlling headquarters.³⁶

THE CHAMPAGNE BATTLES

The French infantry attack on the Third Army began on September 25, 1915. The Chief of Staff of the Third Army, Lieutenant-General von Hoehn, reported serious enemy serious enemy gains and requested permission for a voluntary withdrawal to positions in the rear. That same day Lossberg and Falkenhayn both rode in the same car to a meeting with Kaiser Wilhelm II. On the way Lossberg objected to the idea of a voluntary withdrawal. At the meeting with the Kaiser, Lossberg explained the serious situation of the Third Army but again protested against the notion

of voluntary withdrawal. According to Lossberg, his report "made a visibly strong impression on the Kaiser."³⁷

Falkenhayn then asked Lossberg to leave the room. After a short time Falkenhayn came out and addressed Lossberg: "So, my dear Lossberg, now we will be separated. His Majesty has appointed you Chief of Staff of the Third Army." Lossberg reported that "this completely surprising communication" deeply pleased him. For months it had been his "secret wish" to return to the front: "The office work at the OHL had in no way agreed with my thirst for action."³⁸

Lossberg took his appointment as a "special honor." All the other army chiefs of staff at that time were at least major-generals, while he was a colonel of two months seniority. The prospect of a return to "fresh air and soldiers" also pleased Lossberg.³⁹

It may be that Lossberg was not lobbying for the job of Third Army Chief of Staff when he denounced all plans for voluntary withdrawal. But he could have hardly done a better job if he had tried: Falkenhayn disliked withdrawals of any sort. This was widely known, most certainly to Lossberg. Lossberg's determination to hold the front line was certainly sincere, as the Champagne battles and the Battle of the Somme proved. It must have also been apparent that Lossberg was miscast in his role at Mezieres. In any case, Lossberg certainly owed his appointment to

Falkenhayn's personal influence. No matter how deeply moved he was, the Kaiser would not make such a major appointment except at Falkenhayn's request.

Lossberg later learned that Falkenhayn lost all confidence in Hoehn when the latter proposed a voluntary withdrawal. However, Falkenhayn softened the blow to Hoehn by explaining that the Chief of Staff of the Army Group of the Crown Prince was a younger man, with whom Hoehn might find it difficult to work. Falkenhayn then had the Kaiser appoint Hoehn, a Bavarian, commander of the Second Guards Division, a Prussian unit with very high social prestige. Lossberg commented that this was "certainly a great honor for a Bavarian general."⁴⁰

Thus Falkenhayn used the somewhat archaic Guard units to promote flexibility in General Staff appointments. Hoehn's outright dismissal might prove awkward. All that mattered was to reduce his operational influence, which Falkenhayn certainly did. There was no comparison between the influence wielded by an army chief of staff and a division commander, no matter what the social prestige of the division.

Lossberg lost no time reaching his new billet. He learned of his new office about noon. By three o'clock that afternoon he had taken leave of Mezieres and driven to Third Army Headquarters, at the French town of Vouzieres. On the drive to Vouzieres he formulated his plans for the coming campaign:

My determination was unshakable, to hold firmly to the new positions created by the incursion [the French attack] and to fight for every scrap of ground. A voluntary withdrawal completely contradicted my views and also my battle experience.⁴¹

As Lossberg entered Third Army headquarters, the telephone rang. The commander of the VIII Reserve Corps wanted to know whether his corps should begin that night the withdrawal planned by Hoehn. On his own authority Lossberg cancelled the withdrawal, promising to confirm the decision with the Third Army commander as soon as possible. Lossberg was only a colonel, and the corps commander was a lieutenant-general. Yet such was the power of Lossberg's position as Chief of Staff of the Third Army that the corps commander accepted the last minute change.⁴²

The operations officer of the Third Army, Major von dem Hagen, now greeted Lossberg. As it so happened, Lossberg knew him from his days as a lieutenant in Berlin. Since Lossberg's predecessor had already left Third Army headquarters, Hagen briefed Lossberg on the Third Army's situation. It was not encouraging: eighteen French divisions opposed five German divisions; the French held a three to one superiority in artillery.⁴³

Lossberg then walked into the next room and talked with the commander of the Third Army, *General der Kavallerie* von Einem. Einem immediately approved Lossberg's cancellation of the order to withdraw the VIII Corps. As Lossberg later learned from Einem,

his predecessor Hoehn had proposed the withdrawal of the VIII Corps 3-4 kilometers without even the knowledge of Einem.⁴⁴ Lossberg then asked for and got full power (*Vollmacht*) to visit the front immediately and change troop dispositions without Einem's prior approval.⁴⁵

Several officers on the headquarters staff were senior to Lossberg, including two major-generals and a senior colonel. That evening Lossberg asked these senior officers whether they could work under a chief of staff who was their junior. All said they could and cooperated with Lossberg throughout the the course of the battle.⁴⁶ Of course it was probably clear to them that if a conflict arose, they and not Lossberg would have to leave.

Sortly before 4:00 PM, September 25, Lossberg reached the front lines.⁴⁷ Between that time and dusk, he toured the battlefield, observing the terrain and talking to divisional and corps commanders on the spot. The French had carried the original German front line, which lay on the forward crest of a ridge. The Germans still had a tenuous hold on their second trench line, which lay some distance below the crest of the ridge. Lossberg decided to base the defense on this reverse slope, as the French artillery could not accurately bombard this line. The crestline hid it from the view of the French ground observers, and aerial observation was only a poor substitute. By contrast, the German artillery could accurately bombard the French infantry attacks, as

its artillery observers had an unimpeded view from their side of the reverse slope. Thus French infantry attacks coming over the crestline would encounter both short-range infantry fire and observed artillery fire. If the French managed to take a section of the German front line, the garrison of the next German trench line would immediately counterattack, again with the assistance of their own observed artillery fire.

The practical effect of Lossberg's reverse slope defense scheme was that both the German infantry and the German artillery working together would fight the French infantry--a French infantry largely isolated from its artillery support. Without ground observers, the French artillery could fire nothing except relatively inaccurate pre-attack bombardments, for fear of hitting their own troops.⁴⁸ Lossberg had applied the principle of combined arms to the specific situation facing him. In the First World War this meant cooperation of the infantry and artillery, since cavalry was obsolete. Lossberg ensured such cooperation for his own troops, while denying it to the enemy.

Such were the advantages of the position which Hoehn had wanted to abandon at the beginning of the battle. Although Lossberg planned to hold the front line trench at any costs, he did not want to pack it with troops and cause unnecessary losses. Instead he relied on counterattacks to keep the front line intact.⁴⁹ By the evening of the first day, Lossberg was so sure

of the course of the coming battle that he ordered huts built in the woods behind the rear positions to house the troops during the coming winter.⁵⁰ The course of events justified his optimism. Heavy French attacks continued into the winter, but the combination of reverse slope defense and counterattacks assisted by observed artillery fire threw back every assault.⁵¹

Lossberg always bore in mind that the commander-in-chief of the Third Army bore the ultimate responsibility for every order. So for all important orders he consulted with Einem, who almost always supported his recommendations. Important orders always carried the signature of the commander-in-chief.⁵² But it is clear that the initiative for many of Third Army's measures came from Lossberg. Lossberg knew what to do in Third Army's difficult situation. So long as Lossberg retained the confidence of his superiors, he could put his ideas into action.

Lossberg's predecessor Hoehn failed on two counts. He failed to recognize the tactical advantages of the reverse slope position, and could offer no more inspired solution to the Third Army's tactical problem than retreat. Second, Hoehn lost the confidence of both Einem and Falkenhayn. He disregarded Falkenhayn's dislike of voluntary retreats and failed to consult with Einem. In this instance Falkenhayn's position on retreats proved tactically correct. Retreat would have meant abandonment of an advantageous tactical position. But Falkenhayn did not find

the tactical solution. He appointed Lossberg as Third Army Chief of Staff, who did. As it turned out, simply by changing Third Army's chief of staff, Falkenhayn avoided an embarrassing retreat and frustrated the major French offensive effort for the latter half of 1915.

Lossberg regulated the internal workings of his own staff according to certain principles. All his staff officers had immediate personal access to him [ie., did not have to go through his Quarter-Master General], which he felt made "rapid and unerring" actions possible. At the same time he regulated the consistency of orders "with a strong hand." Lossberg believed that "in periods of heavy battle above all systematic action and detailed work are necessary." He himself ordinarily got very little sleep.⁵³

THE BATTLE OF THE SOMME

As the battles in the Champagne died down in the winter of 1915/1916, increased enemy activity became evident on the Somme front. As early as February 1916, the German Second Army in that sector noticed construction of numerous barracks opposite their front. The number of British division facing the Second Army steadily increased.⁵⁴ Finally, on June 24, 1916, the *Trommelfeuer* began on the Somme front, providing definite warning of the great infantry attack finally launched on July 1. The surviving defenders inflicted about 60,000 casualties on the British.

Nevertheless on July 2, the Chief of Staff of the Second Army, Major-General Gruenert, recommended a voluntary withdrawal of his army. Falkenhayn visited Second Army headquarters that day. Even though the Second Army was under heavy pressure, he did not agree with the idea of withdrawal.⁵⁵ That evening about 11:30 Lossberg received a call from the personnel office of the General Staff. Falkenhayn had appointed him the new Chief of Staff of the Second Army.⁵⁶ Perhaps Falkenhayn hoped he could hold the line once again simply by changing the army chief of staff. As Lossberg later learned, Gruenert lost his job for proposing withdrawal.⁵⁷

Lossberg arrived at Second Army headquarters by 5:00 AM, July 3, barely six and a half hours after learning of his new appointment. As his predecessor Gruenert had already left, the operations officer briefed Lossberg. By 6:00 AM Lossberg reported to the commander of the Second Army, General Fritz von Below, who Lossberg already "knew and respected." Below gave Lossberg full power (*Vollmacht*) to regulate unit dispositions, particularly the reinforcements, which arrived slowly thanks to the Verdun battle.⁵⁸

Lossberg quickly left to visit the front lines. He immediately grasped the great tactical value of certain hills for artillery observation.⁵⁹ In this respect his conduct of the battle resembled that of the previous Champagne battles. Some of

the troop commanders he visited already knew Lossberg from when their units served in the Champagne battles. Apparently Lossberg already had a reputation in the German army:

I [Lossberg] had the impression [while touring the battlefield on July 3] that the troop leaders welcomed my appointment as Chief of Staff of the Third Army. They seemed to have firm confidence in my energy, with which I had already mastered the difficult position in the fall Champagne battles.⁶⁰

Late in the evening of July 3, Lossberg reviewed his field observations and conclusions with Below. Both agreed that the front line must be held to the last man. If a section were lost anyway, either an immediate counterattacks *Gegenstoss* or (as circumstances warranted) a "methodically planned" counterattack *Gegenangriff* would retake the section. Below issued that night orders forbidding voluntary abandonment of ground. Lossberg and Below also discussed plans for a *Gegenangriff* to recapture ground lost on July 1st and 2nd. This attack would take place as soon as a sufficient quantity of assault divisions, artillery, and ammunition became available. The prerequisites for the attack did not ever actually materialize during the Battle of the Somme, chiefly due to the continued fighting around Verdun.⁶¹

Below and Lossberg worked exceptionally well together. Below was a very senior officer, who in his long years of service had become intimately familiar with every aspect of the General Staff system. Lossberg praised his "great understanding for the work of

the General Staff" and described their cooperation of "frictionless."⁶²

Below actually accompanied Lossberg on his journeys to the front-line area. After July 5 he and Lossberg visited the front every day except for days of heavy fighting. Then it was best to stay at headquarters and process phone messages. Below and Lossberg usually left about 7:30 AM, by which time Lossberg had already been up for several hours and prepared the morning report to the OHL. The commander and his chief of staff usually drove first to the area of the previous day's heaviest fighting. There they talked to unit commanders. These discussions formed the basis for the day's Second Army orders (usually dealing with the flow of reserves). Lossberg dictated the required orders on the spot, and relayed them to army headquarters by telephone. According to Lossberg, "The leaders on the battlefield gained through this type of quick action complete trust in the Second Army High Command."⁶³

In this way Lossberg reversed the usual procedure: he issued orders from the front to the rear, rather than from the rear to the front. No wonder the front-line troops came to trust the Second Army command. British or French troops were lucky if they saw a general or high level staff officer anywhere near the front: Below and Lossberg visited it every day.

On July 19 the OHL divided the Second Army into two armies, the First Army and the Second Army. Lossberg and Below commanded that fraction of the old Second Army which became the new First Army. The change was administrative in nature. Second Army had simply grown too large, as additional troops poured in during the battle. The heaviest fighting remained on the First Army [old Second Army] front.⁶⁴

On August 28, 1916, Lossberg learned that von Hindenburg had replaced Falkenhayn as Chief of the General Staff, with Ludendorff as his chief assistant. On August 31, Lossberg wrote Falkenhayn a long letter. He recalled that Falkenhayn had appointed him Chief of Staff to the Third, Second, and First armies, and thanked Falkenhayn for the confidence thereby shown in his ability.⁶⁵ [This sense of gratitude did not stop Lossberg from criticizing Falkenhayn in his memoirs, often severely.] Also on August 31, Second Army learned that the new OHL leadership had broken off the attacks at Verdun. This considerably increased the flow of reserves to the Somme Front.⁶⁶

The new OHL leadership (like Falkenhayn before it) soon recognized Lossberg's tactical abilities. At the meeting of army commanders and army chiefs of staff the new OHL held at Cambrai on September 8, 1916, Lossberg reported on the situation of the First Army. Ludendorff expressed his complete support for Lossberg's conduct of the battle, and also provided more tangible support.

Besides breaking off the attacks on Verdun and increasing the flow of relief divisions, Ludendorff shifted artillery to the First Army front.⁶⁷ The artillery transferred was sufficient to halve the defensive barrage frontage of each battery, thus effectively doubling the intensity of fire.⁶⁸

LOSSBERG AND THE CHAIN OF COMMAND

Lossberg's management of the Battle of the Somme did not consist solely of expert infantry-artillery coordination and handling of reserves. In the midst of the battle he introduced an innovation which eventually became official army policy. He found that it took 8-10 hours for messages to travel between division headquarters and the front line, and just as long to get back again.⁶⁹ The "front line" was often just a group of shell holes. There were no regular communication trenches, and the whole area was under constant artillery fire. Consequently Lossberg gave battalion commanders full control over their own sector of the front, so that they hardly needed to consult division headquarters at all. As G. C. Wynne puts it:

They [front-line battalion commanders] were given as full a control over their sector of the battle-area as has a captain over his ship, and their decisions were to be accepted, by superiors and subordinates alike, as final and unquestioned while the battle lasted.⁷⁰

The front-line battalion commander also controlled any reinforcements committed to his sector, regardless of the

relieving commander's rank or seniority. This procedure ensured continuity of battlefield control. It also exploited the original batttalion commander's intimate knowledge of his sector and the current military situation. The regimental commander now did no more than keep reinforcements close at hand and move supplies.⁷¹

The role of division commanders resembled that of battalion commanders. They controlled everything that went on in their sectors without interference from corps headquarters. When reinforcing divisions arrived, the commander of the original defending division controlled them, not their own commanders. Like regimental headquarters, the corps headquarters moved up reinforcements and kept supplies moving.⁷² The divisional commander had a central role in the command syatem:

It was, however, on the divisonal commander that the fullest responsibility for the conduct of the battle rested. He was given control of all available forces in his sector, including field and heavy artillery, ... His chief means of influencing the battle was by ensuring that both his own reserves and those placed at his disposal by higher authority were allotted and sent forward to subordinate commanders at the right place and time, but it was left to those subordinates to make local arrangements for the employment of those reserves on the battlefield as the situation demanded. It was, however, the divisional commander, acting on the reports from his front battalion commanders, who decided the course of the battle. There was in fact, no chain of command left, as it had only those two links.⁷³

The German army made Lossberg's innovation official doctrine.

The official manual on defensive warfare, The Principles of

Command in the defensive Battle in Position Warfare, clearly stated:

Prior to the battle, the counterattack division will be under the orders of Corps or Army headquarters. If engaged as a whole or, as will generally be the case, in small bodies, they will be placed under the orders of the commander of the battle sector ... He [the commander of the counterattack division] will only retain control of his division in action when it has to be led forward, as a complete formation, to the counter-attack, or for some personal reason. But even in these circumstances, control of the fighting in his sector will generally be retained by the commander of the division in line, regardless of any question of seniority, and both the division in line and the counter-attack division will consequently, be under his undivided command.⁷⁴

Lossberg's reliance on immediate counterattacks to hold the front line absolutely required independent action from lower level commanders. A *Gegenstoss* or "counter-thrust" capitalized on the attacker's confusion and disorganization just after the attack. Delay while higher headquarters approved the counter-thrust only gave the attacker time to consolidate the new position. The official German defensive manual described the situation as follows: "The difficult situation in which the enemy now finds himself after an attack must be utilized without waiting for further orders." [emphasis is original]⁷⁵

Official German defensive doctrine thus combined Lossberg's breakup of the chain of command and the quick reactions the *Gegenstoss* required of low level commanders. It produced a defensive system which reacted to emergencies [ie., enemy attacks]

in the shortest possible time. By contrast, the British army adhered to a rigid chain of command for its offensives. Information flowed upward from company to battalion to brigade to division to corps; orders flowed downward from corps to division to brigade to battalion to company.

On the first day of the Battle of Arras (spring 1917), the British infantry broke through the first line of German defenses on an eleven mile front. Then the British command system took over:

Thanks to the chain system of command from corps headquarters downward, about 90,000 British infantry waited throughout the night for the respective Corps orders to permeate to battalions and companies, and they spent the greater part of the following day attacking and enveloping, according to those orders written the previous evening, positions which the German had evacuated overnight except for a few rearguard patrols.⁷⁶

The British command system functioned at Arras. It had not broken down. Orders went from headquarter to headquarters, and troops eventually obeyed them. But by that time the orders were hopelessly out of date. When they attacked a German defensive position whose command system reacted much more quickly, the British were at a grave disadvantage. At Arras, despite command errors which had kept reserve units too far to the rear, German reinforcements still arrived in time to prevent a breakthrough.⁷⁷

During the great Allied offensives, the German defenders faced the same communications difficulties as the British:

artillery fire cut phone lines, churned up ground and slowed down messages. Lossberg adjusted to these battlefied conditions by breaking up the chain of command as much as possible. At least since the time of the elder Moltke, the German army had relied on the initiative of its senior commanders. This action extended the German army's reliance on the initiative of unit commanders to a level at least as low as the battalion commanders.

THE BATTLE OF ARRAS

By the end of March, 1917, British offensive preparations in the Arras region were quite noticeable, and the OHL began to expect an attack there.⁷⁸ The British offensive began on April 9. Lossberg did not think the attack would succeed, as he knew there were numerous reserves behind the Sixth Army front, which garrisoned the Arras sector. However, these reserves were not put in motion soon enough and came to the battle piecemeal. As a result the British captured Vimy Ridge and broke into Sixth Army's forward positions on a wide front.⁷⁹

At about 10:00 AM on April 11, Lossberg received a telephone call from Ludendorff. The Kaiser had appointed Lossberg Chief of Staff of the Sixth Army, no doubt at Ludendorff's suggestion. The Sixth Army was in a difficult position, but Ludendorff trusted that Lossberg would "master the situation." Lossberg asked Ludendorff for *Vollmacht*, full power to make decisions based on his personal assessment of the situation. Ludendorff immediately

agreed. Lossberg also asked Ludendorff to communicate this grant of power to the Sixth Army commander, his army group commander, and the army group chief of staff (ie., all of Lossberg's superiors). Lossberg planned to visit the Arras front immediately. Accordingly he asked Ludendorff to tell the Sixth Army commander, Colonel-General Freiherr von Falkenhausen, that he would not arrive at Sixth Army headquarters until that night. Ludendorff agreed to all of Lossberg's rather extraordinary requests.⁸⁰

Lossberg clearly asked for more power than the traditional role of an army chief of staff ordinarily provided. He really wanted *de facto* command of the Sixth Army. That is very nearly what he got, since Ludendorff informed all of Lossberg's nominal superiors that Lossberg had been given *Vollmacht*. It may be that doctrinal confusion in the German army prompted Lossberg's insistence on such a far-reaching grant of power. Lossberg probably wanted to freely ignore the German army's developing defensive doctrine, as he still distrusted the idea of elastic defense.⁸¹

Ordinarily, one might think Ludendorff would not want put someone as opposed to the army's new doctrine in such an important position as Lossberg received. But without a doubt, Lossberg was the German army's practical expert on the conduct of defensive battles, with a proven record of success. Then again, Ludendorff

from the beginning had sought not so much to lay down the law on defensive doctrine as to encourage the development of best practice. Lupfer comments on Lossberg's appointment to run the defensive battle at Arras as follows:

... although von Lossberg, it should be remembered, had been a critic of the fluid nature of the elastic defense-in-depth, Ludendorff called upon von Lossberg to rectify the situation at Arras and showed that disagreement did not destroy mutual confidence. For his part, von Lossberg *did* apply the elastic principles wherever local terrain allowed, despite his earlier skepticism of the "elastic" aspects of the doctrine. The enlightened tacticians of the German Army tolerated compromise when it was inspired by good judgement.⁸²

Within a few hours Lossberg toured the Arras battlefield, paying as usual close attention to the question of artillery observation. He immediately perceived that on this battlefield the English held a considerable advantage in artillery observation.⁸³ Their observers on Vimy Ridge overlooked the entire German forward defensive zone. This would make a purely defensive posture in the German forward zone difficult and costly. Lossberg decided instead to garrison the front zone lightly, allow the garrison to retreat during an attack, and then counterattack with strong reserves. The counterattack would go forward with the help of German observed artillery fire. Once the counterattack began, the English artillery would find any intervention in the battle difficult. They could not fire without hitting their own troops, closely engaged with the counterattacking Germans.

Lossberg's plan contradicted all his previous convictions about fighting for every scrap of ground. He himself was fully conscious of the irony. But he felt that the particular circumstances of this battle had to determine his actions, not pre-conceived ideas.⁸⁴ The German army's greatest opponent of the elastic defense was the first to put the idea into practice.⁸⁵

When Lossberg finally arrived at Sixth Army headquarters, Falkenhausen approved his plans and gave him full freedom of action.⁸⁶ Under the circumstances, he could hardly do anything else. Within 48 hours Lossberg and his staff organized 15 divisions into an elastic defense in depth 18 miles long and 10 miles deep.⁸⁷ Thus it was Lossberg who actually implemented (and very quickly) the new elastic defense doctrine--in the middle of a great battle. On the basis of his previous experiences Lossberg reckoned that the British would take 4-5 days to prepare another major attack. Actually the next attack came about 12 days after the first, on April 23--plenty of time for adequate defensive preparations.⁸⁸

From the German perspective, the remainder of the Arras battle revolved around certain key artillery observation points. Sixth Army headquarters expected the British to make the capture of such points the focus of their offensive. But they did not:

No notice was taken either by British G. H. Q. [General Headquarters] or army commanders of the importance of artillery observation positions, although they provided the key not only for making a

great success of the battles of the Scarpe [Arras] but also for the capture of the Passchaendaele Ridge a few months later. Instead they continued to attempt to overrun the German line on wide frontages regardless of ground conditions.⁸⁹

This is the same phenomena Bidwell and Graham commented on in their work Firepower. The British did not fight for key artillery observation positions because the British General Staff did not conceive of the battle as an integrated infantry/artillery battle. Perhaps the only reason the Germans did better was that they had Lossberg on the scene. But Lossberg did not just happen to be on the scene. The OHL had sent him there, just as it had sent him to the Champagne and the Somme. Lossberg was the German army's defensive expert.

The German losses of the first day at Arras caused Ludendorff and his staff to question the validity of the new elastic defense doctrine. It soon became clear that the initial setbacks were due to improper handling of the reserves, not any defects in the doctrine itself. Ludendorff concluded that " ... the principles laid down by General Headquarters were sound. But the whole art of leadership lies in applying them correctly.⁹⁰ In other words, it took experts like Lossberg to make doctrine actually work.

PASSCHAENDAELE

By May 1917 it was clear to Lossberg's staff that the English had shifted their strength northwards to the Fourth Army front.

It quickly became apparent that the British were gearing up for a massive offensive in Flanders. On June 12, 1917, Lossberg became Chief of Staff of the Fourth Army. The former Fourth Army Chief of Staff took over Lossberg's job as First Army Chief of Staff.⁹¹ Obviously Lossberg's predecessor was not in disgrace; Ludendorff just wanted Lossberg on hand when the offensive began.

On June 13 Lossberg reported to Fourth Army headquarters. He already knew the commander of Fourth Army, General Sixt von Armim, who served as a corps commander during the Somme battles.⁹² For the first time Lossberg had time to organize the defense *before* an enemy assault. From June 13 until the English attack began on July 31, he organized an elastic defense in great depth.⁹³

A key feature of his defensive system was a line of counterattack divisions 10-15 miles behind the front-line divisions. Lossberg intended that the front line division troops should indeed fight in their positions to the last man. He considered orderly withdrawal impossible, considering the amount of artillery the British had available. However, the defenders could really count on a counterattack before the attack submerged them. The counterattack divisions were held in readiness immediately behind the front lines for that sole purpose.⁹⁴ Thus Lossberg resolved the old argument over whether it was best to fight in or behind the front lines:

On further analysis it will be found that the Flandern Position [Lossberg's Fourth Army defensive

system] answered that vexed question which had so long perplexed the German General Staff as to whether the defensive battle should be fought in or behind the foremost line. The reply it had given was to fight in both. The front divisions had fought in and for the foremost line, and by doing so they had succeeded in breaking up and delaying the waves of the assault; the Eingreif [counterattack] divisions had fought it behind the foremost line, and their objective had been to recapture the whole position. So the heated discussions between Colonel von Lossberg and the junior members of the Operations Section at OHL in Mezieres in the summer of 1915 had ended in July 1917 in a combination of two apparently irreconcilable points of view.⁹⁵

Naturally the prospect of providing a double row of divisions for the Flanders front did not thrill Ludendorff, thinly stretched as the German army was. Nevertheless he did provide the material support needed for Lossberg's defensive scheme:

I [Ludendorff] need not say that from the first the Fourth Army was as well supplied as possible with artillery, ammunition, aircraft and other weapons; and Colonel Lossberg, who always wanted a lot, was in the end satisfied with his army group and with me.⁹⁶

The Germans held the line. The English finally broke off their assaults on November 17, in Lossberg's words "totally exhausted."⁹⁷

The German army leadership recognized Lossberg's role in the development of defensive tactics. A summary of the Arras fighting published by the General Staff stated that Lossberg deserved "the credit for having given practical shape to the organization of the new defensive battle in all its details."⁹⁸ Within the German

army, Lossberg's prominence generated at least some resentment. Colonel Wilhelm Wetzel, Ludendorff's Chief of the Operations Section, remarked on June 11, 1917, that Lossberg's appointment as chief of staff of the threatened Fourth Army would make it look like there was only one General Staff officer in the German army who could conduct a defensive battle.⁹⁹ Apparently Ludendorff did not worry about the self-esteem of the rest of the General Staff when he selected Lossberg. No doubt there were other General Staff officers who could have handled the job. But there were none with Lossberg's proven expertise.

-- Notes --

1. See maps in Timothy T. Lupfer The Dynamics of Doctrine: The Changes in German Tactical Doctrine During the First World War, Leavenworth Papers, No. 4 (Fort Leavenworth: Combat Studies Institute, U. S. Command and General Staff College, 1981), p. 5, p. 31. For the extent of the gains at Passchaendaele, see map in Fritz von Lossberg, Meine Taetigkeit im Weltkrieg, 1914-1918 (Berlin: E. S. Mittler & Sohn, 1939), p. 305.

2. Edgar Graf von Matuschka, "Organisationsgeschichte des Heeres 1890 bis 1918," in Deutsche Militaergeschichte in sechs Baenden 1648-1939, vol. 3, Section 5, produced by the Militaergeschichtliches Forschungsamt (Herrsching: Licensed edition for Manfred Pawlak Verlagsgesellschaft mbH, 1983), p. 249-250.

3. Lupfer, Dynamics of Doctrine, p. 4.

4. Ibid., p. 15.

5. Ibid., p. 5.

6. Ibid., p. 3.

7. Alistair Horne, The Price of Glory: Verdun 1916, (London: Macmillan, 1962; reprint ed., New York: Penguin Books, 1981), p. 42-49.

8. Lupfer, The Dynamics of Doctrine, p. 7; G. C. Wynne, If Germany Attacks: The Battle in Depth in the West (London, Faber and Faber, 1940; reprint ed., Westport, Greenwood Press, 1976), p. 101, p. 103.

9. Lupfer, The Dynamics of Doctrine, p. 8.

10. Erich Ludendorff, Ludendorff's Own Story, 2 Vols. (New York: Harper & Brothers Publishers, 1919), 1:324; cited in Lupfer, Dynamics of Doctrine, p. 9.

11. Lupfer, Dynmaics of Doctrine, p. 8.

12. Ibid., p. 9.

13. See description in Lupfer, The Dynamics of Doctrine, p. 13-19.

14. Ibid., p. 12.

15. Ibid., p. 22.

16. Ibid., p. 24.

17. Ibid., p. 22.

18. See Lupfer, Dynamics of Doctrine, p. 8-11.

19. Fritz von Lossberg, Meine Taetigkeit im Welkriege 1914-1918 (Berlin, E. S. Mittler & Son, 1939), p. 1-126 passim.

20. Ibid., p. 126 and p. 167.

21. Wynne, If Germany Attacks, p. 84.

22. Reichsarchiv, Der Weltkrieg 1914-1918, 14 vols. (Berlin: E. S. Mittler & Son, 1925-1944), 9:50. Hereafter referred to as German Official History.

23. Wynne, p. 90.

24. Ibid., p. 84.

25. Ibid., p. 89.

26. Ibid., p. 88.

27. Ibid.

28. Lossberg, Meine Taetigkeit im Weltkrieg, p. 131.

29. Ibid., p. 152.

30. Ibid., p. 126.

31. Ibid., p. 127.

32. Ibid., p. 151-152.

33. Ibid., p. 152.

34. Ibid.

35. Ibid., p. 162.
36. Ibid., p. 165-66.
37. Ibid., p. 166.
38. Ibid., p. 166-67.
39. Ibid., p. 168.
40. Ibid., p. 167.
41. Ibid., p. 168.
42. Ibid.
43. Ibid., p. 169.
44. Ibid.
45. Ibid., p. 172.
46. Ibid., p. 173.
47. Ibid., p. 172.
48. Wynne, If Germany Attacks, p. 92-94.
49. Ibid., p. 92.
50. Ibid., p. 94.
51. Ibid., p. 97.
52. Lossberg, Meine Taetigkeit im Weltkrieg, p. 174.
53. Ibid.
54. Ibid., p. 215.
55. Ibid., p. 213.
56. Ibid., p. 214.
57. German Official History, 10:355. See also Lossberg, Meine Taetigkeit im Weltkrieg, p. 220.
58. Lossberg, Meine Taetigkeit im Weltkrieg, p. 44.

59. Ibid., p. 220-21.
60. Ibid., p. 220.
61. Ibid., p. 222.
62. Ibid., p. 223.
63. Ibid., p. 224.
64. Ibid., p. 224-25.
65. Ibid., p. 247.
66. Ibid.
67. Ibid., p. 251.
68. Ibid., p. 268.
69. Wynne, If Germany Attacks. p. 125.
70. Ibid.
71. Ibid.
72. Ibid., p. 126.
73. Ibid.
74. Chief of the General Staff of the [German] Field Army, Manual of position Warfare for all Arms, Part 8: "The Principles of Command in the Defensive Battle in Position Warfare," translated by the Intelligence Section of the American General Staff (Berlin: Issued originally by the Chief of the General Staff of the Field Army, 1917; English translation issued by the American General Staff, 27 October, 1918), p. 6.
75. Ibid., p. 11.
76. Wynne, If Germany Attacks, p. 196.
77. Ibid., p. 183.
78. Lossberg, Meine Taetigkeit im Weltkriege, p. 279.
79. Ibid., p. 280.

80. Ibid., p. 280-81.
81. Wynne, If Germany Attacks, p. 200.
82. Lupfer, The Dynamics of Doctrine, p. 29-30.
83. Lossberg, Meine Taetigkeit im Weltkrieg, p. 283.
84. Ibid.
85. Wynne, If Germany Attacks, p. 206.
86. Lossberg, Meine Taetigkeit im Weltkrieg, p. 284.
87. Wynne, If Germany Attacks, p. 213.
88. Lossberg, Meine Taetikeit im Weltkrieg, p. 284.
89. Wynne, If Germany Attacks, p. 242.
90. Ludendorff, Ludendorff's Own Story, 2:222.
91. Losssberg, Meine Taetigkeit im Weltkrieg, p. 293.
92. Ibid., p. 294.
93. Ibid., p. 295.
94. Wynne, If Germany Attacks, p. 291.
95. Ibid., p. 301-302.
96. Ludendorff, Ludendorff's Own Story, 2:104.
97. Lossberg, Meine Taetigkeit im Weltkrieg, p. 309.
98. Wynne, If Germany Attacks, p. 213.
99. Albrecht von Thaer, Generalstabsdienst and der Front und in der O.H.L.: Aus Briefen und Tagebuchaufzeichnungen 1915-1919, edited by Siegfried A. Kaehler (Goettingen: Vandenhoeck & Rupprecht, 1958), p. 125-26.

CONCLUSIONS

One of the ways the German army differed from other armies was its highly developed sense of the operational level of war. This concentration on operations had its origin with the elder von Moltke. The work of the German General Staff over two generations had only strengthened and extended this emphasis on operations, nor did World War I force the German General Staff to give up this emphasis on operations. The General Staff began the war by seeking an operational conclusion in the West. When that failed, it went on the strategic defensive in the West and sought operational decisions in the East, where thinner force ratios permitted a much greater degree of maneuver. When the German army returned in strength to the Western Front in 1918, the General Staff under Ludendorff again sought operational breakthroughs. In this they arguably succeeded or did not succeed, depending on where one draws the line between an "operational" and a "tactical" breakthrough. Certainly the Germans achieved the latter, which no one else had done yet on the Western Front. But this was not enough to win the war for them, against the exhaustion of their own forces and people and the arrival of substantial American forces. Perhaps most importantly, the Allies had also improved their battle technique over that of 1917, as Bidwell and Graham

have pointed out.¹ If the the OHL's offensive fury of the spring and summer of 1918 put the German army on its last legs, the Allied (particularly British) offensive tactics of "The Hundred Days" in 1918 provided the offensive punch to finish the Germans off.

There is one exception to the German pattern of seeking a decision by operational means. That was Verdun. Verdun was the battle where the Germans (or rather Falkenhayn) sought to deliberately fight a battle of attrition. But Verdun was an anomaly. It did not set a pattern for German offensives. The reason is fairly clear: Germany could not afford a battle of attrition, being the power with the more limited manpower resources. Certainly a battle of attrition never attracted Falkenhayn's successor's at the OHL, Hindenburg and Ludendorff.

The fact that the term or the concept of operations did not enter the Anglo-Saxon military vocabulary until very recently testifies to the relative neglect of this concept in armies other than the German. Certainly there was nothing to keep the British or the French from reading the elder Moltke's writings on the subject, and we know that they did so. But the concept did not quite set in in the other armies. It did not form a basic element in the thinking of higher level officers, as it did in the German.

This may have had positive effects in terms of the Allied direction of the strategic level of war. The German General Staff

seems to have had a predilection for seeing an operational plan of campaign as the solution to all strategic problems. One symptom of this was a tendency to always look at the short term, because that was how long it would take to wage a victorious operational campaign. The Germans invaded France through Belgium, accepting the entrance of Britain into the war because the campaign to defeat France would be over before the British could make their weight felt. The German army leadership lobbied for unrestricted submarine warfare on the grounds that the submarine campaign would be over before the United States could make its weight felt. After the Russian defeat in 1917, the German leadership rejected the idea of a defensive in the West leading to a compromise peace that would protect German gains in the East. Instead they opted for an all-out offensive in the West to decide the war in one swift campaign ... before the United States can make its weight felt.

Weisungsfuehrung was a corollary to the German concept of operations. It was the operational plan which provided a framework in which the subordinate exercised initiative. The world is more familiar with the concept of *Weisungsfuehrung* through its successor concept of *Auftragstaktik*, usually translated as "mission orders." As we have seen, the *Weisungsfuehrung* in 1914 was very much a matter for the higher levels of command--from corps upwards. Everyone else would deal

in direct orders. In the course of the war, the use of leadership by directives extended downwards in the German army. The Germans had entered the war with the idea that battalion commanders could command their troops under fire by means of shouted orders.

Modern firepower soon proved the futility of such notions. One of the most effective ways of leading on the battlefield was to outline a mission to junior officers and even individual soldiers and have them carry it out as best they could. The tactical environment had come to resemble the operational environment: difficulty of communications, uncertainty, a premium on adaptation to circumstances while adhering to at least the spirit of a general plan. The Germans worked out the concept and term of *Auftragstaktik* after World War I, in the general sorting out of the World War I experience which occupied so much of the *Reichswehr's* time.²

Weisungfuehrung was always a means to an end in the German army. Even the elder von Moltke had been willing to intervene directly in the decisions of subordinates if the situation demanded. In this work, we have seen two cases in which the Germans consciously violated the general principle of the independent initiative on the part of subordinate commanders. In one case, the Germans curtailed the independence of artillery commanders to insure effective, coordinated artillery bombardments. In another, Lossberg's system of assigning control

of defensive sectors to battalion and divisions effectively cut regimental and corps headquarters out of the chain of command, reducing them to administrative support headquarters. In addition, the commanders of the defensive sectors controlled any unit entering their sector, regardless of the unit commander's rank.

With trench warfare, there was always a good phone connection between the OHL and the various army commands, because the front stayed in one place for a long time. This often led to direct meddling on the part of the OHL in the affairs of armies (bypassing the army groups) and even corps (bypassing the armies). Rosinski notes that "Ludendorff himself was the worst offender" in this matter.³ On the other hand, Ludendorff did give a great deal of leeway to individuals whose capabilities he trusted, as the example of Lossberg shows.

Another notable aspect of the German command system towards the end of the war was a "hypertrophy" of the General Staff system, as Rosinski puts it. The good telephone net allowed staff officers to talk to each other at will, and they formed a network which often bypassed the commanders. It also became common to replace the chief of staff and not the commanding general when a unit performed poorly in battle.⁴ A similar rise in the importance of staff as opposed to command functions occurred in all the armies of the First World War. Under conditions of trench

warfare, there was less need to make rapid decisions, more need for detailed planning and accumulation of munitions and supplies. Good telephone lines helped "staff channels" to function. The process undoubtedly went further in the German army, as the General Staff began the war with incomparably higher prestige.⁵

Whether these developments had any bad effects on the leadership of the German army is not clear. After all, *Weisungsfuehrung* had evolved in part to ameliorate the effects of bad communications. If communications were good, there was perhaps less call for it. Then again, *Weisungsfuehrung* had evolved as an aid to the implementation of operational plans. In defensive trench battles, or even the 1918 offensives which involved enormous and detailed preparations just to achieve a tactical breakthrough, there was less call for free-wheeling operational leadership. These were battles that called for administration more than they called for operational panache. As far as the hypertrophy of the German General Staff went, some of the commanding generals bypassed by the "staff system" probably deserved to be bypassed. Then again, exerting some control over obstreperous Prussian (later German) generals had always been one of the main functions of the Prussian (later German) General Staff. This was not necessarily well publicized, but it was there to see for anyone who looked.

Still, the norm for the German army remained independence of initiative for subordinate commanders and the leading role of the commander over the staff. Ludendorff indirectly confirmed this when, after the war, he hypocritically railed against abuses in these areas.⁶ "Hyprocrisy is the homage vice pays to virtue."

The substantive secondary literature on the conduct of the war from the British side has now reached a point where it is possible to make some interesting comparisons with German practice. Bidwell and Graham's Firepower has already come in for extensive citation here. Tim Travers' The Killing Ground constitutes another valuable analytic source on the conduct of the war from the British side. The British leadership in the First World War, Haig's leadership in particular, has come in for a great deal of criticism. Much of this criticism has been uninformed, originating from parties who simply did not understand the complexity of the problems the British generals had to deal with. Using Travers as a source, it is possible to isolate three interesting contrasts with German practice.

First, Travers criticizes Haig for never quite being able to decide what kind of battle he wanted in his great 1916-1917 offensives. Did he want a breakthrough battle or a set-piece battle of attrition? He often seemed to want a little bit of both. Therefore his instructions to subordinate commanders were unclear to start with.⁷ Bidwell and Graham make a similar point:

Haig, for all his talk about wearing the enemy down, never planned and fought a serious battle of attrition, one that attempted "to destroy the enemy *in situ*" and regarded gaining ground as important only if one thereby gained a better position to fire on the enemy.⁸

Haig's battles always vaguely aimed at a "breakthrough" while not really providing the means or using the proper techniques to do so. As a result British firepower did not damage the Germans as heavily as it might have with a thoroughgoing attrition approach. One thinks here of the British failure to recognize the importance of artillery observation in their 1917 battles. At the same time, British infantry, aiming vainly for a breakthrough, took heavy casualties in all-out assaults on relatively undamaged German defenses.

No command and control system can make up for a fundamentally misconceived policy, or a failure to set a clear policy. The best a command and control system can do is effectively implement a chosen policy. Here there is an interesting parallel with Falkenhayn's policy of holding the front lines at all costs. His enforcement of that policy by sacking commanders who lost the front lines meant that commanders packed the front line trenches with troops, raising casualties by artillery fire. In the face of steadily increasing Allied artillery forces, this was a fundamentally flawed policy. It changed only when

Hindenburg/Ludendorff replaced Falkenhayn at the OHL. Still, it is interesting to note that Lossberg made the first steps towards a solution to this problem under Falkenhayn's tenure: the use of reverse-slope defense in the Champagne (autumn 1915) and use of counterattacks to hold the front lines at the Somme.

Haig compounded his failure to set a clear policy for the great 1916-1917 offensives by an unwillingness to listen to objections and advice. At least open discussion might have cleared up some of the confusion. Haig had a rather distant and aloof personality, but this particular failing was also a reflection of the British conception of the role of the commander:

... it is important to note that Haig's personality fitted in only too well with certain lessons from his Staff College training--the need for the Commander-in-Chief to be determined and display singleness of purpose, the need for unanimity at GHQ, and the rejection of advice from subordinates because of fear of undermining the authority of the Commander-in-Chief. These were all lessons from an earlier Napoleonic age when leadership in battle did require strong decision and willpower; but when applied at GHQ in 1916 and 1917, Haig's rigid personality and understanding of the role of the Commander-in-Chief, led to his own isolation, the isolation of GHQ as a whole from the rest of the BEF, and a lack of serious discussion of alternative strategy and tactics at GHQ or at conferences.⁹

The German command system, when it functioned properly, insured against this kind of isolation. Every commander had a chief of staff to provide advice, every chief of staff in turn received advice from an operations officer. Ludendorff was by no

means a naturally tolerant individual, but he did listen to and even seek out professional military advice. Certainly there was a debate in the German army over tactics--defensive tactics--in 1916-1917.

Both Travers and Bidwell and Graham point to another deficiency in the British system--paradoxically enough, *Weisungsfuehrung*. Having failed to set a clear policy, having failed to discuss and clarify that policy, Haig and the British General Staff insisted on the right of subordinate units to draw up their own plans in accordance with Haig's overall "plan."¹⁰ The result was usually failure to insure best practice, rather than inspired adaptation of the plan to circumstances. The Germans had their own problems with *Weisungsfuehrung*, as the Battle of the Marne shows clearly enough, but at least later in the war they were willing to override the principle in such matters as artillery preparation. They tended to regard *Weisungsfuehrung* as a means to an end, rather than an abstract ideal in its own right.

There is no point in idealizing the German command system. It had its inherent problems and was not always correctly applied. But the German combat record speaks for itself. The German defensive battles in the West after autumn 1915 were masterpieces of defensive technique, largely because Fritz von Lossberg ran most of them. But the OHL can take credit that Lossberg was on

the spot, armed with sufficient authority to get the job done. Lossberg himself exploited the traditional prerogatives of a chief of staff to the utmost. He even changed command relationships when it proved advantageous, as in his granting battalion and division commanders exclusive control of their section of the front and any reinforcements that might enter it. At the same time, after Falkenhayn's departure, the OHL sponsored a debate on defensive tactics which resulted in the idea of elastic defense. The OHL also ensured that the German army was in a position to implement the new doctrine.¹¹

When the Germans attacked on the Western Front in 1918, they achieved in their first offensive the tactical breakthrough which had eluded the British and French. Much of that success derived from improved artillery practice, the result of letting artillerymen like Bruchmueller plan the bombardments. Much of the rest was due to improved infantry tactics, developed in various branches of the German army since 1915.¹² But on top of that there was a concerted effort on the part of the OHL to derive correct offensive doctrine from experience, write up the results and enforce correct policy.¹³

The record shows the German army had the ability to conceive and carry out tactical innovations during the war. According to Lupfer, the German completely revamped their defensive tactics between September 1917 and April 1917. They completely changed

their offensive doctrine in even less time, from December 1917 to March 1918.¹⁴ One might add to that improved artillery technique from about the middle of 1917--firing with reduced registration--as well as a more gradual evolution of infantry tactics from 1915 onwards.¹⁵

The explanation for this ability to innovate seems to lie in two phenomena. First, innovation "bubbled up" from below, as German soldiers tried new techniques on an *ad hoc* basis in the field. Second, higher authority played a role not only in allowing this *ad hoc* activity in the field, but in selecting out the tactical innovators and giving them authority to apply their ideas further afield. Lossberg and Bruchmueller (along with some of the other German artillerymen) are outstanding examples of this practice. Higher authority, at least in the cases of offensive and defensive doctrine, also insisted on the best existing practice becoming the norm for the army as a whole.

The development of German artillery practice is a striking example of good practice evolving from the efforts of individual artillerymen to prepare actual bombardments. Lossberg was the premier example of a tactical virtuoso. In the field of infantry tactics, Gudmundsson has shown that "infiltration tactics" [more properly *Stosstrupptaktik*] were much more the development of units--"storm troop" units, Jaeger units, ordinary infantry units--rather than of any single individual, even though Captain

Rohr did play a leading role.¹⁶ Lupfer also recognized this phenomena:

Perhaps the British infantry tactics at the Somme on the first day reflect a failure to recognize that tactical techniques and lessons do not originate exclusively at higher levels and descend to the units. A greater service can be rendered by the higher headquarters that earnestly solicits opinions and experiences from units in the field, evaluates and distills the information, and disseminates the finding back to the field units. The Germans would demonstrate this process after their Somme experience.¹⁷

At the same time, German tactical development was not all a matter of individual initiative. Bruchmueller might have remained an obscure divisional artillery officer without the patronage of Colonel Hell of the General Staff. Lossberg would not have run his defensive battles had not Falkenhayn and Ludendorff put him in a position to do so. The Germans had Lossberg as a defensive expert in 1916, but they also had The Principles of Command in the Defensive Battle in Position Warfare. The Germans did not have an "offensive expert," but they did have the manual The Attack in Position Warfare. Lupfer has made it clear that the OHL went out and aggressively developed and enforced these doctrinal developments, and provided the material prerequisites for them.¹⁸ In that sense it was very much a "top-down" development, except that the OHL did not so much impose its own ideas as to codify the best tactical thinking in the German army.

Earlier in this work we examined an innovation Lossberg made during the course of the Somme Battle: assigning battalion and divisional commanders a specific sector of the front, and giving them authority over all that happened in their sector, including command of any reinforcing units, irrespective of rank or seniority. Corps and regimental headquarters became support units. As Lupfer puts it:

The corps headquarters had a battlefield role similar to that of the regiment, to organize and to sustain the subordinate units, but not to direct the units during battle. The entire German Army organization gave support and authority to the commander of the engaged forces and thus reduced the number of headquarters controlling the tactical situation.¹⁹

Lossberg's field innovation, thoroughly sensible as it was, was but a particular manifestation of a larger aspect of the German command system. Throughout the system, higher authority "lent" support and encouragement, indeed lent authority to worthy subordinates. One sees this phenomena most clearly with tactical experts like Lossberg and Bruchmueller, but it is a thread running throughout the German command system.

The prototype for this lending of authority was the relationship between a commander and the chief of staff. The chief of staff might have a brilliant operational mind, but lack perhaps the age, rank, personality, or even the social pedigree to exercise command. Through the commander/chief of staff

relationship, the commander essentially lent authority in the operational sphere to the chief of staff, by backing up the chief of staff's suggestions with orders.

The practice of granting *Vollmacht* is as clear an example as one could wish of the "lending" of authority. For a brief time and a specified purpose, the officer granted *Vollmacht* could act in the name of the granter of *Vollmacht*. *Weisungsfuehrung* represented a similar, though more limited application of the same principle. German higher level commanders and their staff officers had considerable discretion in mobile field operations. But they were not acting independently. They were supposed always to strive to translate into actuality the operational intent of the commander.

It should not surprise that General Staff officers, operating in such an environment of delegated responsibility, should have extended even to ordinary (non-General Staff) officers considerable freedom of action. We see this with the influence able German artillery advisors were able to exert, an influence denied their exact British counterparts.

The German command system could not guarantee the German army a winning strategy in the war. It could not even guarantee outstanding performance in the conduct of a campaign, as the unhappy German experience on the Marne shows. But it was a system which did prove capable of fostering considerable tactical

innovation in the course of the war, tactical innovation that did much to prolong if not to win the war for Germany.

There is no law of organizational theory so firmly established as "the law of unintended consequences." Large organizations are complex, with obscure interrelationships between their parts. Try to change one thing in a large organization, and you end up changing something else. When the elder Moltke introduced operational art and *Weisungsfuehrung* into the German army, doubtless he only wanted to win his campaigns. We also know that he used *Weisungsfuehrung* because he, Moltke, did not have the raw personal authority to effectively order Prussian generals around in detail. But doubtless he had no idea that the practices he introduced, and the spirit of thinking they encouraged, would translate into improved German tactical innovation in a great war two generations later.

-- Notes --

1. Bidwell and Graham, Firepower, see Chapter 8, p. 131-146.
2. See reference to "mission orders" by Captain (of the German army) Adolf von Schell "Battlefield Psychology" The Infantry Journal, vol. 3 (1931-32), p. 83. I am indebted to Bruce I. Gudmundsson for bringing this article to my attention.
3. Rosinski, The German Army, p. 282.
4. Ibid., p. 282.
5. Rosinski, p. 145-146.
6. Ibid., p. 282.
7. Tim Travers, The Killing Ground: The British Army, the Western Front and the Emergence of Modern Warfare 1900-1918 (London: Allen & Unwin, 1987), p. 110.
8. Bidwell and Graham, Fire-Power, p. 71.
9. Travers, The Killing Ground, p. 104.
10. See Ibid., p. 109-110.
11. Lupfer, Dynamics of Doctrine, p. 11-35.
12. See Gudmundsson, The Forlorn Hope, *passim*.
13. Lupfer, Dynamics of Doctrine, p. 37-58.
14. Ibid., p. 11.
15. Gudmundsson, The Forlorn Hope, *passim*
16. Gudmundsson, The Forlorn Hope, *passim*.
17. Lupfer, Dynamics of Doctrine, p. 7
18. Lupfer, Dynamics of Doctrine, *passim*, see especially p. 21-29 and p. 55-58.

19. Ibid., p. 20.

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