MOVEMENTS AND SUPPLY
OF THE
GERMAN FIRST ARMY
DURING
AUGUST AND SEPTEMBER 1914
Movements and Supply

of the

GERMAN FIRST ARMY

During
August and September, 1914

A Treatise by
GENERAL VON KUHL and GENERAL VON BERGMANN
German Army, Retired

With an introduction by GENERAL VON KLUCK

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1929
PREFACE

The first step leading to the preparation of this study was taken, in the latter part of 1922, by Major General James G. Harbord, then Chief of Staff of the Army, who wrote Major General Henry T. Allen, commanding the American Forces in Germany, outlining the scope of the work. The plan called for a study on the ground, by a group of selected American and German officers, of the methods of supply of the German First Army during its advance in 1914, through Belgium into France, as the right element of the German forces.

General Allen placed Major W. C. Koenig, C. A. C., in charge of the work. With the assistance of our Military Attache in Berlin and of the representative of our Historical Section, Army War College, at Potsdam, Major Koenig was enabled to obtain, in December, 1922, the services of General von Kuhl and General von Bergmann of the German Army. These retired officers each agreed to prepare a military treatise on the supply and transportation of General von Kluck's command (First Army), with such observations on organization, concentration, and troop movements as would be in keeping with the subject. General von Bergmann was to write his study in extension of that of General von Kuhl by referring freely to statements made by the latter, and defining his position in regard to them.

The rôle played by General von Kuhl as Chief of Staff of the German First Army, during the initial period of the War, and his international reputation as a writer, render superfluous any comment as to his historical trustworthiness. General von Bergmann was Deputy Chief of Staff under General von Kuhl, during the operations under consideration, a position nearly analogous to that of an Assistant Chief of Staff, G-4, of an American army. In that capacity he supervised the collective system of supply and evacuation of the German First Army. There is no doubt that General von Bergmann, owing to his past experience,
is preeminently fitted to discuss the service of supply of that army.

In conformity with the wishes expressed by Major Koenig, the two German generals first carefully studied the documents in the German National Archives dealing with this operation; the facts thus obtained they supplemented with their views, based upon personal knowledge and experience and the war experiences of their former associates.

Owing to the lack of motor transportation and funds, and the fact that the officers contributing to the study had been over the terrain many times, the original plan of making a study on the ground, as desired by General Harbord, was abandoned.

This paper was first reviewed by the War Department General Staff, whereupon it was examined by the Army War College, which recommended a revision of the translation of the two articles with a view to making it clearer and more in conformity with our own terminology. The Historical Section of the Army War College was charged with this task.

To orient the student, there follows a general survey of events beginning with the concentration of the opposing armies in the West and ending with the German retreat to the line of the Aisne on September 13, 1914.

This review is based on the following sources:

I. French General Staff: *Les armées françaises dans la grande guerre, Tome I-er Volume* (1922);

II. French General Staff: *Les armées françaises dans la grande guerre, Tome I-er Volume, Annexes* (1922);

III. Joffre: *La preparation de la guerre et la conduite des operations* (1920);

IV. Lanrezac: *La plan de campagne français* (1921);

V. Gallieni: *Memoires—Defense de Paris* (1920);

VI. German National Archives: *Der Weltkrieg 1914-18, Vol. I* (1925);
At the beginning of major operations, on August 18, 1914, there were advancing through Belgium, Luxembourg, and north of Metz, five German armies; viz: First Army (Kluck) between Diest and Tirlemont; Second Army (Bu­low) between Tirlemont and Namur; Third Army (Hausen) approaching the region southeast of Namur; Fourth Army (Albrecht of Wurtemberg) nearing the western border of the Grand Duchy of Luxembourg opposite the line: Bastogne —Arlon; Fifth Army (German Crown Prince) reaching the line: Mamer—Thionville. With the left of these five armies pivoting on the fortified area: Thionville—Metz, the plan was to envelop the left of the Allies by sweeping through Belgium and northern France in the direction of Paris. The Sixth Army (Rupprecht of Bavaria) and the Seventh Army (Heeringen) had been assembled between Metz and Saarburg, and west and south of Strasbourg, respectively, to act as flank guard of the advancing forces, and prevent an invasion of Alsace (1).

Against the German forces and extending from Belfort to Hirson, were arrayed five French armies and several smaller French detachments, the British Army near Le Cateau, and the Belgian Army in the triangle: Liege—Namur—Brussels. The French First and Second Armies occupied the line: Belfort—Epinal—Nancy; the Third Army was in the vicinity of Verdun, the Fourth Army in the region of Ste. Menehoul between the Third and Fifth Armies, and the Fifth Army opposite the line: Mouzon—Me­zieres. The French concentration was completed on August 18. Joffre’s plan was sufficiently elastic to permit of a main

effort either north or south of the area: Thionville—Metz. The contingency of a German advance through southern Belgium had been provided for (2).

The Belgian Army west of the Gette River, unable to resist the German advance, fell back on August 19 in the direction of Antwerp. To contain it the III Reserve Corps was detached from Kluck's army, and to this force was later added the IX Reserve Corps which had arrived from northern Germany (3).

On August 21, the German First Army had reached the general line: Ninove—Nivelle, southeast of Brussels. The Second Army held the line north of the Sambre from Nivelle to Namur (inclusive), that fortress being attacked by one corps each of the German Second and Third Armies. The Third Army extended south from Namur; its left wing was approaching Givet.

An invasion of Lorraine by the French First and Second Armies was repulsed by a German convergent attack launched August 20-22 (4).

On August 18, the troops of the center and left of the French line, operating in conjunction with the British and Belgian Armies, were ordered to assume the offensive against the German forces concentrated in the Grand Duchy of Luxembourg and in the southern part of Belgium (5). The French Fifth Army, on August 22, occupied the salient south of the Sambre and west of the Meuse, along the line: Givet—Dinant—south of Namur—Thuin; and the British along the line: Binche—Mons—Conde. At that time the French Fourth Army had crossed the Semoy River and the French Third Army had reached the general line: Audun le Roman—Virton. This Allied offensive broke down, with the result that the German armies continued their advance along


(5) General Joffre apparently was ignorant of Kluck's exact position and must have greatly underestimated the strength of the German right wing. IV, pp. 98-100.
the entire line and invaded northern France on August 25. The last fort of Namur fell on this day, but the fortress of Maubeuge held out until September 7, thus effectively blocking the important trunk line: Liege—Paris, and depriving the German right of one more corps (VII Reserve Corps of the Second Army). A further inroad into the German strength was made when the two army corps which had reduced Namur, were sent to East Prussia. Thus from August 18 to September 7 the German right had suffered a loss of five army corps (6).

His effort at the frontiers having failed, General Joffre, on August 25, directed his left to fall back to the general line: Verdun—Craonne—La Fere—St. Quentin—the Somme, with a view to resuming the offensive from that line. By transferring fresh forces from the East to his left wing, he sought to gather the necessary strength wherewith to carry out this offensive and to envelop the enemy's right. The latter mission he assigned to his Sixth Army (Maunoury) which was being organized and concentrated near Amiens. But Joffre was unable to resume the offensive along the line selected, owing to the German pressure which prevented timely reorganization. On August 28, Kluck's Army crossed the Somme east and west of Peronne and repulsed attacks by detachments of Maunoury's Army. In the hard fought battle of the following two days near St. Quentin and Guise, Bulow forced the French Fifth Army (Lanrezac) to fall back to the Serre River; on August 31, the bulk of the German Second Army remained in the region of St. Quentin and thereafter continued its advance in a southerly direction, in conformity with Moltke's orders. Hausen, on August 30, was forcing the crossings of the Aisne near Rethel, and Kluck had reached the Avre. With the approval of the High Command, Kluck now changed direction from southwest to southeast, moving towards the Oise. Moltke, still hoping to envelop the French left, planned at this time to

push the French forces away from Paris. He was apparently in the dark as to General Gallieni's preparations for the defense of the capital, and the concentration of a mass of maneuver in that vicinity (7).

On September 2, General Joffre authorized his armies to continue the withdrawal, and, if necessary, to retreat as far as the general line: The Seine—The Aube—Joinville. Two days later, he had completed his concentration in the region of Paris sufficiently to save the left of his Fifth Army from a German envelopment. A numerically superior force consisting of the French Fifth Army, the British Army, two French cavalry corps, the French Sixth Army and the Paris Garrison, being now ready to strike at the enemy's right, Joffre brought his general retreat to a halt on a line considerably north of the one originally selected, and ordered a general attack extending from Verdun to Paris for September 6 (8).

On the evening of September 5 the German Army commanders received their first definite information from the German High Command of the Allied concentration in the vicinity of Paris. At this time a general advance by the entire French line was apparently not expected by the German High Command, for, on September 5, the German First and Second Armies were directed to remain opposite the eastern front of Paris and "to meet offensively" all attacks from that direction, (Kluck's Army north of the Marne and Bulow's south of that river); while the Third, Fourth, and Fifth Armies were ordered to continue their forward movement. (9).

The relative positions held by the opposing forces on the eve of the Battle of the Marne appear from the sketch, Plate I. The German First Army had crossed the Grand Morin; its IV Reserve Corps on the right had been in con-


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PREFACE

tact with Maunoury's Army (Sixth) since September 5. The momentous battle began on the following day along the Ourcq, whither the IV Reserve Corps had been forced to retreat. Kluck was able to shift one corps to the new front in good season. Bulow succeeded in holding the line of the Petit Morin.

On September 7th, Kluck gathered his army along the Ourcq and maintained his position despite the absence of two corps. Although on the next day Maunoury's left wing was reinforced by the 7th Division, French IV Corps, which had been brought up by rail and motor transport, he nevertheless was in danger of being outflanked by Kluck who was moving his III and IX Army Corps (10) from his left to his right for that purpose. With the departure of these two corps from Kluck's left there remained, between the First and Second Armies, only two German cavalry corps and some infantry. These troops were forced back, across the Marne, by the British, exposing the right of the German Second Army which was promptly refused to avoid envelopment by the British troops and the French Fifth Army. Bulow became pessimistic regarding the general situation and, on the following day, September 9, alarmed, on account of the threat of a deep Allied penetration into the wide gap between his army and that of Kluck. After conference with Lieutenant Colonel Hentsch, who represented the German High Command, Bulow decided to retreat in a northeasterly direction. Kluck, having been notified by Hentsch on the afternoon of September 9th to conform to Bulow's movement, initiated his retreat although his right was in the midst of a successful attack against Maunoury's left. The German front having now become untenable, Moltke directed the remainder of his armies along the Marne to withdraw and, on September 13, succeeded in establishing himself along the line of the Aisne, as shown in Plate I (11).

(10) These were active corps and should be distinguished from the similarly numbered reserve corps previously mentioned.

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Historical Section,
Army War College,
January, 1926.
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PART I

TREATISE

By

General von Kuhl

With an Introduction by General von Kluck
INTRODUCTION
BY GENERAL VON KLUCK

The present paper prepared by General von Kuhl, the distinguished former Chief of Staff (1) of the German First Army during the period 1914-15, on the movements (2) and supply (3) of that army in August and September 1914, from the beginning of operations to the withdrawal (4) behind the Aisne, possesses all the sterling qualities which characterize the works flowing from the pen of that profound author. It represents an important contribution to historical research in its treatment of memorable military events. I shall endeavor briefly to comment upon it.

In the section dealing with the organization of the army supply service (5), the author emphasizes the important truth that the modern method of subsistence (6) of armies of enormous size demands replenishment (7) from the zone of the interior (8). This point he stresses in contradistinction to the former and habitual unsystematic practice whereby the troops would live on the resources of the theatre of war—a practice which, as an exceptional and supplementary expedient, is even nowadays occasionally resorted to. The temptation is great to delve at this point into military history and to draw comparisons.

Most appropriately, ample space has been devoted to the passage of the First Army through the defile constituted by the city of Aix-la-Chapelle (9) and that portion of the Meuse which is situated between the northern exterior forts (10) of Liege and the frontier of neutral Holland. The movement of those masses, including the factors of their security, subsistence (11) and supply (12), and the result achieved—the complete surprise of a more or less unsus-
pecting opponent—represents a unique find for the seriously inclined student of military history and especially for general staff officers (13).

Pertinent mention has been made of the unfortunate decision which placed the First Army under the control of the commander (14) of the Second, as well as of the inappropriate and harmful measure of assigning to the 2nd Cavalry Corps a similar rôle. It is needless to point out here the detrimental effect which such measures were bound to have upon the decisive movements of the First Army, undertaken for the purpose of enveloping the enemy (15). Such violations of the fundamental principles of war could not escape their logical penalties.

In the consideration of his lucid presentation we arrive at the events that took place on the Ourcq River during the Battle of the Marne. These operations constitute indeed the most difficult movements executed by this never failing body of troops and its devoted transportation and supply force (16),—movements which are worthy of the reader's undivided attention. What the author has given here in general outline may some time in the future furnish the incentive for a special study. This study would have to deal with the question as to how, by the exertion of all intellectual, moral, and physical forces, that gigantic stream of enormous columns and trains (17), which had stopped, was made to flow again in an orderly fashion. It would also show that this feat was accomplished, in spite of the prevailing confusion—a confusion particularly great when the army turned about and marched from the position along the Ourcq back to the northern bank of the Aisne. Members of the Swiss General Staff have urged that an attempt be made to clarify all these movements and the vast exertions put forth in what may be considered a strategic crisis of the first order.

(13) Generalstabsoffiziere (16) Verkehrstruppen
(14) Oberbefohlsheber (17) Kassentrains und
(15) Umklammerung des Kolonnen

Gegners

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The author is to be commended for stating emphatically that, considering the magnitude of the task which had devolved upon the First Army, the service of supply as regards subsistence and ammunition (18), during the successful Battle of the Ourcq, functioned in a satisfactory manner.

Whatever the present treatise has to say about the service in the communications zone (19), about ammunition supply (20), medical service (21), and railway matters (22) serves but to emphasize the fact that in war all measures must be directed to one paramount end; namely, to maintain and promote, by all available means, the readiness of the troops for action (23). One is reminded of the unceasing activity of Frederick the Great to this end, during the suspension of hostilities in the winter months of that memorable war of attrition which lasted seven years.

Having participated as fellow combatant in the events under discussion, I find it hard to lay aside General von Kuhl's thorough-going account after having thus briefly touched it.

(Signed) V. KLUCK,
Colonel General (24)

Berlin-Grunewald, 14 February, 1923.
INTRODUCTION

The movements of the German First Army (General von Kluck's), during the operations from the beginning of the World War until the middle of September, 1914, are of special interest so far as concerns the service of supply (25), the installations of the communications zone, the lines of communication (26), the march dispositions of the several army corps, the movements of columns (27) and trains (28), and the subsistence of troops (29). The First Army, forming the right element of the German field forces (30), was obliged to contract its front, in order to advance from its concentration area (31) in the northern part of the Rhine Province. This contraction was accomplished in such a manner that it was able to pass with all six army corps through the city of Aix-la-Chapelle (32), and afterward cross the Meuse in the extremely narrow space between Liege and the southern boundary of the Dutch Province of Limburg. Not until the other side of the Meuse was reached, and the army stood on Belgian soil, could it be developed and spread out more toward the right. Without a day's rest, the army continued to march to the Battle of the Marne, turning gradually toward the south and the southeast. The marching feats (33) performed during those days are without parallel in military history (34), yet the supply service (35) never failed. On September 5, the army was facing south; it then faced about and turned toward the west against the French Sixth Army under Maunoury, enveloping the latter's left. However, the First Army was finally obliged to retrace its steps in an almost northerly direction, in order to comply with the instructions of Lieutenant Colonel Hentsch, who had appeared as repre-
sentative of General Headquarters. It was not until the army reached a position behind the Aisne that it made its first halt. Even then, it was unable to find rest, for it was at once engaged in heavy fighting.

For a better understanding of the march dispositions (36) and the army supply service (37), it will be necessary to outline briefly all pertinent regulations (38) and customs then in vogue in the German Army.

Map references are based on the "Map of the Movements of the First Army," contained in General von Kluck's book, "The March on Paris." However, the German war map 1:300,000 and the general topographical map of Central Europe 1:200,000, i.e. the old "Reymann Map," may likewise be used. (*)

(Signed) VON KUHL. (†)
CHAPTER I

ORGANIZATION OF THE SUPPLY SERVICE (1) IN THE GERMAN ARMY AT THE BEGINNING OF THE WORLD WAR

The organization of the German supply service (2), and, in fact, the entire training and preparation of the German forces as a whole, was adapted to a war of movement (3) and not to position warfare (4).

In 1914, a German "Army" (5) was composed of a number of army corps (6), cavalry divisions (7), reserve corps (8), mixed landwehr brigades (9) (for purposes of occupation, siege, and the like), and mobile organizations for service in the communications zone (10). In addition, engineer regiments (11), balloon and airship units (12), aviation units (13), signal troops (14), heavy artillery (15), and other artillery units, were assigned to it.

An army corps was composed of two infantry divisions (16), one battalion of heavy field howitzers (17), one telephone detachment (18), and one aviation squadron (19). To these were added the ammunition column (20) and the trains (21).

Every infantry division consisted of two infantry brigades (22) which, in turn, were made up of two infantry regiments (23), the latter of three battalions (24) each. It further contained one regiment of cavalry (25) and one brigade of field artillery (26), the latter being composed of two regiments of two battalions (27) each. It also comprised one or two companies of engineers (28), one or two

| (1) Heeresversorgung | (15) schwere Artillerie |
| (2) Nachschub | (16) Infanteriedivisionen |
| (3) Bewegungskrieg | (17) schwerer Feldhaubitzen |
| (4) Stellungskrieg | (18) Fernsprechabteilung |
| (5) Armee | (19) Fliegerabteilung |
| (6) Armee Korps | (20) Munitionskolonnen |
| (7) Kavalleriedivisionen | (21) Trains |
| (8) Reservekorps | (22) Infanteriebrigaden |
| (9) Landwehrbrigaden | (23) Infanterieregimenter |
| (10) Etappenformationen | (24) Bataillonen |
| (11) Pionierregimenter | (25) Kavallerieregiment |
| (12) Luftschiffer-Abteilungen | (26) Feldartilleriebrigade |
| (13) Flieger-Abteilungen | (27) Abteilungen |
| (14) Nachrichtentruppen | (28) Pionierkompagnien |
medical companies (29), and one divisional bridge train (29½).

The ammunition column of an army corps consisted of 4 ammunition companies for the infantry (30) (termed “infantry ammunition columns”), 9 companies for the field artillery (31), and 8 companies for the heavy artillery (32).

The trains (33) of an army corps comprised 12 field hospitals (34), 6 subsistence companies (35), 7 heavy supply companies (36), 2 remount depots (37), 2 field bakery companies (38), and 1 corps bridge train (39).

All the units named were horse-drawn.

The road space (40) of the combatant troops (41) of an infantry division was 15 kilometers and that of an army corps marching on one road 31 kilometers; the field and service trains (42) of an infantry division covered 3 kilometers, whereas those of an army corps required 7 kilometers of road space. The road space of the ammunition column and the trains of an army corps was 21 kilometers.

The trains assigned to the troops (43) were subdivided into combat trains (44), and field and service trains (44½); the former would march with the troops, the latter would follow in rear of the divisions. The ammunition column and the trains (of the army corps) would march habitually in two sections (45) (termed “echelons”) at some distance in rear of the army corps. One of these sections, during an advance into action, was usually brought up closer to the army corps, and was then termed “combat echelon” (46).

A reserve corps consisted, in general, of reserve troops (47) and was organized much like the army corps. However, each division had only one regiment of field artillery,
composed of two battalions, and the assignment of ammunition companies and trains was correspondingly reduced. The reserve corps did not always include heavy artillery (heavy field howitzers).

The ever-growing size of the armed forces (48) made it necessary that the transportation facilities (49) intended for the subsistence, medical attention (50), ammunition replenishment (51), and replacement of matériel (52) of these forces be continually increased. The field and service trains, and the ammunition column and the trains of an army corps occupied—disregarding the requisite distance between them—the same amount of road space (31 kilometers) as the combatant troops of the corps.

This transportation (53) following the army corps represented the latter's rolling depot (54) which, in turn, was continually in need of replenishment from the zone of the interior (55). It was assumed that only in exceptional cases would food supplies be procured in the theatre of operations (56), and that the masses of present-day armies would have to depend primarily on supplies forwarded from the zone of the interior (57). It had been anticipated that, owing to the introduction of quick firing weapons (58), there would be an enormous expenditure of ammunition (59), the timely replenishment of which would demand most energetic efforts. In rear of the ammunition columns and trains, it was therefore necessary to bring up continually, from the zone of the interior, supplies and ammunition (60) to points far enough advanced to enable these trains to refill at any time. Casualties, furthermore, had to be made good by replacements from the reserve formations of the zone of the interior, while the sick and wounded, as well as the prisoners of war, had to be evacuated (61).

(48) Heer (55) Neimat
(49) Trosz (56) Kriegsschauplatz
(50) Sanitätseinrichtungen (57) auf Nachschub aus der Heimat angewiesen
(51) Ergänzung der Munition (58) Schnellfeuerwaffen
(52) Ergänzung des Materials (59) Munitionsverbrauch
(53) Trosz (60) Vorräte und Munition
(54) bewegliches Magazin (61) nach rückwärts abgeschoben werden muszten
These ends were served by the communications net (61½) consisting chiefly of standard-gauge (62) or narrow-gauge railways (63) and, in the absence of these lines, of highways (64) and waterways. The area situated in rear of an army, that is, the communications zone (65), was for this purpose placed under special administrative officers (66), charged with the maintenance of communication between the army and the zone of the interior. Headquarters of the communications zone (67) had at its disposal a number of horse-drawn heavy supply companies and several ammunition companies. There were also available to the zone headquarters certain motor transport companies, which were intended to expedite and facilitate the forwarding of supplies (68) from the railheads (69) to the troops themselves.

The service of the communications zone (70) was organized as follows:

The communications zone lying in rear of each army and its combat area (71) formed the connecting link between that army and the zone of the interior. All transport movements of the supply service (72) necessary for the replacement of troops and other requirements of the army (73), as well as for the evacuation of the sick and wounded, and prisoners of war, was conducted through this area. This purpose was served by the lines of communication (74).

As a rule, there was allotted to each army only one line of communication, which was formed mainly by railways. In order to supplement the latter, waterways were also utilized, when feasible. In the home district or corps area (75) of each corps belonging to the army was its "corps base" (76). From the several corps bases, railway lines

(61½) die rückwärtigen Verbindungen
(62) Eisenbahnen
(63) Feldbahnen
(64) Landetappenstrassen
(65) Etappengebiet
(66) Etappenbehorden
(67) Etappensuskktion
(68) Nachschub
(69) Endpunkten der Eisenbahnlinien
(70) Etappenwesen
(71) Operationsgebiet
(72) Transporte fur den Nachschub
(73) Heeresbedurfniesse
(74) Etappenlinien (see Plate III)
(75) heimatlichen Korpsbezirk
(76) Etappenanfangsort
ORGANIZATION OF THE SUPPLY SERVICE

LINE OF COMMUNICATION OF AN ARMY

Army Combat Area

III Army Corps

II Army Corps

I Army Corps

Communication Zone Headquarters & Main Depot

Frontier

Transfer Station

Army Base

Zone of the Interior

Base of the III Army Corps

Base of the II Army Corps

Base of the I Army Corps

Military Stations on the Main Railway Line (Landetappenorte) containing Section Headquarters of the Communications Zone, advance subsistence depots or refilling points, advance ammunition depots, and station hospitals.

Military Stations on the Main Railway Line (Stappoorte) containing Section Headquarters of the Communications Zone, military railway transportation offices, etc..

Plate III
converged toward the army base (77), and from this point to the front formed the line of communication of the army (78). At the transfer station (79) the various trains carrying troops or supplies (80) passed from the control of the zone of the interior to the military control of the railway lines (81) of the theatre of operations. The standard-gauge railway terminal, that is, the railhead (82) in rear of the army, was, as a rule, also the main depot (83) of the communications zone. From here, the line of communication was carried forward as supply line to the several army corps either by making use of available highways or by means of narrow-gauge railways.

The Quartermaster General (84), attached to General Headquarters, was in supreme charge of the organization of the communications zones of all the armies (85) and of the military railway service (86) in the theatre of operations. The director of military railways (87) conducted the entire railway service for war purposes, in accordance with the general directives (88) of the Quartermaster General.

In the case of each army, the service of supply and evacuation (89) in rear of it was regulated and supervised by the commander of the army communications zone (90), within his zone and along the line of communication, assigned to him by the Quartermaster General. In order to assure regularity of service, and maintain order in the communications zone, section headquarters (91) were set up at the more important railway stations (92) and at points along the highways (93). The section headquarters along highways (94) were about a day's march apart. Military
railway transportation offices (95) were established in the
railway stations.

The supplies (96) destined for the army were collected
at the army base and held in readiness for transportation
to the front (97). The army commissary of subsistence
(termed "army intendant") (98) was in charge of the
stocks on hand in the subsistence depot of the army. The
stocks in the latter were replenished from the reserve depots
(99) which were maintained in the zone of the interior for
each army, and which were filled in accordance with the
directions of the War Ministry. From the army base, the
supplies were forwarded, according to requirements, along
the line of communication to the main depot. By means of
narrow-gauge railways, heavy supply companies (101),
ammunition companies, and motor transport companies, the
zone authorities (100) would establish, along the highways,
a number of advance subsistence depots (102) or refilling
points (103), and advance ammunition depots (104). These
advance depots were located at such distance beyond the
main depot that the empty vehicles of the subsistence com-
panies and ammunition columns of the army could reach
them for purposes of replenishment.

The replenishment of ammunition was effected in the
following manner: The Chief of the Field Munitions Service
(105), at General Headquarters (106), was in charge of the
railway ammunition trains (107) held filled and in readi-
ness at the artillery depots (108) of the zone of the interior,
and would send them forward, in response to requisition
(109) by the communications zone commanders of the vari-
ous armies (110). The latter, in turn, were required to
hold the trains carrying ammunition in readiness on side-

(95) Bahnhofskommandan-
turen
(96) Nachschub
(97) Vorfuhrung
(98) Armeeintendant
(99) Ersatzmagazinen
(100) Etappenbehorden
(101) Etappen-Fuhrpark-
kolonnnen
(102) Magazine
(103) Ausgabestellen
(104) Munitionsdepots
(105) Chef des Feldmunitions-
wesens
(106) im Großen Haupt-
 quartier
(107) Munitionszuge
(108) Artilleriedepots
(109) auf Anfordern
(110) Etappeninspektionen
der Armeen
tracks as closely as possible in rear of their respective armies. The ammunition companies of the communications zone (111), or at times the ammunition columns of the several army corps directly, would be refilled from these railway trains.

The subsistence of modern armies of enormous (112) size was of necessity based upon a system of depots replenished regularly from the zone of the interior. However, it was contemplated also to make the widest possible use of the resources found in the theatre of operations.

The daily routine of rationing (113) in the army was planned in the following manner: After the halt for the night (115½), the troops, as a rule, would receive cooked meals (114) from the rolling kitchens (115), following in their immediate rear; sometimes they were rationed while still engaged in marching, or during lulls in combat (116). The mounted troops, however, not then equipped with rolling kitchens, were in most cases obliged to await the arrival of the field trains (117). After the field trains had joined the troops in the evening, rations for one day (118) would be taken from the ration wagons (119) for the purpose of replenishing the rolling kitchens for the following day. Only in exceptional cases was it possible for the troops to depend on the inhabitants, with whom they were billeted (120), for meals. It was the uniform policy that rations (121), taken from the ration wagons, should be replaced by the troops from supplies (122) procured within their respective shelter areas (123). This was to be done, under the direction of their supply officers, by means of requisitions in accordance with regulations (124). In all such cases, the local authorities (125), as well as the inhabitants,
were to be called upon to cooperate; deliveries (126) were to be receipted for in writing. It was assumed that, by this method, it would frequently be possible to procure meat on the hoof (127). However, it was not believed that other ration articles could be procured in sufficient quantities, except on rare occasions; the necessary amount of bread would probably never be obtainable.

Ration components, that could not thus be procured by requisition, especially bread, had to be taken from the subsistence companies (128) of the army corps. To this end, army corps and division headquarters, by means of administrative orders (129), would announce to the troops to what points the several corps subsistence companies or heavy supply companies would be directed and where, accordingly, distributing points (130) would be established. Such distributing points were generally located in the towns and villages of the shelter area of the division. The routing (131) of the troop ration wagons and forage wagons to the distributing points, and their return to the troops, or to the combined field trains, were regulated by the divisional administrative order.

The subsistence company sent to the distributing point would usually contain all the components of the ration (132). The communications zone unit (133) next following would take over any supplies not consumed as well as any other provisions (134) collected by the troops, and establish subsistence depots (135). The latter would be filled with these supplies, but mainly with such provisions as were brought up from the zone of the interior. It was from these advance subsistence depots (136), constantly moved forward by the communication zone commander (137) in order to keep up with the progress of the army, that the subsistence companies of the army corps were refilled.
It was assumed that the cavalry divisions would be able, in the main, to live on the resources of the theatre of operations. Each division carried, in a cavalry motor transport company, sufficient grain (oats) to last one day (138). Replenishment (139) was to be obtained from an army corps specially designated by the army, or from the communications zone directly.

The assignment of subsistence vehicles (140) was as follows: Each company, troop (141), and battery had at its disposal one ration wagon, which would march with the field train. Each company of foot troops was, moreover, equipped with a rolling kitchen forming part of the combat train. Troops and batteries had a forage wagon each, which belonged to the field train. However, no rolling kitchens were assigned to these units; this equipment was not issued to them until later. Ration wagons would carry at least one day's rations, while the forage wagons were loaded with approximately one day's supply of oats.

The subsistence companies of the army corps, including heavy supply companies, carried about four days' rations and grain for the corps.

In addition, the troops would carry reserve rations (so-called iron rations) (141½) both for men and animals, which were intended to constitute a permanent reserve supply to be used only in case of emergency. Each foot soldier was issued three reserve rations of which two were carried in the knapsack (142) and one in the rolling kitchen. Mounted troops (143) would carry, besides those three reserve rations, two to three grain rations per animal on the horses and vehicles (144).

Since bread was particularly difficult to procure, it had to be supplied, for the most part, by the field-bakery companies (145). It was incumbent upon the communications zone commander to forward flour and, in case of necessity, to send it by special flour companies (146).
The order of march (147) was so arranged that the combat trains [infantry ammunition wagons (148), rolling kitchens, medical supply wagons (149), etc.] would ordinarily follow in rear of their troop units (150), whereas the field and service trains [baggage wagons (151), ration wagons, forage wagons (152), engineer wagons (153), supply wagons (154), etc.] would be assembled by division to follow the combatant troops (155) at some distance. As far as practicable it was arranged that field and service trains would be in the shelter area by evening. Ration wagons and forage wagons were usually en route, since they formed the connecting link between the troops and the distributing points.

The corps ammunition column and corps trains were habitually divided into two sections (termed echelons) (155½) which followed in rear of the field and service trains, echeloned in depth. In case combat was imminent, a special combat echelon (156), as previously mentioned, could be formed and brought up nearer to the troops.

The subsistence companies were intended to carry, primarily, preserved meats and correspondingly smaller quantities of oats; they were much more mobile than the heavy supply companies.

Special arrangements were necessary whenever two army corps marched in column on one road. As stated before, the combatant troops of one army corps marching on one road occupied 31 kilometers of road space. In rear of them, the field and service trains occupied a road space of 7 kilometers. They were followed by the first section of the corps ammunition column and corps trains (157) with a length of about 10 kilometers, and the second section of those trains covering approximately 11 kilometers. To this the distances between the combatant troops, field trains and
sections had to be added. Even for one army corps, marching in a single column, the operation (158) and service of the field and service trains, and of the corps ammunition column and corps trains was rendered difficult.

Two army corps, including columns and trains, marching on one road, occupied about 120 kilometers of road space. In case such a march continued for several days, special measures regarding the service of supply, as well as the readiness for action (159) of the troops had to be taken. Army headquarters regulated the bringing up of subsistence supplies (160) and the replenishment of ammunition (161). When no encounter with the enemy was expected, the field and service trains were able to follow immediately in rear of their divisions, and subsistence companies, carrying about two days' rations, could be attached to the leading army corps. In this case the army corps marching in rear would be followed by all the sections of the ammunition columns and trains. However, when an encounter was looked for, the field and service trains would have to be placed in column further in rear. In addition to the combat echelon (first section of the ammunition column and the trains) the leading army corps would then be followed by subsistence companies carrying rations for two days. In rear of the last division (of the rear corps) there followed the first section of the ammunition column and the trains (of the rear corps), then all field and service trains, and finally the second sections of columns and trains (of the leading and rear corps) (162).

Coordination of march dispositions was obtained by conferring upon the senior corps commander (163) the supreme command (164) while the two army corps were marching on the same road.

The movements of ammunition columns and trains, the replenishment of ammunition and subsistence, and the medical service were regulated within the army corps and

(158) Dienst   (162) die zweiten Staffeln
(159) Gefechtsbereitschaft   (see Plate IV).
(160) Verpflegungsnachschub
(161) Munitionsersatz
(163) alteste Kommandierende General
(164) Befehl
divisions by means of administrative orders, as distinct from operation and tactical orders (165).

At army headquarters (166), the chief of staff (167) was responsible for the supreme direction of the service of supply. Specifically, the army quartermaster (168) would work out the administrative orders and plans for the entire system of evacuation and supply (169). He was assisted in this by a field officer (170). But the army quartermaster, at that time, was also deputy chief of staff and, for that reason, had to be kept informed on all operations and tactical measures (171). Unusual personal circumstances existing at the headquarters First Army, during the Marne Campaign of 1914, caused the army quartermaster to interest himself to an unusual degree in tactical matters. He was moreover employed a good deal on very important missions (172), so that the details of the functions (173) of the army quartermaster had frequently to be taken care of, under his supervision, by the field officer assigned to him.

As the war went on, the functions of the army quartermaster in every army were gradually limited to those pertaining to the problems of army supply (174). The representation of the chief of staff in operations and tactical matters (175) devolved upon the senior general staff officer present (176).

Special preparations had been made in time of peace to assure the subsistence of the army in the concentration area (177) while it was being assembled according to schedule (178). General staff officers and supply (termed “intendance”) officials (179), who preceded the troops, made the first arrangements for shelter and subsistence. The
TWO ARMY CORPS MARCHING ON ONE ROAD

NO COMBAT IMMINENT:

1st Div

2nd Div

3rd Div

4th Div

1st Sec AM Col and TNS

2nd Sec AM Col and TNS

F and SERV TNS

SUBSIST COS (2 BAG SUPPLIES)

COMBAT IMMINENT:

1st Div

2nd Div

3rd Div

4th Div

1st Sec AM Col and TNS

2nd Sec AM Col and TNS

F and SERV TNS

SUBSIST COS (2 BAG SUPPLIES)

Plate IV
troops brought with them one day’s rations and grain (180). They were subsisted by the billet owners (181), from supplies purchased in open market (182) by the troop units, and from provisions previously stored in subsistence depots. The stores (183) carried in the subsistence companies were not considered available for consumption in the concentration area (184), so that it was possible to begin the advance to the front with subsistence vehicles loaded to full capacity in accordance with regulations (185).
CHAPTER II

THE MOVEMENTS (1) OF THE FIRST ARMY FROM
THE COMPLETION OF CONCENTRATION TO
SEPTEMBER 12, 1914

Section a.—The Advance (2) through Aix-la-Chapelle and
across the Meuse.

The First Army, during the period from August 7 to
15, effected its concentration in the region of Julich—Berg-
heim—Neuss—Krefeld—Erkelenz. It was composed of the
II, III, and IV Army Corps and the III and IV Reserve
Corps. Later these were joined by the IX Army Corps.
In addition the 10th, 11th, and 27th Landwehr Brigades
were assigned to this army.

To the south and alongside (3) of the First Army, the
Second Army was assembled under Colonel General (4)
von Bulow, in the area: Aix-la-Chapelle—Eupen—Malmedy
—Blankenheim—Schleiden—Euskirchen—Duren.

The letter of instructions directing the concentration
(5), which was handed to the Commanding General of the
First Army, during the mobilization, read in part as fol-
lows:

"The German concentration against France has the following
purpose:
The great bulk of the German field forces (6) will advance into
France through Belgium and Luxembourg. The advance will be
executed in the form of a turning movement (7) with Metz—Dieden-
hofen (8) as a pivot. The progress of this turning movement will
be governed by the advance of the right wing (9). The beginning
of the general advance of the German main forces will be ordered
by G.H.Q. as soon as the right wing (First and Second Armies) has
arrived at, and is ready in, the vicinity of Liege" (9½).

A prerequisite to this advance was the speedy capture
of Liege. This mission was entrusted to General von
Emmich, and he was placed in command of several brigades brought forward rapidly for this purpose. Initially, all the roads south of the Dutch border were placed at the disposal of the Second Army. The IX Army Corps, located at that time in the vicinity of Aix-la-Chapelle, was to join the First Army. Not until this corps was in position abreast of the II and IV Corps, was it possible for the First Army to begin its march on Aix-la-Chapelle. As soon as Liege had been taken, the Second Army was to clear the roads allotted to the First Army. These roads led through Aix-la-Chapelle and then across the Meuse, passing between the Dutch frontier and Liege. Thereafter the First and Second Armies were to place themselves in readiness in the vicinity of Liege for a further advance. The Second Army was then to advance directing its right on Wavre, and its left to the north of Namur. The First Army was to march on Brussels, and both were to cover the right flank (10) of the German field forces (11).

The II Cavalry Corps (2d, 4th, and 9th Cavalry Divisions) under General von der Marwitz, was placed, at the beginning of the advance, under the direct command of General Headquarters (12) and directed to proceed against the line: Antwerp—Brussels—Charleroi.

The detraining (13) of the active corps of the First Army, including ammunition columns and trains, was completed on August 14, that of its reserve corps on August 15. As early as August 13, the First Army began its advance through Aix-la-Chapelle, in conformity with instructions from General Headquarters. The situation (14) at Liege had clarified in good season, and the Second Army had vacated the roads between Aix-la-Chapelle and the Meuse north of Liege, thereby enabling the First Army to pass. The II, III, and IV Army Corps formed the first line and were followed by the III and IV Reserve Corps marching in second line. The IX Army Corps joined the First Army on August 15.

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(10) rechte Flanke
(11) des Heeres
(12) der Obersten Heeresleitung
(13) Ausladung
(14) Lage
There were three roads closely paralleling each other which led through the city of Aix-la-Chapelle and thence to the crossings of the Meuse. Two corps, marching in column, occupied each road and advanced in very dense formation, while passing through the city and over the area between Liege and the Dutch border. It was not until the left bank of the Meuse was reached (15) that the army could extend its front towards the right. The Meuse (16) was reached on the 14th and crossed on the 15th.

These difficult movements rendered necessary a number of special measures (17), which were taken after careful consideration. Four to five days were required to march the German troops through the narrow streets of Aix-la-Chapelle. A general officer, entrusted with special authority, preceded the forces in order to prepare and lead them in their passage through this defile. The three roads leading through Aix-la-Chapelle, which were to be used also by the several corps after passing through that city, are shown on the map (18) contained in von Kluck’s book. The general, who had been appointed commandant of Aix-la-Chapelle, was required to designate the routes of march (19) through the city. To this end, the thorough-

(15) erst jenseits der Maas  (18) see Plate V.
(16) Maas  (19) Marschtrassen
(17) besondere Maszregeln
fares had to be marked conspicuously for each army corps —without, however, disclosing its numerical designation, a precaution, necessary in order to maintain secrecy—and to be blocked against traffic from other parts of the city. Sketches showing the routes of advance along the streets selected had to be sent to the approaching army corps. The commandant was held responsible that the march through the city progressed without interruption (20) and that the troops would use no streets other than those assigned to them. The troops were strictly enjoined to obey implicitly all orders issued by the commandant. In order to render impossible every kind of interference, instructions had been given to the effect that, during the passage of troops (21), the city should be occupied only by division and corps headquarters (22) to the exclusion of all other headquarters and troops. The commandant of the city, at the proper time, had received one battalion of infantry to which a number of cyclists (23) were attached, and from each leading army corps a few mounted officers. Immediately after the passage of the troops had been accomplished, the commander of the communications zone (24) took over the city.

It was due to these measures that the troop movements through Aix-la-Chapelle were effected smoothly and without friction.

The arrangements made by army headquarters, for marching two army corps, one behind the other, on the same road, cannot well be treated separately from the subsistence arrangements (25) and the movements of ammunition columns and trains (26). They will, therefore, be discussed together, whereas the details of subsistence and the service of supply (27) will be taken up separately later on.

The general principles governing troop movements (28) which were at that time accepted in the German
Army, were applied in these arrangements (29) and proved entirely adequate. The arrangements made were based on a policy which prescribed that, from the beginning of the advance, on August 13, to the crossing of the Meuse, the troops should not consume any of the rations carried on the person, in the ration wagons, forage wagons (30), and subsistence companies; this to assure that the further advance beyond the Meuse could be effected rapidly and with trains fully loaded. It was, therefore, necessary to make special arrangements for the subsistence of the troops for about a week.

For this purpose subsistence (railway) trains (31) were despatched to suitable points along the line of advance, southwest of Aix-la-Chapelle. To these places the several army corps sent ahead the necessary supply personnel charged with the establishment of distributing points. Such localities were, for example, the railway stations of Bleyberg, Moresnet, Henry Chapelle, later on also Vise, Argenteau, and Wandre. In addition to the above, rations (32) were brought up by means of motor transport companies of the communications zone to several places, for instance to Berneau (northeast of Vise) and to Julemont (southeast of Vise). Every day the various army corps were informed as to the exact location of the distributing points at which rations were to be issued.

The main depot of the communications zone was initially at Dusseldorf. The supply lines (33) of the several corps were accurately defined by the assignment of existing railway lines (34) and highways (35) leading from the army corps to that city. During the entire march, both up to the Meuse and later, the routes of advance assigned to the army corps were delimited laterally, by definite boundary lines, from those of the neighboring army corps, as regards marching and shelter (36). While two army corps were advancing on one road, the senior corps
commander, designated in orders for the purpose, made all dispositions affecting the marching, shelter, subsistence, and replacement of supplies for both corps. Each division was habitually followed by its field and service trains, but, under certain conditions, by the subsistence vehicles only of these trains and by a two days' supply of rations carried, if possible, in subsistence companies. The first section of the combined ammunition column and trains and the remainder of the field and service trains (in cases where only the subsistence vehicles followed in the immediate rear of the division) followed the rear division of each army corps. (See Plate IV.) The second sections (37) of the ammunition columns and the trains of both army corps were united and followed at some distance behind the rear corps.

On August 17, the main depot of the communications zone was transferred to Aix-la-Chapelle.

The crossing of the Meuse necessitated special arrangements on the part of army headquarters. At the beginning of the advance all the bridge trains (38) of the leading army corps were brought up to march with, or at least in rear of, their leading divisions. The reconnaissance of the Meuse (39) to determine existing bridges and requirements in new construction (40) had already been entrusted to the leading corps commanders in army orders of August 12, the boundaries of the reconnaissance zones being fixed between the army corps. It was found that the bridges over the Meuse at Vise and Argenteau had been destroyed and that the bridge at Herstal could be used only for light traffic. The central control (41) over the restoration and construction of bridges rested (42) with the chief of engineers (43) of the First Army. The required military and emergency bridges (44) were completed at the proper time, without causing any delay in the advance of the various army corps.

For the crossing of the Meuse, detailed instructions from army headquarters were necessary in order to regu-
late the movements of the ammunition columns and trains. The problem to be solved was to bring the sections of the ammunition columns and trains, up to their respective army corps at the proper time, without crossing other columns (45) or delaying the march (46).

The entire movement of the First Army, difficult as it was, beginning with the concentration and ending with the crossing of the Meuse, was effected without friction or delay. The subsistence arrangements (47) that had been made proved adequate. Although army headquarters had looked forward to the advance with some concern, yet the dispositions had been so carefully thought out in every detail, that they were entirely successful. Beyond the Meuse, the development (48) of the army and its further advance could follow without loss of time. The speed of this movement completely surprised the enemy.

Section b.—The Advance up to the Battle of the Ourcq.

The movements of the First Army may be followed on the map contained in General von Kluck's book, "The March on Paris 1914" (49).

Soon after the Meuse had been crossed, the First and Second Armies as well as the 2d Cavalry Corps were placed by General Headquarters—"for the advance north of the Meuse"—under the Commanding General of the Second Army. This arrangement did not prove to be a wise one. It did not affect the services of supply, inasmuch as the First Army retained complete independence in this respect; the subordination of command (50) applied to operations only. The dispositions of the Commanding General of the Second Army, Colonel General von Bulow, were frequently based on views at variance with those held by the Commander of the First Army. In particular, General von Bulow was inclined, before the enemy was encountered, to draw the neighboring armies (51) close to the Second Army, whereas the Commander of the First Army desired
greater freedom of movement (52), to enable him to extend further to the west and envelop the exposed wing of the approaching British. The two army commanders also differed repeatedly as to the employment of the independent cavalry (53).

It seems fairly evident, to judge from the whole course of the World War (54), that the experiment of subordinating one army command (55) to that of another, has in each case failed to accomplish its purpose. The same expedient (56) was the cause of friction also in the Battle of the Somme. The headquarters of an army (57) is occupied by its own affairs to such an extent that it is in no position impartially to survey and estimate the situation existing in another army. The object of producing better teamplay (58) in the operations is usually not attained; this result can only be accomplished by the creation of a special high command, superior to the several armies concerned: namely, the army group (59). However the latter expedient, at that time, was known neither to us nor to our opponents. It was not until later that we began to organize army groups.

Throughout the advance in August and early in September, the First Army was at a disadvantage on account of the poor signal communication existing between the High Command and its own headquarters. The telephone units (60) were so weak numerically and so insufficiently equipped with improved matériel, that the signal communication between the two headquarters was chiefly maintained by means of the radio. However, this method did not admit of mutual discussion and, moreover, required much time, because there was only one receiving set (61) at the disposal of General Headquarters. Furthermore General Headquarters was located entirely too far to the rear. Even if in the future more ample and perfected equipment be available, it will always be necessary to send

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(52) Bewegungsfreiheit
(53) Heereskavallerie
(54) des Weltkrieges
(55) eine Armee
(56) Masznahme
(57) Armeeoberkommando
(58) grossere Einheitlichkeit
(59) Heeresgruppe
(60) Fernsprechtruppe
(61) Empfangstation
information officers (62) from General Headquarters to the various army headquarters. If the distance be very great, intermediate stations (63) equipped with motor vehicles for the transmission of orders (64) and the collection of reports, must be established.

Even within the army, because of its rapid advance, it was not always possible to establish telephone communication (65) in time. Moreover, lines (66) that had been established were frequently destroyed by the inhabitants. It became necessary, therefore, to resort to the old expedient of requiring each corps headquarters to send a representative to army headquarters daily, at a fixed hour, for the purpose of receiving orders for his unit.

On August 18, the general advance of the German armies began, in conformity with directives (67) from General Headquarters. On the 19th, the Belgians retired toward Antwerp (68). The First Army continued its advance by way of Brussels (69) and Mons in the direction of Peronne, repulsing the British at Mons and Le Cateau, and also the French forces appearing then on the Somme. Thereafter, on August 31, the army changed direction towards Compiegne, in order to exploit the Second Army's success at St. Quentin. This it sought to accomplish by advancing and enveloping the left flank of the enemy, who was retiring before the Second Army. On September 3, the First Army crossed the Marne east of (70) Meaux.

The commander of the Second Army had temporarily placed the 2d Division of the II Cavalry Corps under the command of the First Army, but had later on reunited all three divisions of this corps under his own command. On August 23, the entire cavalry corps was attached to the First Army. On several occasions, these changes of assignment (71) caused difficulties in the employment of the cavalry corps, resulting in unnecessary marches and over-exertion. From this the lesson may be drawn that the
orders for the employment of the independent cavalry must be prepared with the utmost care. If the cavalry has once been started in the wrong direction, it will often be impossible to remedy the mistake for several days. Thus, when the cavalry corps, after having been started by the commander of the Second Army from Ath on its march on Courtrai, was subsequently attached to the First Army, it became necessary to demand of it, on August 24, a counter march (72) toward Donain in order to give it the desired direction.

Section c.—Troop Movements during the Battle of the Ourcq.

On the evening of September 5, the First Army arrived in the vicinity of Coulommiers on the Grand Morin. The II Army Corps was west of Coulommiers, the IV Army Corps at Choisy, the III Army Corps at Saney, and the IX Army Corps at Esternay. Echeloned in rear of the right wing, was the IV Reserve Corps in the region north of Meaux. The III Reserve Corps, now dropped from the First Army, had remained behind in front of Antwerp. The 2d Cavalry Corps had pushed forward to the region between Coulommiers and Provins. Such was the situation confronting the First Army when, in compliance with orders from General Headquarters, it changed direction toward the northeastern front of Paris, into the area bounded by the Oise and the Marne. The mission (73) of the Second Army called for the occupation of a position in readiness between the Marne and the Seine facing Paris, and on the left of the First Army. Lieutenant Colonel Hentsch representing the High Command, having arrived at the headquarters of the First Army at Rabais, on the evening of September 5, emphasized that the movement of the First Army in the new direction should be executed with deliberation; that there was no need of hurrying.

The army was confronted with the difficult task of executing a retrograde turning movement (74) from the old front facing south to a new front facing southwest. Such a movement can be executed in several ways.

(72) einen Doppelmarsch  (74) Ruckwartsschwenkung
(73) Auftrag
The entire army may be faced to the rear and then execute a left turn; in that case, however, the several army corps would occupy the new front in reverse order.

Consequently, the ammunition columns and the trains, which move on the roads assigned to the several army corps leading from the latter's old position to the main depot of the communications zone, would have to be shifted to other roads. This could be accomplished only by the crossing of columns throughout (75).

So far as the execution of the march is concerned, the maneuver of the several army corps would thus be comparatively simple, whereas that of the ammunition columns and the trains would be extremely difficult.

By a second method the movement of the troops will be slower and that of the ammunition columns and trains simpler and more orderly, if the new front is established by means of a "flank march." The army faces to the right and then changes direction to the right (76). The order

(75) nur unter volliger Kreuzung
(76) vollzieht eine Hakenschwenkung
in line of the corps will then remain the same, the IX Army Corps still occupying its position on the left flank as before the execution of the movement.

In this manner, it is possible to retain the former supply lines of the various army corps, along which the columns and trains are moving. It is merely necessary to select new routes leading to the right, in the same relative order as heretofore.

However, a slow movement, such as the above, could not be considered at that time, because, by facing to the right, the army would have had to undertake a flank march (77) along the hostile front. Furthermore it would have to be constantly prepared, during the execution of such a movement, to face toward the south and engage any enemy forces (78) that might seek to attack it. Since, according to the statement of Lieutenant Colonel Hentsch, (77) einen Flankenmarsch (78) mit der Front nach Süden gegen den etwa nachdrängenden Feind in den Kampf zu treten

(77) einen Flankenmarsch (78) mit der Front nach Süden gegen den etwa nachdrängenden Feind in den Kampf zu treten
sufficient time was available, it was found expedient to adopt a compromise and initiate the movement by echelon (79), beginning on the right. It was the intention of the army commander to have the II Army Corps march, on September 6, as far as the region northeast of Meaux, the IV Army Corps as far as Boue and the III Army Corps as far as La Ferte Gaucher, while the IX Army Corps was to remain in place, for the time being at least.

It was hoped, on the following day, to continue the maneuver and then to bring the various army corps from this "echelonment" (80) into the new front, by changing direction to the west. It was only necessary for the army corps to withdraw their ammunition columns and trains the required distance in a northerly direction along the original routes, and then to direct them likewise toward the west to form in rear of the new front.

However, this maneuver was never executed. As early as September 5, the IV Reserve Corps, then north of Meaux, became engaged with the French Sixth Army (under Maunoury), which had debouched from the direction of Paris and advanced against the German right flank. It became necessary, during the night of September 5-6, to rush the II Army Corps to the support of the IV Reserve Corps. During the following days, the remaining army corps were conducted, by forced marches (81), to the Ourcq. While these troop movements were going on, it was impossible to preserve the original order in line (82) any longer. Each army corps was led, by the shortest route, to that position in line where, on account of the situation, its presence was most urgently needed. Nor was it possible to preserve the former order of battle (83); indeed, units became so mixed that it was necessary to organize so-called "battle groups" which were placed under the several corps commanders and named after them. The II Army Corps was put into line on both sides of the IV Reserve Corps; the greater part of the IV Army Corps took position on the right flank of the battle front (84); the
III Army Corps likewise between the right and left of the new front; the IX Army Corps was placed on the outer flank of the right wing (85).

In this manner the First Army entered the Battle of the Ourcq (September 5-9, 1914). There is no doubt but that the troops were suffering from over-exertion. They had been marching uninterruptedly ever since the beginning of the advance, without a single day of rest. Ever-increasing march performances (86) had been exacted from them in order to overtake the retreating enemy. Nor did the IV Reserve Corps, although its troops were not yet seasoned to the road (87), fail to keep up with the active corps. From August 17, after crossing the border until September 4, it had, though marching most of the time on one road, covered a distance of 480 kilometers. In other words, it had marched an average of 27 kilometers per day for 18 days. From August 31 to September 2, it covered 90 kilometers in 3 days.

The total march performances (88) of the various corps, up to the Battle of the Marne, was amazing. It is true, the men were now almost exhausted. This caused the various unit commanders (89) to point out to higher authority, with ever-increasing emphasis, the unfortunate results to discipline and readiness for action which such extraordinary march performances were bound to entail.

Such were the conditions under which the First Army entered combat. However, the greatest hardship (90) was yet to come. The several army corps hurrying to the battle-field (91) made marches that surpassed anything ever before accomplished. The IX Corps and the rear units of the III Corps had to be shifted from the left wing of the army to the right, in rear of the entire front, in order to envelop the hostile left. This maneuver (92) was greatly interfered with by the ammunition columns and trains operating behind the front. The IX Army Corps started from

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(85) den auszersten rechten Flugel (see situation map, Plate XXII).
(86) Marschleistungen
(87) einmarschiert
(88) die gesamte Marschleistung
(89) Truppenbefehlshaber
(90) das Schwerste
(91) Schlachtfeld
(92) Bewegung
the vicinity of Esternay at early dawn on September 7 and by midnight had reached the region of Chezy, in all a distance of about 60 kilometers. On September 8, the troops of these two corps started at 2:00 A.M. and, barring a brief halt at noon, the march continued all day long until late at night, covering again a distance of approximately 60 kilometers. On the morning of September 9, the IX Army Corps took part in the battle, in a decisive manner, by enveloping the French left wing and throwing it back.

The operation of the ammunition columns and trains (93) became exceedingly difficult in the days following September 6th. The main depot of the communications zone, at that time, was at Chauny. The supply lines (94) of the various army corps leading to this main depot had been fixed in “administrative orders” of the army, issued on the evening of September 3. From Chauny these lines extended, for the three army corps of the right wing, along the same road as far as Cuts. From here they ran by way of Crepy en Valois and Bets to the IV Reserve Corps; via Attichy to Lizy (on the Ourcq) to the II Army Corps; by way of Bierancourt—Villers Cotterets—Crouy—la Ferte s. Jouarre to the IV Army Corps. The supply line from Chauny via Longpont (northeast of Villers Cotterets) to Charly was assigned to the III Army Corps, while the route: Chauny—Coucy le Chateau—Neuilly St. Front—Chateau Thierry was set aside for the IX Army Corps.

Diagrammatically the supply lines would look thus:
As previously stated, the change of front of the army toward Paris was to be executed on September 6th, in such a manner that the left wing (IX Army Corps) would remain in place for the time being, while the other army corps, beginning with the right flank, were to retire by echelon (95) far enough to enable the army to change direction to the right (96) and to retain the original order of the corps in line. Army headquarters (97) was compelled to intervene in the administrative orders (98) of the army corps regulating the movements of ammunition columns and trains. So it ordered, on the evening of September 5, that the II Army Corps should send back (99) its ammunition column and trains via La Ferte sous Jouarre on the road to Vendrest—Crouy; the IV Army Corps was allowed, for the time being, to leave its ammunition column and trains on the road originally assigned. The III Army Corps was required to send the 1st Section (100) of ammunition column and trains to Charly sur Marne (on the northern bank of the Marne) and its 2nd Section to Licy-Clignon. The 1st Section of ammunition column and trains of the IX Army Corps was near L'Epine aux Bois and the 2nd Section near Rozoy; this army corps was ordered to send both sections by way of Nogent to the northern bank of the Marne (101), into the region east of the road: Coupru—Domptin—Charly sur Marne.

At the same time, it was announced (102) that the movements of ammunition columns and trains would henceforth be directed daily in orders from army headquarters. The army corps were to detail field officers (103) for the purpose of superintending the orderly crossing of the Marne by the ammunition columns and trains.

In compliance with the army administrative order for September 6, issued on the evening of the 5th, the ammunition column and trains of the II Army Corps had cleared (104) the routes of march of their corps and had, at the

(95) Staffelweise
(96) nach rechts abschwenken
(97) das Armee-Oberkommando
(98) Anordnungen
(99) abzuschieben hatten
(100) die 1. Staffel
(101) auf das nordsche Marneufer
(102) befohlen
(103) Stabsoffiziere
(104) freigemacht
MOVEMENTS—COMPLETION OF CONCENTRATION

Plate XI
same time, been shifted (105) to the rear and to the east, partly by using the roads of the original supply line (106) of the IV Army Corps; the latter, for the time being, had ordered its trains to remain in place. The trains of the two other army corps (III and IX) were shifted over to the northern bank of the Marne, those of the III Army Corps, in addition, somewhat to the east.

During the next few days, the ammunition columns and trains of the various army corps were moved, in a northeasterly direction, to a position in rear of the line: La Ferte Milone—Chateau Thierry. The roads assigned to the several army corps approaching the battle-field (107) had been cleared for that purpose. These changes of position were executed as follows: the ammunition column and trains of the IV Army Corps were shifted via St. Gengoulph—Neuilly St. Front; those of the III Army Corps, as already mentioned, on the Charly—Licy Glignon road; and those of the IX Army Corps to the Chateau Thierry—Bezu St. Germain road.

When, on the evening of September 9, it became necessary, quite unexpectedly, to retreat in an almost northerly direction, extraordinary difficulties (108) were experienced in handling the ammunition columns and trains. Heretofore it had always been considered essential, as a preliminary to the execution of a retreat, that the ammunition columns and the trains be sent off first to enable them to obtain a good start (109). The suddenness of the decision (110) precluded, in this case, any such action. Besides, the exact location of the various sections (111) of ammunition columns and trains was not known at army headquarters. It was further necessary to cause the ammunition columns and the trains to change direction for a second time, toward Soissons, and later to pass over the Aisne by means of existing crossings (112). The object was, first of all, to clear the routes of march (113) for the various army corps as
rapidly as possible, and to get the ammunition columns and the trains across the Aisne with the utmost speed. It became necessary for army headquarters, during the retrograde movement (114) to the north of the Aisne, to take special measures for the purpose of assuring subsistence (115) and replenishment of ammunition (116). Army headquarters resorted to the expedient of placing Colonel v. Berendt of the staff in complete charge of the operation of the ammunition columns and the trains and gave him the necessary oral instructions. Army orders of September 10 required all commanders of ammunition columns and trains to report in person to Colonel v. Berendt at Soissons on September 11, at 6:00 A.M.

On the evening of September 10, loaded motor transport companies of the communications zone (117) were sent from Chauny to each battle group (118), to report at designated rendezvous points where the group commanders (119) would direct them to the front. In order to effect the replacement of ammunition (120), the commander of the communications zone (121) was required to send all his ammunition companies forward to Soissons. Army corps commanders had to designate the places to which they desired to have the ammunition forwarded from Soissons.

The Aisne was crossed on September 11 and 12. Routes of march and crossing points (122) had been definitely assigned to the army corps and to their field and service trains, as well as to the ammunition columns and the trains. The crossing effected, the corps commanders were thereafter to arrange for sending ahead field and service trains, ammunition columns and trains, as well as to station officers at all defiles (123), towns, villages, and bridges; these officers were held responsible for the orderly progress (124) of the vehicles.
In order to reorganize the thoroughly disrupted army the following procedure was resorted to: those small units of the several battle groups (125), which did not belong to them organically (126), were required to remain behind in rear guard positions south of the Aisne; the remaining units of each battle group crossed the Aisne and, north of that river, marched to assembly positions assigned to the several divisions. When the latter were reorganized (127) the rear guards (128) followed across the Aisne, and then joined their respective units (129). The places of assembly of the first and second sections of the ammunition column and trains of each army corps were designated by army headquarters. Numerous mimeograph sketches (130) showing the new positions of the army north of the Aisne were issued, and made available at all crossing points, in order to assist stray bodies of troops (131) in the location of their units.

On September 12, the First Army, sufficiently reorganized, stood north of the Aisne and was once more prepared to offer resistance. On this very day, it became again engaged in combat with the enemy who was coming up.

Motor transport companies of the communications zone (132), carrying subsistence supplies (133), et cetera, were dispatched by the communications zone commander to the assembly areas (134) of the various corps. Regular traffic (135) of ammunition columns and trains in the rear of the corps was resumed after the reorganization had been effected.

Naturally, the movements of the troops, as well as those of the ammunition columns and trains, during the Battle of the Ourcq, and the retrograde movement (136) behind the Aisne, were not accomplished without intense
friction here and there. The various army corps, in these movements, established communication with each other, as instanced by the III and IX Army Corps; the latter, during its march on (137) La Ferte Milon, was compelled to cross repeatedly the roads (138) assigned to the field and service trains, and the ammunition column and trains, of the III Army Corps. The III Army Corps would direct its trains, when occasion arose, to halt and permit the troop units (139) of the IX Army Corps to pass through.
CHAPTER III
RATION SUPPLY SYSTEM (1)

Section a.—Subsistence in the Concentration Area (2).

The supply of subsistence was effected in the manner described above, on the basis of most minute preparations made in time of peace. Railway trains carrying provisions were sent ahead to Herzogenrath, Kohlscheid, Baal, Wurselen, Alsdorf, Kirchberg, Stolberg, and Inden, in the concentration zone (4).

Section b.—Subsistence during the Advance (5) through Aix-la-Chapelle and across the Meuse.

The most important measures have already been discussed in connection with the subject of march dispositions (6). Pursuant to instructions from army headquarters, the ration trains mentioned above were sent forward by the commander of the communications zone (7), acting in conjunction with the “unloading commissary” (8), who was stationed in the concentration area as representative of the director of military railways (9). Later on, the commander of the communications zone acted in direct cooperation with the proper military railway directorate (10). These ration trains were placed in readiness southwest of Aix-la-Chapelle, in the vicinity of the three routes of advance, at the railway stations of Bleyberg, Moresnet, etc. Here distributing points (11) were established. Furthermore the commander of the communications zone sent forward motor transport companies (12) which, contrary to the usual practice, did not on this occasion refill the corps subsistence companies (13), but distributed rations directly to the troops. In so doing, the trucks were com-
pelled to forge ahead past the marching troops; however, this was an inconvenience which could not be avoided. The march to the Meuse was made under conditions which demanded that two corps march on each of the three available roads. This made a relay system of supply (14) by means of the corps subsistence companies impracticable. The immediate requirements of the troops were therefore taken care of by issue from the distributing points of the railway subsistence trains (15) and from the motor transport companies.

To illustrate,—on August 14, three motor transport companies of the communications zone carried rations (16) for the II Army Corps and the Cavalry Corps to Berneau (northeast of Vise), while another such company brought rations for the IV Army Corps to Julemont (southeast of Vise). Unconsumed stores (17) at the distributing points were taken over by the communications zone, the commander of which had to be notified in each case by the corps commander concerned. It was, however, possible to issue some of the surplus stores to the army corps following next in line.

Section c.—Subsistence during the Advance up to the Battle of the Marne.

As a rule, subsistence was effected in accordance with original plans. Special difficulties arose on account of the extraordinary rapidity of the advance, with which the reconstruction (18) of the railways was unable to keep up. Moreover, the assignment of motor transport companies (19), as originally planned, proved inadequate. The army relieved the situation by making use of a volunteer motor transport park (20), which had been organized at Aix-la-Chapelle. Details regarding this park will be given later on when the ammunition supply service (21) is discussed.

An agreement had been effected with the Second Army, by which the railway subsistence trains arriving over the

(14) ein Pendelverkehr
(15) Verpflegungszüge
(16) Verpflegung
(17) Restbestände
(18) Herstellung
(19) Lastkraftwagenkolonnen
(20) Kraftwagenparks
(21) Munitionsnachschubes
common railway line (22) *via* Liege were equally divided, one-half of the subsistence going to the First, the other half to the Second Army. As soon as the operation of this railway *via* Liege was extended as far as Tongres, the commander of the communications zone forwarded subsistence and ammunition (23) to this point. From Tongres, motor transport companies of the communications zone carried the supplies to the foremost army corps (24), whereas heavy supply companies of the communications zone provided for the army corps in rear. The several army corps notified the communications zone commander of (25) their requirements. On August 20, for example, motor transport companies of the communications zone proceeded to Rotzelaer, Louvain (26), and Mille Tourinnes.

The supplies found in large cities were utilized. Thus, a subsistence depot (27) was set up at Brussels. Deliveries (28) were exacted from this city by means of requisitions. On August 22, the city and province of Brussels were ordered to furnish, for cash payment, additional supplies [beef-cattle (29) and fresh meat excepted] to cover at least one day’s requirements for four army corps. The manner in which subsistence supplies were shipped to the front by means of narrow-gauge railways (30) will be described under the heading of “Railways.”

In Amiens the IV Reserve Corps found subsistence supplies (31) in considerable quantities. They were placed at the disposal of that army corps by army headquarters.

Notwithstanding the special difficulties described, the service of subsistence supply (32) was, on the whole, satisfactory throughout the entire period. To be sure, scarcity of rations and ammunition did occur at times, but that is not surprising when the rapidity of the march is considered. However, the readiness of the troops for action (33) was at no time impaired thereby.

(22) gemeinsamen Eisenbahnlinie (27) ein Magazin
(23) Verpflegung und Munition (28) Lieferungen
(24) zu den vorderen Armee­korps (29) Vieh
(25) Etappeninspektion (30) durch Kleinbahnen
(26) Lowen (31) Verpflegungsvorräte
(32) die Verpflegung (32) die Schlagfertigkeit
der Truppe
Nor would insurmountable difficulties have been experienced, had the outcome of the Battle of the Marne been favorable (for the Germans), and operations been continued to exploit the success (34). Supplies could have been forwarded by rail, but the bringing up of replacements of men (35) would have caused difficulty.

It was a decided advantage for us that the advance took place in a rich country and during a favorable season of the year. For this reason, it was possible to procure a comparatively large part of the subsistence supplies in the theatre of operations (36). Meat, sugar, condiments (37), and wine could be requisitioned (38) in large quantities. Requisitioning without authority (39) was strictly prohibited, in order to prevent it from degenerating into pillage (40). Only such supplies as the troops required for their immediate needs were allowed to be obtained by requisition (Order of August 26). In every case, a receipt (41) had to be given by the officer in charge. On September 3, an order was issued, in pursuance to an official announcement (42) by the Chief of Staff of the Field Forces (43), making it mandatory to pay cash for all supplies requisitioned by the troops.

As a rule, the oat-shocks (44), that stood in the field, or other standing forage was fed to the horses. Whenever opportunity presented itself, the mounted troops would load as many sheaves on their vehicles as the latter could carry.

The rolling kitchens (45) were a marked success in that they were able to furnish to the foot troops a tasty cooked meal, immediately upon the completion of a march or during a long halt. It may be stated that the amazing marches performed by the First Army could not have been made without the rolling kitchens.

It was only the bread supply service (46) which failed to keep pace with the advance. The field bakery companies

(34) um den Erfolg auszu-
(35) des Mannschaftersatzes
(36) aus dem Lande
(37) Zucker
(38) Konnte beigetrieben
(39) unbefugtes Beitreiben
(40) Plunderung
(41) eine Quittung
(42) auf Grund einer Prok-
(43) des Feldheeres
(44) Hafergarben
(45) die Feldkuchen
(46) die Brotversorgung
were unable to halt long enough to complete the process of baking, at the various places where they set up; before the bread had been baked they were compelled to follow their respective units. However, the scarcity of bread gave no cause for grave concern as the rationing otherwise was very good.

The ration issue was simplified by the favorable season of the year, which permitted the troops to bivouac, as a rule. In view of the prevailing fair weather, this practice had no disadvantages.

I have stated before that the bringing up of personnel replacements by rail was beset with difficulties. However, it did not become really vital until after the Battle of the Marne. The mail followed the troops slowly, a little at a time, which created dissatisfaction among the men.

Special measures with regard to the supply of rations and especially of oats became necessary, in the case of the cavalry corps. At the beginning of the general advance, on August 18, the 2d Cavalry Division was attached to the First Army. It was, at that time, in rear of the right wing near Aerschot and did not reach its position on the right of that wing, at Wolverthem, until August 20th. At this juncture, the 2d Cavalry Division was placed once more under the command of the Second Army and reverted to the II Cavalry Corps.

The cavalry corps reached the vicinity of Ath on the 22nd and was then started in the direction of Courtrai. The cavalry corps, having been placed under the First Army on the 23rd, was ordered by the latter to close in, with Denain as march objective. The corps was thus compelled, as I have mentioned earlier in this treatise, to execute a counter march. The changing assignments of
the cavalry and the resulting changes in the missions entrusted to it, as well as the repeated marches back and forth (55), rendered the subsistence of the troops most difficult, a result to be expected. A shortage of oats existed early in the operations (56). Although every cavalry division (57), had at its disposal a cavalry motor transport company (58), this proved inadequate in view of the great distances to be covered. The preparations formulated in time of peace had been based on the assumption that the cavalry divisions would live mainly on the resources of the theatre of operations (59). This method turned out to be inadequate, owing to the rapidity of the advance. Rations and grain (oats) had to be sent forward to the mounted troops, some directly by the communications zone and some by designated corps which had been ordered by army headquarters to forward these supplies (60). For example, the II Army Corps was required, on August 14, to send rations and grain to St. Trond. On August 16, two other transport companies of the communications zone carried oats for the 2d Cavalry Division via Herstal—Tongres to Wimmertingen (south of Hasselt). When, on August 20, a report was received from the 2d Cavalry Division to the effect that it had been without rations and forage for the preceding two days, the Communications Zone and the II Army Corps, to which this division had been attached for subsistence (61), were directed to forward the necessary supplies (62). After the entire II Cavalry Corps had been placed under the command of the First Army, the 4th Cavalry Division was attached to the IV Army Corps, and the 9th Cavalry Division to the III Army Corps for subsistence. On August 30, the cavalry corps rendered another report to the effect that it had been suffering for some time from shortage of rations (63). Army headquarters then pointed out to the communications zone commander that his principal effort must be to re-

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(55) die Hin-und Her-marsche
(56) Hafermangel
(57) Kavalleriedivision
(58) Kavalleriekraftwagon-kolonne
(59) aus dem Lande
(60) Aushilfe
(61) Verpflegungsaushilfe
(62) Nachschub
(63) Verpflegungsmangel
plenish the subsistence supplies of the cavalry by means of motor transport companies. The cavalry corps was ordered to indicate to the commander of the communications zone, the points to which supplies were to be sent. About the same time, the cavalry corps experienced a great scarcity of horseshoes; a shipment of horseshoes from the communications zone was forwarded to Peronne.

The daily routine of subsistence (64) within the several army corps was, in general, accomplished as it had been planned in time of peace. The following activities were regulated by the army corps in daily orders:

(a) the refilling (65) of the empty subsistence companies of the corps from subsistence depots, or from refilling points (67) established by the advance supply companies of the communications zone (66);  
(b) the movements and march objectives (68) of the ammunition column and trains of the corps;  
(c) the bringing up of individual subsistence companies to designated points for the purpose of refilling (69) the ration wagons and forage wagons of the several divisions;  
(d) the return of empty companies to the refilling point;  
(e) the subdivision into sections (70), a daily change made necessary by the above;  
(f) the bringing up of a combat echelon (71) whenever combat seemed imminent;  
(g) the movements of field and service trains, whenever necessary;  
(h) the activities of the field bakery companies (72).

Section d.—Subsistence during the Battle of the Ourcq.

The movements of the ammunition columns and the trains, during this period, have already been mentioned in the description of the movements of the troops. Owing to the fact that the movements of the personnel of the army corps frequently crossed the routes assigned to the ammunition columns and trains, it was impossible to avoid a good deal of friction (73). During these days, the several army corps resorted to various expedients to obtain subsistence. Thus the III Army Corps was able to refill on September 7 from a subsistence depot established in Charly and to send
its ration wagons and forage wagons there on the 8th, to draw rations (74). On September 10, during the retrograde movement (75), a motor transport company of the communications zone (76), which had been dispatched to meet the III Army Corps ("Group Lochow"), unloaded half its contents at Coeuvres et Valsarie for one division, and the other half at Laversine for another division. I have previously mentioned the subdivision into battle groups which had, of necessity, replaced the corps organization during the Battle of the Ourcq. Army headquarters had ordered that two motor transport companies should be sent, on the evening of September 10th, to Chaudun to meet "Group Linsingen," and one motor transport company each to meet "Group Quast" at Chelles, "Group Arnim" at Vivieres, and the cavalry corps at Rozieres. These groups then sent their orders to the companies at the places named. The bringing up of motor transport companies of the communications zone to the new shelter areas (77) of the several army corps was ordered for September 11.

Notwithstanding all these measures, it became necessary, as a matter of course, to have recourse to the reserve ration (78) more than once during the battle.
CHAPTER IV
THE COMMUNICATIONS ZONE (1)

As the army advanced, orders from army headquarters correspondingly advanced the forward boundary (2) of the communications zone (3). Thus, on August 13, this boundary extended to the rear border of the shelter areas (4) of the army corps marching in second line (III Army Corps and IV Reserve Corps). On August 19, the forward boundary of the communications zone was moved ahead as far as the Meuse; on August 24, as far as the line: Ninove—Hal—Waterloo; at the end of the month, to the line: Albert—Peronne—St. Quentin; and thereafter it advanced as the army advanced.

The main depot (5) of the communications zone was transferred to Aix-la-Chapelle on August 17, to Tongres on August 21, to Hal on August 25, to Cambrai on August 30, and on September 5 to Chauny, where it remained.

Special “military governments of occupation” (6) were organized at Liege and Brussels, and, later on, a “general military government of occupation” (7) was established at the latter place.

The limits of the communications zone between the First Army and the Second Army were fixed, in orders issued by the Quartermaster General (Deputy Chief of Staff) (8) at General Headquarters. On August 30, for example, the boundary was the line: Le Cateau—Bohain—Homblières.

The commander of the communications zone was held responsible for the security (9) of the communications net, (10) including railroads, roads, bridges, military stations (11), and telegraph lines. For this purpose, con-
tingents of the "landwehr" (12) were assigned; later on "Landsturm" (home reserves) troops (13) were used. In the combat zone (14), army orders required that the various army corps take immediate steps, within their respective zones of action, to ascertain the physical condition of the railroads and provide for their security until such time as the areas could be taken over by the communications zone. When necessary, the railway sections (15) to be guarded were specifically assigned by the army to (16) the corps concerned.

In order to maintain liaison between the communications zone and the various army corps, it was ordered that a general staff officer representing the commander of the communications zone should report daily at army headquarters, at the hour fixed for the distribution of orders (17). On that occasion, the representatives of the various army corps were to communicate to him their requirements (18) and to inform him of the places where, on the following day, the tails of the second sections of their ammunition columns and trains would be located; thus the communications zone commander was enabled to regulate the operation of his own ammunition companies and trains (19) accordingly.

The supply lines (20) connecting the various army corps with the communications zone were fixed, in each case, in army orders. A few examples may serve to illustrate this.

On August 25, the main depot of the communications zone was at Hal. The forward boundary of the communications zone was the line: Ninove—Hal—Waterloo. The supply lines of the several army corps, the heads of which (21) on that day had reached the general line: Bouchain—Solesmes—Aulnoye, extended to the rear (22) as follows:

II Army Corps: *via* Louvain—Brussels (north)—Ninove—Grammont—Ath—Leuze—Peruwes;

(12) Landwehrtruppen  (13) Landsturmbtruppen  (14) Im Operationsgebiet  (15) die Strecken  (16) genau bezeichnet  (17) zum Befehlsempfang  (18) ihren Bedarf  (19) der Etappenkolonnen  (20) die ruckwartigen  Verbindungen  (21) mit den Aufangen  (22) liefen
IV Army Corps: *via* Louvain—Brussels—Castre—Enghien—Silly—Chievres—Neufmaison—Grandglise;
IX Army Corps: *via* Tirlemon—Opvelp—Mille Tourinnes—Overyseche—Braine le Chateau—Tubize—Braine le Comte—Soignies—Casteau;
III Reserve Corps: *via* St. Trond—Tirlemon—Winghe St. Georges;
IV Reserve Corps: *via* Tirlemon—Louvain—Brussels—Castre—Enghien—Ath.

On August 27, the supply lines of the army marching on Peronne, connecting it with the main depot of the communications zone at Hal, were fixed as follows:

II Army Corps: Hal—Enghien—Ath—Louze—Conde—Valenciennes (western outskirts)—Cambrai (northern outskirts)—Ba-paume;
IV Reserve Corps: Enghien—Ath—Louze—Conde—Valenciennes (western outskirts)—Cambrai—Le Pave—Fins;
III Army Corps: Hal—Saignies—Mons—Quievrechain—Le Quesney—Englefontaine—Montay (north of Le Cateau)—Marets—Belli-court;

In a similar manner, supply lines (23) were established to connect with the main depot of the communications zone at Cambrai, on August 31, and with the main depot at Chauny on September 3.

After the more serious engagements had begun, the number of prisoners captured began to increase. Army headquarters then designated collecting points (24), to which the various army corps were required to send their prisoners. Such a place, for example, was Hal on August 24. There the army communication zone commander became responsible for the security (25) and subsistence of the prisoners and also for their evacuation (26) to Liege. The military government of occupation of Liege was charged with forwarding the prisoners of war from Liege to the zone of the interior (27).

(23) Verbindungen (26) weitere Beförderung
(24) Sammelpunkte (27) nach der Heimat
(25) die Bewachung
CHAPTER V

AMMUNITION SUPPLY SYSTEM (1)

The various army corps requisitioned for ammunition (2) on the commander of the communications zone, sending at the same time a copy of the requisition to army headquarters. At the beginning of the movements, the communications zone commander had at his disposal the stores of ammunition which had been designated as the "first requirements of the ammunition service" (3). These were held in readiness in railway trains, placed on sidetracks (5) at convenient points between the main depot and the base (4) of the communications zone. The subsequent replenishment (6) of the ammunition reserves in the communications zone (7) was effected by the Chief of the Field Munitions Service (8) at General Headquarters, in response to requisitions submitted by the communications zone commander. The Chief of the Field Munitions Service exercised jurisdiction over the railway ammunition trains (9) held at the various artillery depots (10) in the zone of the interior, which trains had been organized according to plan, and placed at his disposition by the War Ministry (11).

The commander of the communications zone advanced these railway trains as close to the front as possible. On August 16th, for example, Army headquarters directed that the ammunition trains be brought forward on the Liege—Tongres railway line. This was done by the chief of munitions of the communications zone (12), in cooperation with the proper military railway directorate (13). At the railheads (14) temporary ammunition refilling points or am-

(1) Munitionsnachschub (9) Munitionssuppe
(2) ihren Munitionsbedarf (10) Artilleriedepots
(3) die Bestande des ersten (11) durch das Kriegs-
Bedarfs des Munitionsnachschub ministerium
(4) Sammelstation (12) durch den Etappen-
(5) in abgestellten Eisen-
munitionschef
bahnzügen (13) Militaireisenbahndirek-
(6) die weitere Auffullung tion
(7) Etappenbestande (14) An den Endpunkten
(8) Feldmunitionschef
munition depots (15) were established and provided with the necessary personnel.

Although the reconstruction of the railway lines was comparatively rapid, it was impossible, owing to the rapidity of the advance, to avoid the rather excessive distances separating the railheads (16) from the troops. The available eight ammunition companies of the communications zone (17) were, therefore, compelled to execute long marches in order to carry the ammunition from the railheads forward to the army. It soon became evident that the number of motor transport companies assigned was quite inadequate. The ammunition companies of the communications zone would discharge their loads at points accessible to the corps ammunition columns, and would then return to the communications zone. At these refilling points (18) the corps ammunition columns would replenish their loads. Every day, at the assembly of officers for orders at army headquarters (19), the various army corps would communicate their requirements in ammunition (20) of every description to the representative of the communications zone. In this manner, it was possible to direct the various corps ammunition columns to the refilling points (18) that had been established. In an emergency, ammunition companies of the communications zone would be sent directly to the front, likewise, motor transport companies of the communications zone utilized to haul ammunition (21).

Thus, after the Battle of Mons, the army corps were notified, in army orders of August 24, that motor transport companies of the communications zone would deliver ammunition for the individual corps to four different refilling points (22). The army corps were required to furnish the necessary guards for the protection of the ammunition and the labor for unloading and reloading it.

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munitionsdepots (15) waren eingerichtet und besetzt mit der notwendigen Personal.


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(15) Munitionsdepots  (19) beim Befehlserhalt
(16) Bahn ENDpunkte der  (20) Bedarf an Munition
(17) Etappenmunitions-  (21) zur Munitionsbeförderung
kolonnen  (22) Ausgabestellen
(18) Ausgabestellen
On August 26, during the Battle of Le Cateau, orders were issued directing that ammunition refilling points (23) be established for August 27 and 28 as follows: for the II Army Corps at Cambrai, for the IV Reserve Corps at Avesnes-lez-Aubert (midway between Cambrai and Solesmes), for the IV Army Corps at Solesmes, and for the III Army Corps at Le Cateau. The communications zone commander (24) was required to get the ammunition to those points.

These special measures had been taken by army headquarters in order to insure a speedy replenishment of expended ammunition (25) after the Battle of Mons, on August 23, and the Battle of Le Cateau, on August 26.

On the days following, the requirements in ammunition (26) were considerably less, since no engagements of importance took place. It was now a matter of making the transportation of ammunition (27) keep pace with the rapid advance of the army, so that in the event of combat the necessary ammunition reserves would be promptly available. Army headquarters, therefore, issued orders on August 31 to the effect that the loaded ammunition companies of the communications zone, which had been sent ahead, were to follow the army corps as a rolling reserve (28) until their contents could be transferred to the corps ammunition columns. Thereafter, they were to return to the communications zone to be refilled. On the other hand, the motor transport companies of the communications zone, sent up to the various army corps with ammunition, were not, under any circumstances, to follow the corps with their loads; the few companies of this kind were urgently needed for the service of supply in general (29). They were to be unloaded at once and returned to the communications zone. In the operation of the ammunition supply service (30) also, the fact was disclosed that the number
of available motor transport companies was entirely insufficient.

During the Battle of the Ourcq, army headquarters ordered the communications zone to send ammunition directly to the troops, because a regular ammunition service (31) on part of the corps columns was out of the question.

During the retirement behind the Aisne, the ammunition companies of the communications zone were sent ahead to meet the retreating army corps. Since the decision to retreat was entirely unexpected and march dispositions (32) had in consequence to be made very hurriedly, army headquarters, on September 10, directed the communications zone commander to send all available ammunition companies to Soissons, to meet the various corps. The army corps were directed to report to the commander of the ammunition companies at Soissons, their requirements and the points to which they desired the ammunition sent.

Generally speaking then, one may say that no fixed scheme (33) for the ammunition supply service (34) was followed, but that the methods employed were altered in accordance with the situation.

There was no shortage of subsistence during the Battle of the Marne; similarly there was no shortage (35) of ammunition which might have had a decisive influence upon the course of that combat or upon the situation after the battle.

With the transition to stabilized warfare (36) behind the Aisne, the routine of ammunition supply changed. In conjunction with the communications zone, army headquarters directed the establishment of a number of ammunition depots of more than ordinary size, which were located a short distance in rear of the front and beyond effective range of the enemy’s artillery fire (37). The ammunition supply service (38) was thereafter directed entirely by

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(31) eine regelmässige Pendelbewegung
(32) Anordnungen fur die Marsche
(33) Kein bestimmtes Schema
(34) fur das Nachfuhren und Erganzen der Munition
(35) Mangel
(36) Stellungskrieg
(37) ausserhalb des wirk-samen feindlichen Artillerie-feures
(38) die Munitions versor-gung
army headquarters. The various army corps would submit requisitions (39) to army headquarters, which would distribute the ammunition in accordance with the necessities of each corps. The depots were replenished from railway ammunition trains for which, as a rule, army headquarters would requisition upon the chief of the field munitions service (40). These trains were sent forward to the depots, with the assistance of the communications zone.

In this connection, mention should be made of the fact that the First Army, at the beginning of its advance towards the Meuse, was materially assisted by the volunteer motor transport park (41) which, as stated before, had been assembled by an enterprising citizen of Aix-la-Chapelle. It consisted of all types of motor trucks (42), passenger cars (43) and busses (44), totalling nearly 300 vehicles, which were appropriately organized. This park of motor vehicles was utilized for the transportation of ammunition, subsistence, and the sick and wounded (45).

Generally speaking, the ammunition supply service, during the entire advance of the First Army, proved adequate, notwithstanding friction here and there (46); nor did it break down during the Battle of the Marne. The crisis in the ammunition supply did not occur until later, and it was not caused by inadequate transportation, but by insufficient ammunition reserves in the zone of the interior. Germany, like France, had not anticipated such a tremendous increase in the consumption of ammunition (47).
CHAPTER VI

THE MEDICAL SERVICE IN REAR OF THE COMBAT ZONE

Prompt evacuation of the field hospitals (1) set up by the combatant troops (2) was necessary in order to enable these hospitals to follow their various units. Therefore, all transportable cases (3) were forwarded to the communications zone at the earliest possible moment. Thereafter, the personnel and materiel of the field hospitals of the combatant troops were replaced by personnel and materiel of the communications zone, and the hospitals were now designated evacuation hospitals (4). For the operation of these evacuation hospitals the surgeon of the communications zone had at his disposal a number of hospital directors (5) and an evacuation hospital battalion (6). The main depot of the communications zone included a medical depot (7), which contained the necessary supplies for the medical service (8); these were replenished from the medical supply section (9) of the general supply depot (10) at the army base (11). The communications zone commander established station hospitals (12) within his zone as they were needed. The evacuation service of the communications zone (13) was charged with the return to the zone of the interior of all transportable cases (14).

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(1) Feldlazarette
(2) von den Truppen
(3) beforderungsfahige Verwundete
(4) Kriegslazarette
(5) Kriegslazarettdirektoren
(6) eine Kriegslazarettabteilung
(7) ein Sanitätsdepot
(8) Sanitätsdienst
(9) Sanitätsabteilung
(10) des Guterdepots
(11) Sammelstation
(12) Stappenlazarette
(13) Krankentransportabteilung
(14) aller Beförderungsfähigen
CHAPTER VII

RAILWAYS

The fact that, despite its rapid advance, the efficiency of the First Army was not impaired, is due primarily to the railroads (1), which made possible the service of supply. Only by using railways, is it possible to concentrate, move, and subsist forces numbering millions of men (2), and to bring up supplies of all kinds whereby the readiness for action (3) of modern armies can be maintained. Everything, therefore, depended on the rapid reconstruction of the railways in enemy territory and on resuming railway operation (4) as quickly as possible. A great task had thus devolved upon the railway troops (5), the accomplishment of which was the primary requisite for subsequent military operations not only of the First Army, but of the entire field forces (6).

Owing to the small number of railway engineer troops (7) available for construction work, it was necessary, from the start, to limit reconstruction (8) to a few important and advantageously located double-track lines that had suffered little damage (9) and could, therefore, be restored quickly. In this work of reconstruction (10) the main purpose was to rebuild the line that it could be used throughout for the operation of standard military trains (11). Sections with an operating capacity less than this invariably lowered the capacity of the entire line, of which they formed part.

The experiences of the war have demonstrated that standard-gauge railways (12) only are able to meet the extraordinary requirements of the field forces. Military narrow-gauge railways (13) can never be an adequate substitute for standard-gauge railways in open warfare.
movement) (14). The time required for their construction is not compensated for by the amount of service they render. On the other hand, narrow-gauge railways, during the subsequent period of stabilization, became of great importance since they provided the connecting link between the railheads and the front line (15). For the purpose of utilizing the stores collected in Brussels, the First Army established, on August 22, a narrow-gauge railway service (16) from Brussels to Ninove—Vollezeele (south of Ninove), and also to Castre and to Hal, whereby subsistence supplies were shipped to the individual army corps. This, however, was an expedient for temporary use only.

The organization of the military railway service (17), at the beginning of the war, was as follows: The highest authority in this service was the director of military railways (18) at General Headquarters who, in accordance with the instructions of the Quartermaster General (Deputy Chief of Staff), controlled the entire railway service. Under him were all the various organizations engaged in the construction and operation of railways (19); a number of military railway directorates (20) charged with the administration and operation of those foreign lines which had been acquired; railway troops composed mainly of construction and operation companies (21); and railway transportation offices (railway station commanders) (22). Attached to each army in the concentration area was an unloading commissary (23), who represented the director of military railways. After the completion of concentration, an officer was assigned to each army headquarters and to each communications zone in the capacity of railway agent (24) for the director of military railways, and as technical adviser in transportation matters (25).
The director of the military railways, was kept informed regarding the plans of General Headquarters and thus enabled to employ the available means and resources in a manner suitable to the requirements of the military operations. Although, at the beginning of the war, there were organized ninety companies of railway engineers for purposes of construction, they proved inadequate for the tasks awaiting them in the various theatres of operation. It soon became necessary to increase these troops and to press private industry (26) into service. At the time of the mobilization (27), prepared matériel (28) for military bridges had been loaded on railway cars (29) and placed in readiness to be used for the reconstruction of bridges of more than ordinary length. However, this matériel was not utilized along the transportation lines in rear of the First Army during the period under discussion here.

The fact that the railway demolitions (30) in the northern and central parts of Belgium were only of minor consequence, greatly favored the operations of the First Army as well as those of the entire right wing. Demolitions on a large scale must be prepared long beforehand, but our surprisingly rapid advance did not leave the Belgians the necessary time for that. Nor did the French and Belgians think it possible that our right wing would extend so far north, and that we would advance north of the Meuse. Consequently, the demolitions, executed on the Belgian railway lines in the beginning, were mostly of a temporary nature, thorough and lasting destructions being encountered very rarely. Destruction of tracks by means of explosives (31), destruction of telegraph and telephone lines, and damaging of installations and equipment in railway stations (32) were the usual demolitions resorted to. Tunnels were blocked by causing wild trains to crash into one another or to be derailed. Obstructions (33) of this nature could usually be removed in a short space of time. Not until French terri-
tory was reached (34), were tunnels demolished by means of explosives which required, of course, a much longer time for repair. The situation in this respect was much more unfavorable opposite the center of our armies. Here the bridges across the Meuse, between Namur and Sedan, were found to be blown up; similarly all the more important tunnels and bridges (35) encountered along our further advance had been demolished.

The right wing of the field forces (36) was chiefly concerned with the railway line: Aix-la-Chapelle—Liege—Louvain—Brussels—Mons—Valenciennes—Cambrai. To be sure, this line involved a detour; but the short line *via* Namur—Maubeuge—Busigny, was, at that time, blocked by the fortresses (37) of Namur and Maubeuge. It was not until these places had been reduced that reconstruction work could be started on this shorter line. It was possible to use the line: Liege—Namur—Jeumont, as early as September 3, but the section to Busigny was not ready until the latter part of September. The line: Namur—Maubeuge—Busigny, could not, in consequence, be considered in connection with the operations of the First Army during the period in question.

All the more favorable were the conditions on the line: Liege—Brussels—Valenciennes—Cambrai. If the numerous tunnels and viaducts along the railway line: Aix-la-Chapelle—Liege—Brussels, had been thoroughly demolished, the advance of the First Army would have met with most serious difficulties, all the more so since the assignment of motor truck columns was inadequate. Nor were tunnels, bridges, and viaducts, along the latter part of our route of advance destroyed more thoroughly. By employing numerous railway troops, we succeeded in reconstructing the line and in resuming operation, with little delay. Trains could be operated as far as Landen on August 22, as far as Louvain on August 24, to Mons on August 29, and to Cambrai on August 30. About this time, the First Army was cross-

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(34) Erst auf franzsischem Gebiet
(35) Kunstbauten
(36) Fur den rechten Heeresflugel
(37) durch die Festungen
ing the Avre, between Amiens and Roye, and the Second Army was in the region east of St. Quentin. This was an extraordinary achievement in construction and the determining factor (38) in the supply service (39) of the First Army. The first railway trains carrying supplies (40) made their appearance in Seignies as early as August 28, and, on the evening of the 29th, the first subsistence and ammunition railway trains (41) had already reached Valenciennes.

Starting from Cambrai, the sections of track, via Péronne—Chaulnes, to Roye, from Chaulnes to Chauny, and from Cambrai to St. Quentin, were next restored. This work was completed on September 5, at the beginning of the Battle of the Marne. On September 9, the last day of that battle, a through-line (42) from Chaulnes via Ham—Chauny to Compiegne had already been established and, on the morning of that day, the first troop transports (43) arrived at the railway station (44) of Compiegne.

These reconstructed lines, it is true, were still inadequate for the transportation of large masses of troops, but they were able to meet the most urgent requirements of the First Army in supplies and replacements (45). From a technical point of view one may therefore say that the railway situation (46), on the right wing of the armies at the time of the Battle of the Marne, was unexpectedly favorable and adequate, so far as the supply service was concerned.

During the advance and during the Battle of the Marne, Headquarters of the First Army received frequent and detailed reports concerning the progress of the work of railway reconstruction (47) and kept in close touch with the communications zone commander. The latter was required to keep headquarters informed, at all times, in regard to the extension of the supply service by means of the railways.
(48). Hence, during the Battle of the Ourcq, army headquarters was in a position to regard the service of supply (49) as assured.
APPENDIX

ADDITIONAL REPORT BY GENERAL VON KUHL (*)

First Question:

The ammunition columns of an army corps in 1914 consisted of 4 columns for the infantry, 9 columns for the field artillery, and 8 columns for the heavy artillery—

(a) What was the exact organization of these corps columns?

(b) How many wagons or trucks constituted a column?

(c) Was the column divided into companies, sections, or platoons?

(d) Were there animal-drawn wagon companies? Motor companies?

(e) What was the organization of these companies, sections or platoons?

(f) What was the capacity in volume and weight of these wagons or trucks?

(g) Was there a standard type of vehicle in use, or were there several types?

(h) Please show the chain of command of these ammunition columns down from army, through corps, to the truck or wagon company.

(i) Was the corps abolished during the war as an administrative unit? If so, when, and what disposition was made of the corps ammunition columns? That is, were some of them allotted to the divisions and armies, and there operated?

Answer:

The infantry ammunition columns (companies) (1) consisted of small arms ammunition wagons (2), some com-

(*). This additional report by General von Kuhl is in answer to a set of questions prepared by Major Koenig for the purpose of clarifying certain points of the original treatise.

(1) Infanterie-Munitions Kolonne (2) Patronenwagen Kolonne

(A translation of this term is “infantry ammunition column” but since “column” as used is equivalent to “company” in our service, the term “infantry ammunition company” will be used in the translation.)
panies having 6-line and some 4-line vehicles. A column (company) containing six-horse vehicles was divided into two half-companies (3) or sections, of which one had twelve and the other eleven small arms ammunition wagons; a supplementary section (4) containing field forage (5), store wagon (6), et cetera, also formed part of this company. There were in all twenty-eight horse-drawn vehicles. A company equipped with four-horse wagons was composed of two half-companies or sections containing seventeen small arms ammunition wagons each, and a supplementary section, organized as above; it had a total of thirty-nine vehicles.

A field artillery ammunition company (7) was divided into two half-companies or sections and a supplementary section. One of the half-companies consisted of eleven ammunition wagons and one spare gun-carriage (8), and the other of ten ammunition wagons and one spare gun-carriage; the supplementary section contained a store wagon, forage wagon (9), ration wagon (10), et cetera: a total of twenty-seven horse-drawn vehicles.

The ammunition column of an army corps consisted of two ammunition battalions (11) and one heavy artillery ammunition battalion (12). One ammunition battalion consisted of two infantry ammunition companies and four field artillery ammunition companies, while the other contained two infantry ammunition companies and five field artillery ammunition companies.

The foot artillery (heavy artillery) ammunition companies (12) of the heavy artillery ammunition battalion were likewise organized with two half-companies or sections and a supplementary section. One of the half-companies consisted of nine, the other of eight ammunition wagons. There was a total of twenty horse-drawn vehicles.

(3) Halbkolonnen
(4) Ergänzungszug
(5) Feldschmiede
(6) Vorratswagen
(7) Artillerie-Munitionskolonne
(8) Vorratslaffete
(9) Futterwagen
(10) Lebensmittelwagen
(11) Munitionskolonnen-Abteilungen
(12) Fuszartillerie-Munitionskolonnen
The heavy artillery ammunition battalion (13), consisting of eight heavy artillery ammunition companies, belonged to the heavy field howitzer battalion (14) of the corps. Motor transport organizations (15) were at that time assigned only to the communications zone.

An infantry ammunition company, equipped with four horse-vehicles, carried either 765,000 or 952,000 cartridges (16), according to the manner of packing; i.e., whether in paper boxes or in belts. Each wagon could transport 22,500 or 28,000 cartridges, which were carried in twenty boxes (17).

Similarly, an infantry ammunition company, equipped with six horse-vehicles, could carry 698,625 or 869,400 rounds; and each wagon could transport 30,375 or 37,800 rounds in twenty-seven boxes.

A field artillery ammunition company carried a total of 2500 shrapnel and high explosive shells (18), whereas a heavy artillery ammunition company carried 612 shells, all high explosive.

Generally speaking, there was one standard type (19) of vehicle in use; only the infantry ammunition companies were equipped with two different types, as stated before. The weights of these vehicles are not known to the writer.

The movements of the corps ammunition column and the corps trains were regulated by means of "corps administrative orders" (20). The ammunition column and the trains were combined and formed into two sections (21).

The ammunition column was in charge of the "commander of the ammunition column" (22), who was a member of the army corps staff. Every ammunition battalion (23) was commanded by a battalion commander.

The senior commander present with either an ammunition battalion or a train battalion (24) was designated as
commander of the 1st and 2d Sections (25) of the united column and trains.

Each army corps prescribed daily, in “administrative orders” the march objectives (26) for the 1st and 2d Sections, and the movements of individual ammunition companies and subsistence companies. Some of these formations would be ordered forward to distribute supplies to the combatant troops (27), some would be returned empty to the advance depots, and others again would march to the front, after refilling. These various movements were ordered after consultations with (28) the commander of the ammunition column and the commander of the trains.

In answer to (i): The army corps was not abolished as an administrative unit (29) during the war. However, during the period of stabilization (30), the various army corps headquarters remained more or less stationary (31), the divisions only changing their locations. The ammunition column and the trains also became stationary, excepting such portions as had been allotted to the divisions to meet their minimum requirements. This system had the advantage of lightening the work of the railways, in that the transportation of vehicles (32) became unnecessary when a shifting of troops was accomplished. On the other hand, it had the disadvantage of rendering impracticable the close liaison (33) which should exist between the supply trains and the troops, with the result that the requisite supervision and control (34) grew lax.

Second Question:

The trains of an army corps in 1914 comprised twelve field hospitals, six supply columns, seven wagon columns, two remount depots, two field bakery columns, and one corps bridge train. Horses were used as draft animals in all the columns named.
(a) Please give the same data for these “corps trains” as requested in Question 1, for “the corps ammunition columns.”

Answer:

To each army corps there were assigned six subsistence companies (35) and seven heavy supply companies (36) all of which combined carried four days’ rations for the corps. The loading capacity (37) of a heavy supply company was slightly in excess of twice that of a subsistence company or 57,600 kilograms as compared to 27,000 kilograms. The subsistence companies used two different types of wagons (38); an older type which was rather heavy, and a more recent type of lighter construction. Accordingly, we distinguished between heavy and light subsistence companies. The vehicles of all subsistence companies were drawn by four horses each, those of the heavy supply companies by two. The former were, therefore, much more mobile, being able to proceed at a trot even when loaded (39); whereas wagons of the heavy supply companies could move at a trot only when empty. The subsistence wagons were actually kept on hand in time of peace, while the vehicles for the heavy supply companies had to be requisitioned during mobilization. The standard wagon employed by the heavy supply companies was the so-called “covered wagon.”

The subsistence companies had two platoons; the heavy supply companies three. Each company was in charge of a “commander.”

A heavy subsistence (40) company was equipped with twenty-nine vehicles; a light company with thirty-eight. A heavy supply company contained fifty vehicles.

A field bakery company (41) was composed of twenty-six vehicles; it was divided into two platoons (42), each of six ovens and six wagons carrying tools and accessories
The two field bakery companies combined contained, therefore, twenty-four rolling ovens. To each oven belonged a wagon carrying tools and accessories, which could also be used for the transportation of flour. Since a rolling oven had a daily baking capacity of 1920 bread rations, the two companies combined were able to turn out approximately 46,000 rations, somewhat more than a day’s requirements for an army corps. Whenever called upon to make daily changes of station, the combined bakery companies were able to prepare only about 26,800 bread rations.

Each field hospital had nine vehicles, divided into two platoons. The hospitals marched partly with the first, partly with the second section of the trains. The nine vehicles were: four wagons carrying surgical instruments and medical appliances, one ambulance, two medical supply wagons, one baggage wagon, etc.

A remount depot contained 107 horses and one store wagon and one forage wagon.

A corps bridge train had thirty-eight vehicles and was divided into two sections of two platoons each. The vehicles consisted, in the main, of ponton wagons and several trestle wagons, the latter carrying matériel for the construction of trestle-bridges. A detachment of engineers was assigned as escort.

The carrying capacity of the various types of wagons are as follows:

<table>
<thead>
<tr>
<th>Type</th>
<th>Carrying Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light wagons of the subsistence companies</td>
<td>750 kilograms</td>
</tr>
<tr>
<td>Heavy wagons of the subsistence companies</td>
<td>1,000 &quot;</td>
</tr>
<tr>
<td>Wagons of the heavy supply companies</td>
<td>1,200 &quot;</td>
</tr>
</tbody>
</table>

(43) Gerätewagen (52) Vorratswagen
(44) fahrbare Ofen (53) Futterwagen
(45) Brotportionen (54) Korpsbruckentrain
(46) etwas mehr als en Tagesbedarf (55) Halbkolonnen
(47) Feldlazarett (56) Pontonwagen
(48) Gerätewagen (57) Bockwagen
(49) Krankenwagen (58) Bockbrückenmaterial
(50) Sanitätswagen (59) ein Pionierbegleitkommando befand sich dabei
(51) ein Pferdedepot (60) Tragfähigkeit
At the beginning of the war, motor transport companies (61) were assigned to the communications zone (62) only. As the war progressed, especially during the period of stabilization (63), their number was, of course, considerably increased, both in the communications zone and with the combatant troops.

A communications zone motor transport company (64) was composed of a number of "army motor truck units" (65), which consisted of one motor truck (66) (loading capacity 4000 kilograms) and one trailer (67) (loading capacity 2000 kilograms). To these units were added a few passenger cars (68) and trucks without trailers (69), the whole amounting to seventeen motor vehicles (not counting trailers) for the company. As the war went on, we gradually gave preference to the single truck (70) which was chiefly used in lieu of the truck and trailer unit.

For each cavalry division there was available a "cavalry motor transport company" (71) of fifteen "cavalry motor trucks" of somewhat lighter construction (loading capacity of each truck, 3000 kilograms).

In the course of the war, a uniform organization for the army motor transport companies (72) was adopted. Moreover, to each division was assigned a "divisional motor transport company" (73). An army motor transport company contained eighteen or fourteen motor trucks available for carrying freight, their combined loading capacity being about 45000 kilograms, or approximately the same as that of a heavy supply company (74). The number of motor trucks was increased in proportion to the shortage of horses, which made itself felt more and more as the war continued.
Third Question:

Show how issues of supplies and ammunition were made, within the communications zone, from:

(a) corps base depot;
(b) zone of the interior depots, such as Hamburg;
(c) army base (Sammelstation);
(d) transfer station (Ubergangsstation);
(e) communications zone main depot (Etappenhaup-tort).

Answer:

All the supplies which the army itself was unable to procure in the theatre of operations (75), had to be forwarded from the zone of the interior (76).

For this purpose, widely distributed reserve depots (77) were established throughout the zone of the interior in which food supplies (78) were collected and stored. These depots were set up near such subsistence depots (79) (already existing in time of peace), as were suitably located with regard to rail shipment to the front (80). Connected with these reserve depots were depots for the accumulation of beef cattle (81). By direction of the Ministry of War (82), the reserve depots were filled by the acting commissariats (83) located in the zone of the interior and by the commanding officers of subsistence depots. Each reserve depot had a special shipping section (84) which attended to the forwarding of supplies in cooperation with the railway authorities.

From the reserve depots, provisions were moved to the army base (85).

To this base, also, all other supplies needed by the army, were shipped, such as: ammunition from the artillery depots...
of the zone of the interior (86); matériel and accessories (87), clothing, and personnel replacements (88), from the several army corps bases (89), that is, from the bases in the corps areas as the latter existed in time of peace. The army corps base was usually located at the seat of the “corps area headquarters,” which was an acting corps headquarters (90) organized in each corps area (91) after the departure (92) of the army corps. The acting commissariat (93) in each corps area, in conjunction with the corps clothing office (95) and other departments of the area, was charged with the procurement of supplies (94). Replacements from the corps area were sent to the front by the acting corps headquarters which cooperated to this end with the War Ministry.

All the supplies and replacements (96) for each army were assembled at the army base. The latter was always located far enough in rear of the combat zone (97) to insure the safety of the supplies. The first track construction work at such an army base was done under the supervision of the director of military railways (98) who cooperated with the Commissary General (99) at G.H.Q.

At the army base the following depots were established: a subsistence depot (100) which contained food supplies only; a general supply depot (101) for other supplies (including medical supplies); also a special clothing depot (102) and several ammunition depots.

From the army base the supplies were moved forward to the main depot (103) of the communications zone and thence, by rail, to the various army corps in accordance with their requirements.
The army corps requisitioned for subsistence directly on the communications zone commander. The army commissary (104) kept himself informed, at all times, regarding the stocks on hand in the subsistence depot at the army base and conferred with the War Ministry when replenishment became necessary.

The communications zone commander was responsible for the security of the lines of communication; he administered his zone and forwarded supplies and replacements (105). The supply lines running from the combatant troops back to the main depot of the communications zone were guarded by military stations (106) established along the lines at intervals of about 22 kilometers. Military stations were commanded and administered by communications zone commandants, whereas the railway stations nearby were under the direction of railway station commanders. At the military stations located off the railway (107), that is, along the highways, advance subsistence depots (108) were sometimes established.

Communications zone headquarters being situated at the main depot, contained the necessary organization for the operation of the services dealing with ammunition, subsistence, sanitation, etc., and for the administration of the various depots (109). From the communications zone main depot the supplies needed by the troops, especially rations and ammunition, were forwarded to them along the various supply lines which radiated from the main depot as a common center. For this part of the work, the communications zone commander had at his disposal heavy supply companies of the communications zone (110) as well as communications zone motor transport companies (111).

Fourth Question:

I notice that the diagram showing the organization of the "Lines of Communication" (Communications zone) in

(104) Der Armeeintendant (109) Magazine und Depots
(105) bewirkt den Nachschub (110) Etappenfuhrparkol-
(106) Etappenorte (See P. onnen (111) Etappenkraftwagen-
199 et seq.) kolonnen
(107) Landetappenorten
(108) Magazine
1914 puts the army base (Sammelstation) in the zone of the interior (Heimat), but that the commander of the army has jurisdiction, since he commands the theatre of operations. Please explain.

*Answer (112):*

A transfer station (113) is that point along a railway line, where operation under peace conditions (114) ceases and militarization (115) begins. Railways in the theatre of operations and in its vicinity are militarized (116) (*i.e.*, they pass over to military control and are operated accordingly). The location of a transfer station may vary. Its establishment is solely a problem for the railway administration (117) to solve and does not concern the army: it is purely a technical matter of the railways (118).

*Fifth Question:*

What kind of organization functioned on the canals and rivers during the war?

(a) Was it a transportation service separate from anything else?

(b) Was it under the Quartermaster General at G.H.Q.?

(c) What use was made of water transportation?

*Answer:*

The waterways (119) were under the administration of the director of military railways. The greatest possible use was made of them in order to supplement the service of the railways. The many canals situated in Belgium and northern France were, of course, primarily involved. It was impossible to ship munitions of war (120) from the lower Rhine (121) through Holland; but certain other supplies, like road construction materials, were permitted to be

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(112) It would seem that the writer, inadvertently or through a misunderstanding, explains the "transfer station" instead of confining himself to "the army base Angelegenheit (Sammelstation)"

(113) Übergangsstation

(114) Friedensbetrieb

(115) Kriegsbetrieb

(116) sind im Kriegsbetrieb

(117) Eisenbahnbhoforde

(118) eine eisenbahntechnische

(119) die Wasserstraszen

(120) Kriegsmaterial

(121) vom Niederrhein
routed in that manner. In regulating the operation of this service, the director of military railways was assisted by a number of traffic commissions (122). Toward the end of 1916, a separate “military canal directorate” (123) was created at Brussels and placed under the orders of the director of military railways. Its function was to maintain and operate (124) the waterways: especially the canals in Flanders.

**Sixth Question:**

Exactly what relation had the civil and military governors in Belgium to the lines of communication (communications zone)?

**Answer:**

“General military governments of occupation” (125) were established when the area lying between the armies and the zone of the interior became too large; a military government of this nature was established in Belgium. Thus, the area of the general military government of occupation was bounded by the zone of the interior, on one side, and the army communications zones, on the other.

The various “general military governments of occupation” were charged with the entire administration (126) of the areas assigned to them, including the service of security (127), civil administration (128), and such other functions as would ordinarily devolve upon the communications zone commander, such as the utilization of the resources of the occupied zone (129). On the other hand, these military governments did not concern themselves with the forwarding of supplies to the armies (130); this service was solely a function of the communications zone commanders. All transports, rail and motor, required in connection with the service of supply, were merely conducted through the zone of the “general military government,” the railways, of which were, as in the remainder of the theatre of opera-

(122) Baudirektionen (126) Verwaltung
(123) eine Militarkanaldirek-
(127) tion (128) Sicherung
(124) zur Unterhaltung und (129) Ausnutzung des Landes
zum Betrieb (130) mit dem Nachschub fur
(125) Generalgovernements . die Armeen
tions, under the jurisdiction of the director of military railways.

Consequently, the establishment of a "military government of occupation" served merely the purpose of relieving the communications zone commanders of the administration, exploitation (131), and security of the territory lying in rear of the armies, whenever this area became too unwieldy. Hence the military government zone constituted, in a way, a continuation or extension of the zone of the interior.

There was no separate "civil governor" (132) nor a separate "military governor" (133), but only one "governor general (134)" (military) to whom was assigned the necessary civilian personnel for administering the civil government (135).

**Seventh Question:**

Considering the remarkable marching performance of the right wing of the German Army in 1914, and that it was supplied adequately, and transported satisfactorily, what, in your opinion, did most to deny the German armies success? I ask this question, because I find a divided opinion among German officers themselves. Some say that the High Command failed to take command, due to the Chief of the General Staff being too old or too ill; others, that it could not, being too far away; others, that the Commander of the German Second Army made a false estimate of the situation; and still others, that Lieut. Colonel Hentsch exceeded his authority and caused the loss of the victory. I am trying to ascertain the real facts—someone must know them; perhaps all these factors contributed to the German reverse at the Battle of the Marne. Please state frankly your opinion, going fully into details.

**Answer:**

The reasons why the Marne Campaign (136) failed, are set forth, in a perfectly frank manner, in my book on "The Marne Campaign, 1914" (published by Mittler, Berlin).

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(131) Ausnutzung (135) Zivilverwaltungsper-
(132) Zivilgouverneur sonal
(133) Militargouverneur (136) der Marnefeldzug
(134) Generalgouverneur
So I can only briefly repeat what I have stated in that book.

The most important reasons are as follows: The Chief of Staff (137), von Moltke, proved a disappointment (138). He was not equal to his task. His selection for this post was a blunder.

Forces that number millions of men (139) require rigid leadership (140) when many armies must be moved as one unit, with one great operative end in view (141). Instead, General Headquarters allowed the “reins of command” to trail completely on the ground; the several army commanders were permitted too much liberty of action (142) and G.H.Q. failed to interpose where it was necessary. Had it done so, the Battle of Charleroi-Namur, fought on September 22-23, 1914, might have been turned into a great victory. I may mention that during the entire Battle of the Marne, from September 6 to September 9, 1914, the First Army did not receive a single order from higher authority.

But apart from that, General Headquarters (143) committed a number of very definite, grave errors (144).

To begin with, the plan of operations as drawn up by Count Schlieffen, the former Chief of Staff, had been modified in an unfortunate manner, even before the outbreak of the war. The right wing of the field forces (145), which was to execute the decisive enveloping movement (146) through Belgium and northern France, was not given the much needed strength; whereas the left wing in Alsace-Lorraine, which was to have a defensive mission (147) only, according to the Schlieffen plan, was stronger than necessary. The right wing which was to bring on the decision was not reinforced in the course of the operations, although this could have been accomplished. The
replacement divisions (148) that were mobilized at a later stage, were sent to the left wing in Lorraine. To make matters worse, two army corps were detached from the right wing towards the end of August and sent to the Eastern front (149). Here they came too late, for the Battle of Tannenberg had already been won before their arrival. Moreover, the right wing (of the field forces on the western front) was further weakened, in that it was compelled to leave several corps before the fortresses (150) of Antwerp and Maubeuge; it was found, at the decisive moment, that the right was far too weak for the gigantic enveloping operation originally planned (151). The French, on the other hand, by taking troops from Lorraine, reinforced their left wing in the vicinity of Paris, to such an extent that they, in turn were able, on September 5, 1914, to undertake an enveloping movement, from the direction of Paris, against the German right wing.

Notwithstanding all this, the Battle of the Marne might have ended successfully for the Germans had there been any kind of supreme leadership (152). German G.H.Q. had made the mistake of remaining in Luxembourg, entirely too far away from the decisive developments (153) on the right wing. The technical means of communication (154) were inadequate for such distances. Nor had other measures been taken to maintain communication; for example, no information officers (155) had been attached to the various armies by General Headquarters (157).

Under these circumstances (156), General Headquarters (157), feeling that the situation on the right wing had become critical, resorted to the abortive expedient (158) of sending Lieutenant Colonel Hentsch to the armies to straighten out matters (159). Arriving at the Second Army, he found a pessimistic conception of the situation.
(160); a gap had opened between the First and Second Armies. It was generally believed that the First Army was in an extremely difficult situation. Consequently the commander of the Second Army, in agreement with (161) Lieutenant Colonel Hentsch, decided to retreat. Hentsch then proceeded to the First Army and, in the name of General Headquarters (162), ordered it to fall back also. After it had been ascertained that the Second Army was actually retreating, there was nothing left to the Commander of the First Army but to obey and likewise to withdraw, even though he was then engaged in a successful battle (163).

Although a crisis had been brought about by the gap existing between the First and Second Armies, it would have been possible to fight a delaying action with the British who were advancing with great caution (164), and to hold them back the required length of time. The First Army had repulsed (165) the left wing of the French Sixth Army near Paris and was on the point of winning a complete victory. Likewise the left wing of the Second Army had completely defeated (166) the French Ninth Army under Foch, in the vicinity of Fere Champenoise. So it was a question as to who had the stronger nerves. If the success of the First Army as well as that of the Second Army near Fere Champenoise had been fearlessly exploited (167), then the enemy advancing in the gap between the First and Second Armies would himself have faced a most dangerous situation; the battle should have been fought to a finish (168).

Even the enemy has admitted that the Germans could not have lost the battle if the two army corps, which were despatched to the Eastern front, had been available.

**Eighth Question:**

What is column? Standard railway trains? Capacities?

(160) eine pessimistische Auffassung der Lage  
(161) im Einverstandnis mit  
(162) im Namen der Heeresleitung  
(163) mitten aus dem siegreichen Gefecht heraus  
(164) sehr zogernd vorgingen  
(165) geworfen  
(166) vollig geschlagen  
(167) rucksichtslos ausgenutzt  
(168) Die Schlacht hatte durchgekampft werden mussen
Answer:

A “standard military train” consisted of a maximum of 110 axles, i.e., 54 cars available for freight or passengers; it had a length of 550 meters. Wherever steep grades (169) or sharp curves (170) were encountered, the trains had to be broken up into two sections, so-called “half-trains.” (171)

One train would accommodate about one battalion of infantry (172), or one troop of cavalry (173), or one battery of field artillery (174), or approximately one ammunition company, or one subsistence company, or one-half heavy supply company. As a troop or a battery would not quite fill a train, it was always possible to add headquarters staffs in such cases.

Ninth Question:

Principle of regulating stations (175)? How used?

Tenth Question:

Automatic supply, and when and how used?

Eleventh Question:

How were supplies in zone of the interior collected for issue? Follow item from factory to soldier.

Answer to 9th, 10th, and 11th Questions:

These questions have all been answered in the preceding statements.

The organization and arrangements described in the foregoing answers were those which existed at the opening stages of the war and which were intended primarily for a war of movement (176). The stabilization (177) which followed caused many a change as the war progressed.

(169) starken Neigungen
(170) Krummungen
(171) Halbzuge
(172) Bataillon
(173) Eskadron
(174) fahrende Batterie
(175) This expression is being erroneously used for the German “Übergangsstation,” i.e., transfer station. The German for regulating station is “Verteilungsbahnhof”; see footnote 181.
(176) auf den Bewegungskrieg
(177) der Stellungskrieg
No change was made in the method of supplying the troops with subsistence, ammunition, equipment and accessories (178), clothing, and materials of all kinds; this remained the task of the communications zone commander as heretofore. The communications zone commissary (179), in cooperation with the director of military railways, ordered the subsistence railway trains forward from the army base. A railway officer (180), acting as agent for the director of military railways was constantly attached to zone headquarters. These trains were broken up and new trains formed, usually at railway sorting stations (small regulating stations) (181). The requirements of the various corps were then sent at once to the corps depots (182) by rail. As a rule, in the communications zone depots (183) only such supplies were stored as were required by the communications zone troops (184) and such army troops and reserve forces as happened to be within the zone.

The communications zone continued, just as before, to bring up clothing from the various clothing depots in the zone of the interior and to distribute it to the troops. Army clothing depots (185) were established within the communications zone.

During the period of position warfare, the entire service of supply (186), developed into a rather steady routine, the details of which were governed by experience.
PART II

TREATISE

By

GENERAL VON BERGMANN(*)

(Supplementary to General von Kuhl’s Treatise)

(*) von Bergmann’s proper rank is “General der Infanterie,” a grade just below that of Generaloberst. During the war the appropriate command for a “general of infantry” was an army corps. He was Deputy Chief of Staff of the German First Army in 1914.
CHAPTER I

MOVEMENTS OF THE GERMAN FIRST ARMY FROM THE
COMPLETION OF CONCENTRATION TO SEPTEMBER 12,
1914; WITH SPECIAL REFERENCE TO THE
SERVICE OF SUPPLY

TO WHAT EXTENT DID THESE MOVEMENTS CONFORM
TO THE "SCHLIEFFEN PLAN OF OPERATIONS" (*)

INTRODUCTION

The initial operations in 1914 (14) were, in the main,
based on the plan originated by Count Schlieffen, the
former Chief of Staff of the German Army. Provision
was made therein for avoiding the strongly fortified eastern frontier of France (15), by passing through Luxembourg and Belgium. With this end in view, the bulk of the German field forces in the west (16) was to concentrate in such a manner that the left wing (Fifth Army) would be near Metz—Diedenhofen (Thionville) and the right wing (First Army) northeast of Aix-la-Chapelle. The armies, during their advance, were to execute a turning movement to the left using the area: Metz—Diedenhofen, as pivot. The rate of progress in this movement was to be governed by the right wing, that is, by the First and Second Armies consisting of twelve army corps, whose mission it was to advance through Belgium north of the Meuse. The German High Command was to determine when the advance of the main forces should begin.

In case Belgium opposed the advance, it was planned to have the Second Army take Liege with the utmost speed, by sending ahead eight infantry brigades with the necessary heavy artillery attached. These troops were to open (17) the routes of march barred by that fortress. Upon

(*) The writer has taken into account the paper of General von Kuhl, treating of the same subject.

(Foot-notes 1-13 omitted.)

(14) Die Operationen zu Anfang des Jahres 1914.
(15) die stark befestigte französische Ostfront
(16) die Hauptmasse des deutschen Westheeres
(17) freizumachen
the completion of this task (18), the Second Army was to clear the roads, north of Liege between Aix-la-Chapelle and the Meuse which, up to this juncture, had been at its disposal, and make them available for use by the First Army so that the latter could begin its forward movement (19). Thus both armies could place themselves in readiness along their future routes of advance north and south of Liege.

The following instructions from G.H.Q. prescribed the operations next in order:

"The Second Army advances, its right wing marching on Wavre; the First Army will receive orders to march on Brussels and to cover the right flank of our forces (20). The progress of the First Army will, in conjunction with that of the Second, set the pace for the turning movement (21) of our forces."

The II Cavalry Corps, consisting of the 2d, 9th, and 4th Cavalry Divisions, was at first attached (22) to the Second Army. Upon the beginning of the general advance, it was to revert to the direct control of General Headquarters and push forward, north of Namur, in the direction of the general line: Antwerp—Brussels—Charleroi. Its mission would then be to locate the Belgian army, and to ascertain whether or not British contingents had been landed in northern Belgium, or French forces had made their appearance there. In addition the cavalry corps was to furnish information (23) to the First Army.

It has seemed desirable to me to restate, at the beginning of my observations, these general instructions (24) issued to the armies of the German right wing, before the beginning of the operations, although they have already been stated in General von Kuhl's paper. For these instructions represent that part of the Schlieffen Plan which, with respect to the nature of the general advance of the field forces, was carried out almost exactly as designed; not so, however, with respect to the assignment of forces (25).
Count Schlieffen, as will be remembered (26), was of the opinion that, in order to achieve a decisive success completely crushing the opponent, it would be necessary to attack him on two sides at least, in front and on one flank. He was further of the opinion that the forces, requisite for an overwhelming flank attack, such as he advocated, could be obtained only by reducing as much as possible the numerical strength of the forces that were to attack the hostile front. The greater the strength of the forces, assigned to the flank attack (27) right from the start, that is, during the concentration of the armies, the more decisive, he maintained, would be the result of the attack. It was therefore his intention, in a war with France, so to direct operations as to envelop the hostile left with “a right wing of overwhelming strength” (28); to maintain constant pressure against the outer flank of the French forces and, in this manner, compel them to yield ground and eventually abandon their original base of operations (29). In accordance with this line of thought, Count Schlieffen had provided, in his plan of operations, for making the right wing of the forces on the western front considerably stronger than was actually done during the concentration of 1914. Moreover, he had assigned to this wing a number of newly organized replacement corps (30) which were to follow it as a special reserve (31). In this manner, he hoped to advance, from the outset, with a solid front in greatly superior numbers. By means of the special reserve, following in rear of the right wing (32), he expected to invest Antwerp and to oppose effectively any British expeditionary force (33) that might appear. The power of attack reposing in the right wing, with its corps echeloned in depth, was to enable him to turn any new defensive forces that might possibly be encountered in fortified areas, such as: Reims—Laon—La Fere, and along certain river lines (34) and to envelop Paris from the
west and isolate (35) it. While the frontal attack was
"to neutralize the greatest possible number of French
forces with the least possible number of German forces,"
the powerful right wing was to make the decisive thrust
deep into the left flank of the enemy and into the rear (36)
of the French front.

But the strength, which the German right wing was
actually given in 1914, corresponded in no way to the de­
mands made upon it. The six to eight replacement corps
which, according to the Schlieffen Plan, were to follow the
right wing for the execution of the above mentioned special
missions, were absent.

The explanation of this deviation from the Schlieffen
Plan, on the part of the German G.H.Q. in 1914, may be
found in the expectation, later justified by events, that the
French would begin the war with a powerful invasion of
Alsace-Lorraine. The danger of such an offensive was
deemed much graver by G.H.Q. in 1914 than Count Schlief­
fen had estimated it to be. The latter was convinced that
the victorious and irresistible forward movement (37) of
a powerful German right wing in the direction of Paris
and the lower Seine would prevent the French from ex­
ploting thoroughly any success that they might win in
Alsace-Lorraine. He was further of the opinion that any
such success of the French would necessarily find its limi­
tations at the powerful line of German fortresses, Metz,
the Nied position, Strasbourg, the Breusch position, and
the fortifications of the upper Rhine. Nor did he entertain
the belief, held by the German High Command in 1914,
that the Germans could inflict a crushing and decisive blow
upon the enemy, after the latter’s invasion of Alsace-Lor­
raine, by means of superior forces held in readiness there.
He reasoned that the enemy could easily avert such a crush­
ing defeat by making skillful use (38) of the protecting
lines of his fortification system. The events which oc­
curred in 1914 proved only too well the correctness of Count
Schlieffen’s estimate.

(35) abzuschlieszen (38) durch geschickte Ausnut­
(36) in den Rucken zung 
(37) durch das siegreiche und
unaufhaltsame Vorwärtsdringen
Later on I shall show when and where, in the further course of operations (39), the intentions of Count Schlieffen were again disregarded, not only with respect to the distribution of forces (40), but also with respect to troop leading on the right wing.

General von Kuhl's paper describes fully the manner in which the general directives (41) of the German G.H.Q., mentioned heretofore, was carried out by the First Army. I have only to add the following:

Section a.—The advance through Aix-la-Chapelle and across the Meuse.

(See Part I, Chapter II, Section a.)

The concentration of the First Army took place in the areas shown in sketch (42) (Plate XII).

On the evening of August 9, army headquarters arrived at Grevenbroich and established its first command post at that point.

The detraining (43) of the combatant troops of the three leading corps, the II, III, and IV army corps, was to be completed on the 11th; that of the corps following in second line, the III and IV Reserve Corps, not before August 14; the ammunition columns and trains of all the corps were to finish their detraining on August 14 and 15. Moreover the situation at Liege was not yet fully decided. All these factors influenced army headquarters to set the beginning of the forward movement through Aix-la-Chapelle at first for August 14, but later General Headquarters directed this date to be changed to August 13.

August 12 was designated as the date for shifting the various army corps (44) to positions from which they would be prepared to initiate the subsequent advance; the corps were moved up as follows:

The head of the II Army Corps to Herzogenrath (45);
The head of the IV Army Corps to Birk (45);
The head of the III Army Corps to Weiden (45).
Concentration Areas and Routes of Departure of the Army Corps Constituting the First Army.
In advance of the III Army Corps, between Aix-la-Chapelle and Liege, was the IX Corps, which still belonged to the Second Army, but later joined the First Army.

Of the two corps in second line (46), the III Reserve Corps was to follow the II Army Corps, and the IV Reserve Corps the IV Army Corps, in conformity with the progress of their detraining.

There is no doubt but that the initiation of the advance, before the detraining was completed, created additional difficulty. Measures had to be taken to avoid the crossing of columns and other march interruptions which might easily be caused by detachments of the ammunition columns and trains of the three leading army corps, that were not to be detrained until after August 13, and that had to be moved up in advance of the combatant troops of the corps in second line (47). It was a hardship for the two reserve corps, not yet seasoned to the road (48), to start upon the forward march, during those hot days in August, immediately following a fatiguing railway trip of several days. Both these tasks, however, were performed smoothly and without confusion.

On August 10th, the various army corps were supplied with march orders (49) by army headquarters (mentioned by General von Kuhl in Chapter II—Section a of this treatise) directing the advance of three columns, consisting each of two army corps, marching one in rear of the other on one road; instructions (50) for the passage of troops through Aix-la-Chapelle were also issued. The early promulgation of these orders and instructions was to enable the various corps to cope with the difficult march conditions (51) to be expected during the next few days and to make proper march dispositions, at the outset, and when entering upon the routes of march (52) that had been assigned to them. Moreover, the corps commanders were enabled, in good season, to issue their orders pre-
scribing the march, method of subsistence, and the operation of their ammunition columns and trains. The passage of the troops through Aix-la-Chapelle began on August 13 and was completed on August 17; for further details see sketch, Plate V, page 19.

The unqualified success of this movement was due to the excellent discipline and training of the troops, as well as to the completeness of the arrangements that had been made; also, in no small degree, to the fact that the enemy air forces remained completely inactive during this phase of the war. Had the air service of the enemy, at that early stage, been organized and employed as it was toward the end of the war, the advance of the First Army, might have been very seriously interfered with.

Another prerequisite for the smooth consummation of this initial forward movement of the First Army was the destruction of the Belgian fortifications which commanded the bridges across the Meuse north of Liege. This was accomplished on the afternoon of August 13, when Fort Pontisse was captured. The preparatory work for the crossing of the river could now be accomplished in time and without disturbance, by the engineers and bridge trains that had been sent ahead for that purpose. On August 15, the three leading army corps were able to begin the crossing of the Meuse.

Thus the advance from the concentration area to the region beyond the Meuse was carried out, in every detail, according to plan and without the least delay.

As to the experiences gained during this period, especially with reference to the service of supply, further remarks are given below, in so far as they have not been touched upon in General von Kuhl's paper.

(53) Verpflegung (58) die feindlichen Luftstreitkräfte
(54) Bewegung der Klonnenreitkrafte (59) in dieser Kriegsperiods
(55) reibungsloses Gelingen (60) Vorbedingung
(56) Ausbildung (61) das Unschadlichmachen
(57) Zweckmaessigkeit der Am- (62) die Vorbereitungsarbeiten
ordnungen (63) vollig plannmaessig
Section b.—The advance up to the Battle of the Ourcq.

(1) Up to the Change of Direction to the South.

Even after the Meuse had been crossed, the various corps were still unable to spread out (64). The zone of march (65) of the First Army was limited on the left by the right wing of the Second Army which was marching on Wavre by the route: Liege—Lantin—Wamont—Wavre. Development (66) toward the right was restricted by the general order to march on Brussels, also by the necessity of keeping beyond range of the fortress of Antwerp, and lastly on account of a directive of G.H.Q., which was received on the afternoon of August 17. General Headquarters directed, “that the object was to engage the enemy forces, reported in position along the line: Diest—Tirlemont—Wavre, in such a manner as to prevent them from falling back on Antwerp (67); and that it was the intention of the High Command to have the First and Second Armies operate later on from the line of departure: Brussels—Namur, with covering detachments guarding against enemy action from the direction of Antwerp (68).”

Consequently, during the first days after the crossing of the Meuse, the army was able to execute only a comparatively insignificant “right oblique” (69), which created a little space on the left wing and made it possible to move the IX Army Corps, by a separate route of march (70), to the left of the III Army Corps. (The IX Army Corps had been transferred from the Second Army to the First on August 15.) Accordingly, the army marched, on August 16 and 17, in the following order:

II Army Corps        III Reserve Corps
IV Army Corps
III Army Corps        IV Reserve Corps
IX Army Corps
The somewhat more favorable road net (71) and the necessity for further development, before attacking the Belgian divisions holding the intrenched line: Diest—Tirlemont, caused the armies to increase their front on August 18, by extending the right wing via Beeringen—Veerle—Hersselt. In this manner, the number of columns marching side by side was increased, and each of the leading corps, except the IX, was assigned two roads.

Further development of the

\textit{FIRST ARMY} on August 18, 1914.

Plate XIII

However, this development on a broader front (72) was temporary only. The Belgian forces abandoned their position along the Gette River—the left wing without a fight (73), the right, after offering more serious resistance (74)—and retreated in the direction of Antwerp (75). It then became necessary to draw the bulk of the army (76) away from that fortress so as not to delay in any way the continuation of the march.

\footnotesize{(71) Gestaltung des Strassen-

netzes} \hspace{2cm} \footnotesize{(74) nach ernsterem Wider- 

tand} \hspace{2cm} \footnotesize{(72) diese breitere Entfaltung} \hspace{2cm} \footnotesize{(75) auf Antwerpen} \hspace{2cm} \footnotesize{(73) kampflos} \hspace{2cm} \footnotesize{(76) mit den Hauptkraften}
Furthermore, the army was obliged to so select its march objectives (77) as to be ready, in a few days, to carry out the instructions of General Headquarters: “to have the First and Second Armies begin operations later on from the new line of departure: Brussels—Namur, with covering detachments guarding against enemy action from the direction of Antwerp” (directive of G.H.Q. issued on the afternoon of August 17). Consequently it became necessary, as early as August 19 and 20, to draw the corps once more closer together, facing in a southwesterly direction, so that the region of Brussels was reached on August 20 with the II, IV, III, IX Corps marching abreast. Each of these had but one road. Two of these roads, those used by the II and III Army Corps, were being used by two army corps, the III Reserve Corps following the II Army Corps and the IV Reserve Corps the III Army Corps.

On August 20, Brussels was occupied by the IV Army Corps, without encountering any resistance. On August 21, the advance was resumed with the same order of march (78), until the region: Ganshoren—Castre—Hal, southwest of Brussels, was reached. From the beginning of the advance on August 13, up to this time, i.e. during a period of nine days, the army had contended with the unusual difficulties of marching on an extremely narrow front and assigning columns of two corps to one road. The details of the experiences gained during this period, especially with reference to the service of supply, will be discussed later (79). In regard to the Schlieffen Plan (80), mentioned on pages 86-89, the criticism might be offered (81) here that the difficulties, created by the advance on such a narrow front and the corresponding echelonment of army corps in depth, would have become still greater, perhaps even insurmountable, had the right wing, in accordance with Count Schlieffen’s intentions, been strengthened to the extent of from six to eight additional corps. This may be answered by stating that these reenforcements (82), organized as a

(77) ihre Marschziele  (78) in dieser Gliederung  (79) see p. 107 et seq.  (80) Operationsplan des Gra-
(81) man konnte einwenden  (82) Verstärkungen  fen Schlieffen
special reserve army (83), could very well, and without disadvantage, have been conducted to the front, at a distance of several marches in rear of the First Army; and that it would even have been feasible, during the initial stages of the advance, to bring at least part of these forces up by rail and as far to the front as conditions would permit. After passing the Antwerp sector, it would have been possible to distribute these replacement corps in echelon to the right with ample space to operate, which would have greatly facilitated the march dispositions of that wing. There is no reason to doubt that, by such a procedure, the difficulties which indeed existed, could very well have been overcome.

Beginning with August 22, and in conformity with the instructions received, the First Army advanced in a southwesterly direction, passing west of Maubeuge with its left, and later on approaching the line: Amiens—Roye.

The same reasons for avoiding a broader development (84) of the First Army now no longer existed, at least not to the extent as before. Such a development seemed not only desirable, because it would facilitate maintenance (85) of the troops, but was even necessary in order that the army might be advantageously organized for possible encounters with the British and French forces, which were rapidly approaching. The nature of the road net (86), as it developed during the advance, also favored greater extension. Therefore, beginning with August 22 and 23, all four army corps were able to move on two roads each, or with one division on every route of advance.

The III Reserve Corps, which until then had marched in second line, was ordered to remain behind, on both sides of the Louvain—Malines Canal, with the mission of covering the right flank of the army (87) and the city of Brussels, north of the line: Louvain—Brussels, against hostile enterprise from the direction of Antwerp (88). This reserve corps was later on reenforced, for the attack upon Antwerp.
by the IX Reserve Corps, which had been withdrawn from observation duty (89) along the Danish frontier and sent to Belgium.

The IV Reserve Corps, which had likewise been marching in second line until then, was gradually shifted more to the right, so that it could, on August 26, during the Battle of Solesmes, place itself between the II and IV Army Corps and participate in the fighting (90). Toward the end of the march period (91) described here, that is, on August 29, 30, and 31, it formed the outer right wing of the army and marched on Amiens by way of Albert. This movement of the IV Reserve Corps required careful planning (92), on the part of army headquarters, to avoid during the march (93) interruptions and checks that might be caused by the crossing of march columns and vehicles belonging to other corps.

It is not the province of the writer to relate here the beginning, course, and outcome of the fighting (94) which took place during this period of the advance, the engagements along the Canal of Mons on August 23, and 24, and the battle near Solesmes—La Cateau on August 26 and north of the Somme on August 27 and 28. The army commander, although he made every effort in that direction and exacted from the troops extraordinary march performances (95), did not succeed in enveloping the left of the British forces confronting him and in cutting them off from their base, thus delivering the hoped-for crushing blow (96). Field Marshal French always managed, at the most critical moment, to escape this fate, with heavy losses (97) to be sure, but still at the right time.

(2) The Change of Direction (98) toward the South.

On the evening of August 28, army headquarters received from G.H.Q. (99) a "general directive (100) for the
continuation of operations". These instructions not only made allowance for a new stand (101) of the enemy along the Aisne, or along the Marne later on, but also took into account a possible concentration (102) of new enemy forces along the lower Seine. General Headquarters demanded a rapid advance on Paris in order to prevent such new formations and to give the French armies no rest or chance of reorganizing.

The missions (103) of the First and Second Armies, set forth in the directives of General Headquarters, are quoted:

"The First Army, with the II Cavalry Corps attached (104), marches west of the Oise in the direction of the lower Seine. This army will be prepared to take part in any combat in which the Second Army may engage (105); it is charged with the protection of the right flank of our forces (106), and must prevent the formation of new enemy forces (107) in its zone of action.

The Second Army, with the I Cavalry Corps attached, advances on Paris passing between (108) La Fere and Laon. All armies will cooperate and assist each other in combat along the boundaries of their zone of action (109). Stubborn resistance offered on the Aisne, and later, on the Marne, may require the armies to change direction (110), from the original southwesterly route to a new one leading due south."

Following out these directives of August 28, the First Army continued its march on August 29 and 30, in a southwesterly direction. Its right wing advanced via Albert on Amiens, its left wing along the route: Nesle—Roye; so that the army was marching in the general direction of the lower Seine (111), to the west of Paris. This corresponded in every respect, as we shall see later, with the plans of the late Count Schlieffen.

On August 29, the First Army became engaged south of the Somme (along the line: Proyart—Meharicourt) with considerable parts of d'Amade's Army, which was headed...
for Amiens; these forces were repulsed and forced back in a westerly and southwesterly direction. At the same time, the Second Army was heavily engaged with superior French forces south of, and in close proximity to, the line: St. Quentin—Guise, and asked for assistance (112). Now, so far as the commander of the First Army was concerned, that part of the directive of G.H.Q., dated August 28 (already quoted), which required that, in addition to advancing in the direction of the lower Seine, he take part in any combat in which the Second Army might engage, became effective. Besides, all armies were required to render mutual assistance along the boundary lines of their zones of action. Accordingly, the commander of the First Army placed one division of the IX Army Corps, which was marching on his left wing, at the disposal (113) of the Second Army. When, on August 30th, the commander of the First Army came to the conclusion that the hostile forces, defeated by him on the day before, had retreated behind the Avre, he at once made preparations to turn all his corps into a southerly and southeasterly direction. He evidently believed that the main forces of the enemy were to be found in front of the Second Army.

Although, on that afternoon, the Second Army reported that it had succeeded in inflicting a signal defeat upon the enemy (114), the commander of the First Army nevertheless adhered to the opinion that his army must turn toward the south and southeast, in order to outflank those enemy forces, while they were retreating (115) or endeavoring to make a new stand (116), and push them away from Paris.

The commander of the First Army was further strengthened in his opinion, when he received, soon after, a radio message (117) from the Second Army containing the following request:

"In order to exploit fully (118) the advantage gained, it is desirable that the First Army change direction toward La Fere—Laon using Chauny as pivot."

(112) Sie bat um Unterstützung
(113) zur Verfügung
(114) den Feind entscheidend 
(115) beim Ruckzuge
(116) beim Wiederfrontmachen
(117) Funkspruch
(118) zur vollen Ausnutzung
Of course, it was quite impracticable to comply with this request, which would have caused the First Army to wheel about completely and to change its route of march from a southwesterly to a northeasterly direction. The request, moreover, in no way conformed to the "directive of General Headquarters" dated August 28, nor yet to the combat principle (119) that a beaten enemy (120) can be destroyed most effectively by moving on roads parallel to his line of retreat and heading him off from a distant objective (121), rather than by launching the whole force against his flank in the early stage of the pursuit.

The commander of the First Army believed that by changing his direction of march, on August 31st, so that the center of his army (122) was headed for the Oise River line (123) between Compiegne and Noyon, he would have adequately complied with this principle (124).

This decision (125) was communicated to General Headquarters on the evening of August 30 and approved by the latter in a radio message of August 31, notwithstanding the fact that the "directive," issued on the evening of August 28, had provided for a change of direction of the armies, from the southwest to the south, only in the case of "stubborn resistance (126) being encountered along the Aisne, and later on, along the Marne". General Headquarters, by approving the decision of the First Army, therefore deliberately gave up its original plan—to march with the right wing on the Lower Seine—without having been compelled to do so by the enemy.

Thus Schlieffen's conception (127) of having the right wing execute a strategic envelopment (128) which was to sweep around, and to the west of Paris was definitely abandoned. In my opinion, the situation in which the Second Army found itself as a result of the recent fighting did not, of itself, justify this action.
The fruits of the victory, which the Second Army had won at St. Quentin—Guise, could also have been gathered in another manner. The Third Army, on the left of the Second, needed only to continue energetically its advance toward the southwest in order to cause the most disastrous results (129) for the right flank and rear (130) of the French forces, which were retreating before the Second Army. Had the right wing of the Second Army pressed the pursuit in a southwesterly rather than in a southerly direction, with the object of heading off the retreating enemy (131), the change of front of the First Army to the south could have been dispensed with. Such a procedure would have enabled the First Army to continue its advance toward the lower Seine, with a view to sweeping around Paris, in accordance with the Schlieffen Plan.

Assuming that the strategic situation (132), during the last few days in August, failed to justify an abandonment of the Schlieffen Plan, the question still remains whether the forces of the First Army at this juncture would have sufficed for an operation on such a large scale (133). This, I believe, must be answered in the negative.

Considerable forces were already detached on secondary missions (134): the III Reserve Corps and the IX Reserve Corps investing Antwerp, one brigade of the IV Reserve Corps garrisoning Brussels; besides there were other minor detachments. These were missions, the execution of which should have devolved upon the corps following the right wing as a reserve (135) (see page 87), or upon landwehr formations (136).

Thus, the First Army had at its disposal, for the fighting in September (137), four and one-half army corps only which were, moreover, considerably weakened on account of losses sustained during preceding marches and battles.
The XI Reserve Corps and the Reserve Corps of the Guards were available for the replacement of detached units and the reinforcement of the right wing of the field forces in accordance with the Schlieffen Plan. Through the capture of Namur (138), on August 23, these reserve corps became available just at the right moment, and should have been ordered to follow in rear of the First Army, as part of the reserve, with the line: Abbeville—Amiens, as march objective. Underestimation of the magnitude of the task still confronting the armies of the right wing in France and overestimation of the critical aspect of the situation in East Prussia, misled the German High Command into dispatching those two army corps to the eastern theatre of operations (139). Their employment as a reserve (140) in rear of the First Army would have compensated, at least to a small extent, for the inadequate allotment of forces (141) on the decisive flank (142).

The VII Reserve Corps (of the Second Army), which had been detached (143) for the investment of Maubeuge (144), could likewise have been made available for the reinforcement of the right wing, by assigning its mission of investment to some landwehr organizations. Furthermore, it would have been possible to transfer several army corps from the left wing of the field forces to the right, as soon as it became evident that, despite the employment of considerable forces (145) there, a decisive defeat of the French in Alsace-Lorraine could no longer be hoped for. This transfer was highly desirable in order to add momentum (146) to the increasing effect of the German advance through Belgium and to place these corps in reserve, in rear of the right wing, for the strategic envelopment (147) as planned by Count Schlieffen. The High Command was of the opinion that the capacity of the impaired Belgian railways would be unequal to the task of effecting such a move-
ment; it therefore felt that it must forego the execution of this plan. With others, I am of the opinion that the transfer could, nevertheless, have been made; if not by rail (148), then by means of a progressive exchange of reserve units, from left to right (149), that is, from one army to the adjoining army, throughout the entire front.

As none of these proposed expedients for a belated strengthening of the right wing was employed, the First Army found itself without the necessary forces to invest Paris and to execute the enveloping thrust around this enormous fortress (150).

Consequently, a continuation of operations (151) in the direction of the lower Seine, was now out of the question. Instead, G.H.Q., still adhering somewhat to the original idea of Count Schlieffen, contented itself with a much more modest strategic objective (152). When, on September 2, the First Army crossed the railway line: Chantilly—Soissons, and its right wing was approaching the northwest front of Paris, G.H.Q. sent the following radio message, which was received by the First Army during the night Sept. 2-3:

"It is the intention of the High Command to push the French forces away from Paris, in a southeasterly direction. The First Army will follow the Second Army in echelon (153) & (156) and will continue to protect the flank of our forces (154)."

In executing this directive (155), the First Army was obliged to again change front from a southerly to a more southeasterly direction. On September 3, it crossed the Marne between Meaux and Chateau Thierry.

During this phase of the advance, the depletion (157) of the First Army was seriously felt. In order to comply with the order of G.H.Q., "to push the French forces away
from Paris in a southeasterly direction," the army com-
mmander must strike at least the left flank of the enemy who
was then retreating before the Second Army. This he
could do by taking advantage of the lead of one day's march
(158) which the First Army had gained over the Second
Army during the latter's fighting at St. Quentin—Guise
(156). In addition to this mission, the British forces (159),
which were falling back before the First Army, had to
be pursued. The Commander of the First Army decided
to employ the bulk of his forces (160) in the execution of
this part of his mission, "to push the enemy away from
Paris in a southeasterly direction," and to pursue the
British; for the other part of his mission, that is, for flank
protection and echelonment of a reserve (161), he could
spare only one depleted reserve corps (162) and one cav­
alty division. This he reported to General Headquarters
and asked for early reinforcements (163), to enable him
adequately to provide for the flank protection with which
he had been charged. However, G.H.Q. was, at that mo­
ment, no longer able to furnish these reenforcements to the
First Army. The result was that the operation ordered
on September 2 was doomed to failure as had been the
earlier plan of advancing on the lower Seine. The reason
is not far to seek: unmindful of the admonition of the late
Count Schlieffen, G.H.Q. had failed, from the early stages
of the concentration to this juncture, to pay proper atten­
tion to the strengthening of the right wing of the field
forces (164).

Numerous reports (165) received at G.H.Q. up to Sep­
tember 4, regarding rail movements (166) of strong French
contingents, from the east toward Paris, made it appear
more and more probable that it was planned to use that
large and modern fortress as line of departure (167) and
cover (168) for a new French operation directed against

(158) eines Tagemarsches  (163) baldige Verstärkungen
(159) die Engländer  (164) die Starkmachung des
(160) starke Krafte   rechten Heeresflügels
(161) Staffelung und Flank­  (165) Nachrichten
enschutz  (166) Eisenbahnverschiebung
(162) ein schwaches Reserve­  (167) Ausgangspunkt
korps  (168) Ruckendeckung
the flank and rear of the First Army. The probability of such an attack led to the changes in the plans of the German High Command which are described in Chapter II—Section c of General von Kuhl’s treatise, “Troop Movements during the Battle of the Ourcq”. The execution of these changes was rendered very difficult for the First Army by the sudden attack (169) of General Maunoury’s Army, described in that chapter.

In this connection, I desire to point out once more that it would not have been necessary to abandon the advance in a southeasterly direction, which up to this time had been so successful, if an echelon of reserve corps (170) had followed the First Army, as contemplated in the Schlieffen Plan; such a reserve would have relieved the commander of the First Army of the worry about Paris and General Maunoury’s Army.

The movements (171) resulting from the situation of September 4 and their consequences are so minutely described in General von Kuhl’s treatise that there remains nothing for me to add. I shall, therefore, confine myself to the experiences gained during the operations of the First Army, with special reference to the service of supply, in so far as they have not already been touched upon in General von Kuhl’s paper. My remarks will cover the period from the concentration of the army in August to its withdrawal (172) behind the Aisne, about the middle of September.
CHAPTER II


General von Kuhl, in his detailed discussion of the above subjects, has shown that the march dispositions which were made, were good and that the supply service (2) of the First Army, during that period, was on the whole perfectly equal to the demands.

Inasmuch as the American authorities considered it important to ascertain the opinions of other officers and military officials who, at that time, occupied responsible positions with the service of supply, in the corps and communications zone (3) of the First Army, I made inquiry among such persons by means of a questionnaire. From the answers thus obtained I found that they confirm, almost unanimously, not only the views expressed by General von Kuhl but also my own observations (4). I state herewith the gist of the replies, which were given either orally or in writing; such opinions of responsible officers will also be found elsewhere in this treatise (See pp. 180, 189 and 212).

Section a.—Conditions surrounding the operation of the Supply Service (5) from August 13 to 21, 1914, when the several Corps were advancing in two lines (6) on a very narrow front.

Privy Councillor Lange, during that period, Commissary (7) of the III Army Corps, writes as follows:

"The area, through which we advanced (8), contained an abundance of supplies. The service of subsistence (9) met with no difficulties, not even during the days when our corps and the

(1) Bewältigung der Vorsorgung und des Nachschubes (5) Nachschubverhältnissen
(2) Versorgung und Nachschub (6) tiefgegliederten
(3) bei der Etappe (7) Intendant
(4) Feststellungen (8) Durchmarschgebiet
(9) Verpflegung
IX Army Corps were obliged to march on the same road (10). Except for bread, rations were drawn, only to a limited extent from the subsistence companies (11); as a rule, vegetables (12) and coffee were the only ration articles issued from that source. Consequently, a subsistence company would follow its corps with one part of the company loaded and the other empty, as, in view of the animosity of the civil population (13), it seemed inadvisable to send small elements of the companies to refilling points (14) or subsistence depots in rear for replenishment. Hence we had to wait until August 18 when opportunity offered to rearrange the loads of the various subsistence companies. The result was that, thereafter, only companies with full loads followed the army corps, while the empty companies proceeded to the rear to refill at the refilling point. This had been established at Wandre by dispatching a railway subsistence train (15) to the front, as far as the Meuse (see page 176).

The grain crops (16) were still in the barns awaiting threshing. In this agricultural territory, it could safely be assumed that threshing machines (17) would be available. In order to assure an adequate supply of oats, under all conditions, it was directed that, after the passage of the frontier, a subsistence company (18) should attend to the threshing in rear of the corps. This measure, the execution of which was entrusted to a very competent company commander (19), proved a complete success. At no time, during this period, did the corps experience a shortage of oats; on the contrary, more than once it was able to supply cavalry divisions. Each company invariably reestablished connection with the corps on the third day and delivered approximately 1000 centners (20) of oats.

Army headquarters (21), by requisition, had compelled the city of Brussels to make deliveries for the subsistence of the army, and the III Army Corps had been charged with the task of storing these provisions in depots. However, owing to the rapidity of the advance, adequate military pressure could not be exerted and consequently the delivery of supplies (22) proceeded at a very slow rate. The III Army Corps, therefore, did not derive any immediate benefit from these provisions. On continuing the advance, this promising depot was transferred to the commissariat of the communications zone (23)."

Major General Sydow, at that time Chief of Staff of the IX Army Corps, has the following to say regarding the period under consideration:

"As far as the IX Army Corps was concerned, no difficulties whatsoever were met during the first week of the advance. This was primarily due to our finding in Liege great quantities of Belgian provisions stored in depots. From these we were able to obtain replen-
The following statements were submitted to me by officers of the II Army Corps.

Captain Fiebig, then Adjutant to the Commander of Trains of the II Army Corps (at present of the 2d Train Battalion (25)), writes:

"The passage (26) through Aix-la-Chapelle of the ammunition columns and trains (27) of all corps was effected smoothly. Nor did the II Army Corps and III Reserve Corps, while marching together on the same road from Aix-la-Chapelle to beyond the Meuse, experience any difficulties serious enough to interfere with the subsistence of the combatant troops (28)."

General v. Hammerstein, at that time Chief of Staff (29) of the II Army Corps, confirms this statement. He also points out that the arrangements for the passage of the troops through Aix-la-Chapelle were complete and that they were meticulously carried out. Indeed, the troops themselves never realized for one moment that a most difficult problem was being solved there and then.

That the movement of the II Army Corps, during these trying days, when it advanced on a very narrow front and echeloned in depth, was after all not totally devoid of friction, is shown by the statement of Lieutenant Colonel Ludloff, of the General Staff (30), who was, during the period under discussion, captain on the Headquarters Staff of the II Army Corps and responsible for the supply service (31).

"During the first days following the passage through Aix-la-Chapelle, the difficulties, actually encountered, exceeded anything that could have been foreseen. In that long snakelike stream of troops and convoys (32) wriggling forward day and night, it was impossible to avoid the isolation and cutting off of an occasional transportation company (33).

Such a company would suddenly find itself, willy-nilly, in the midst of the trains (34) of another army corps; it then became neces-
sary to search for it. On other occasions, several columns of vehicles would travel alongside of each other for long distances, a matter certainly not contemplated in the administrative orders (35). Double columns of this kind were usually due to the efforts of a transportation company commander whose unit was in a wrong place, to join his proper organization. Such efforts, however, were invariably futile. Written orders transmitted through officers (36) or mounted messengers were also futile under such circumstances: it was therefore necessary to have an officer present who, according to his estimate of the situation and upon his own responsibility, could give new orders. From experiences of this nature, corps headquarters developed the policy that only very general instructions (37) would be given to the commanders of the ammunition column and of the trains; they were to have great liberty of action (38).

The general staff officer for supply and the commanders of the ammunition column and of the trains daily visited the several transportation battalions (39) on the road and, by personal conferences with their commanders, adjusted all questions and arranged for the movements of the following day.

The difficulties (40) that arose were thus entirely removed. However, not until the II Army Corps had gained the left bank of the Meuse, where it could enjoy greater freedom of maneuver (41), was it possible to completely restore the usual routine."

Privy Councillor Dr. Behrens, at that time Commissary of the IV Army Corps, states that the subsistence of the troops, during that period, was entirely adequate and that the administrative orders, issued in the case of the supply service, proved satisfactory.

Other statements submitted by officers, in connection with the period under discussion, have failed to add anything new of interest. I shall, therefore, conclude this topic by quoting the remarks of General Muller, the then Chief of Staff of the communications zone (42):

"During the first week, no difficulties for the communications zone arose on account of the rapid advance on such a narrow front. A few railway subsistence trains were sent to suitable railway stations near our frontier (43) and along the Meuse, where they were held for the convenience (44) of the various army corps. In addition, a rolling reserve (45) was established for each column of two corps marching on one road, by placing a number of communications zone motor transport-companies (46) between the leading and the rear corps. This was accomplished before the beginning of the march, or during the night. This method proved a complete success in that

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(35) Anordnungen (42) Chef des Stabes der Etappen-Inspektion
(36) Ordonanzoffiziers (43) Landesgrenze
(literally: "orderly officers") (44) zur Verfügung
(37) allgemeine Weisungen (45) eine bewegliche Verpflegungsreserve
(38) Freiheit des Handelns (46) Etappen-Kraftwagen-Kolonnen
(39) bei den Kolonnen
(40) Unstraglichkeiten
(41) Gewegungsfreiheit
all corps, during that period, drew their subsistence directly from
the units of the communications zone; very little was drawn from
the corps trains."

With regard to the further progress of the advance, covering the period beginning about August 22 and terminating with the arrival on the banks of the Somme, at the end of that month, I have no special comments to offer. During this time, the development of the army on a broader front (47) and the shortening of the march columns greatly facilitated the utilization of supplies found in the theatre of operations (48), and the operation of the supply service in general.

Section b.—In accordance with the orders of August 30, the First Army, on August 31, changed the direction of its advance so that, instead of heading southwest, it was advancing south and southeast (See pp. 97 et seq.)

Regarding this change of direction the following comments are of interest. The influence of this change of direction upon the organization and operation (49) of the supply service, at that time, seems to have been felt to a much lesser degree than might be assumed. From several statements that follow, the conclusion may be drawn that the inadequate protection (50) of the right of the army caused our only difficulties. Even during that early stage, there was missing on this flank a reserve laterally echeloned (51), which might have been used in support of the right wing.

The cavalry corps, during the action (52) on the Somme, had drifted to the left flank of the First Army; it was subsequently put in line (53) in support (54) of the IX Army Corps, which was preparing to attack south of Roye. Such an employment was, in my opinion, not quite in accord with the nature (55) of the cavalry arm and its proper mission. Nevertheless, the cavalry should not have
neglected reconnaissance along the unprotected flank of the army, in the region of Amiens—Bapaume.

Lieutenant Colonel Ludloff who, at that time, as member of the headquarters staff of the II Army Corps was responsible for the proper functioning of the supply service, has the following to say regarding the conditions then existing:

"The turn (56) of the army from Cambrai to the direction of Compiegne did not create any difficulties for the ammunition columns and the trains of the II Army Corps; nor did it affect the service of supply.

On the day when the change of direction was begun (near Moislains east of Amiens), the convoys of the II Army Corps, while marching on the road: Cambrai—Amiens, almost drove into the midst of a division of French territorialists (57). The latter, coming from Amiens, was advancing against the flank and rear of the II Army Corps. Owing to the failure of the independent cavalry (58) to reconnoiter along the right flank, the commander of the II Army Corps had, up to the morning of that day, been left in complete ignorance of the presence of new French troop contingents on his right. Only because of the fact that the commander of the ammunition column (59), on his own initiative, had reconnoitered the highroad (60) to Amiens, was it possible to stop this column, at a distance from the French of but a few kilometers. It would seem, however, that the French were likewise deficient with regard to reconnaissance."

Privy Councillor Lange, then Commissary of the III Army Corps, submits the following statement:

"The change of direction (61) of the army corps, as far as the forwarding of subsistence supplies was concerned, entailed no inconveniences. The loaded subsistence companies, as well as the empty ones, were able on several occasions to shorten their marches to and from the combatant troops, by moving along the cord of the arc which the corps had described during the change; these marches, made after previous consultation with the adjoining army corps, generally succeeded."

General Sydow, the then Chief of Staff of the IX Army Corps, writes:

"During the turn of the First Army from a southwesterly to a southeasterly direction, no difficulties were experienced by the IX Army Corps, then forming the left wing of the First Army. By avoiding the angle, which had been created near Roye, the ammunition column and the trains were brought up along a much shorter route, thus clearing the roads for the adjoining corps (62)."

(56) die Schwenkung (59) Kommandeur der Mun-
(57) französische Territorial-nitionskolonnen (60) auf der groszen Strasze
Division (58) Heereskavallerie (61) Schwenkung
(62) Nachbarkorps
From the viewpoint of the communications zone commander, General v. Muller, who was during that period Chief of Staff of the communications zone, makes the following comments:

"The change of direction from the old front: Amiens—Roye, toward the southeast, which began on August 31, created no difficulties so far as the bringing up of communications zone trains and ammunition companies (63) was concerned. Nor was it necessary to increase the marches of these columns; on the contrary, owing to the dense road net (64), it was often possible to make use of short-cuts. However in this connection, close attention had to be paid to the inner flank, to prevent the columns there from crowding unduly, or from getting mixed.

One apprehension forced itself upon the consciousness of everyone in the communications zone: ‘who is going to protect our right flank (65)? Why does G.H.Q. (66) not take possession of the important coast line, now open and without protection; are there no second line formations available for that purpose?’—The communications zone commander (67) could ill afford to ponder over those matters; nor could he, with his numerically weak forces, furnish protection to the deeply echeloned right flank. All the communications zone commander could do, was to hope that all would turn out well: and, barring a few minor mishaps, everything actually did go well, up to that juncture.”

Colonel Mohr, the then Commander of the Ammunition Service of the communications zone, on the other hand, proves by his complaint—extracts of which follow—that the sudden turn of the First Army into a new direction was not consummated as smoothly as might be imagined. In his war diary (68), reports of which for that period were furnished to higher authority, the following appears:

“Often the various army corps failed to inform the communications zone commander of changes in march objectives, and of the fact that transportation companies of the communications zone (70) had been unloaded. The latter, lacking the means for telegraphic communication (71), were unable to reach the zone authorities in rear. As a consequence the communications zone commander after the lapse of a few days was unable to locate, despite diligent and repeated search, the ammunition companies and trains, sent to the corps. Owing to the daily lateral displacement of the supply lines (72) leading to the various corps (made necessary by the change of direction of the army), which fact, because of the distance, could not always be communicated in time to the transportation companies, some of these continued on the old road and reached the wrong corps.”
Major Buhrmann, at that time railway agent (73) of the First Army, is of the opinion that the repeated changes of direction of the army might easily have interfered with the measures taken for the repair (74) and extension (75) of the railway lines, had not careful study of future requirements, and close cooperation (76) with army headquarters, led to the selection of the proper lines to be prepared for operation.

In my judgment, the fact that at that time the railhead (77) was relatively distant (and not "careful study of future requirements") was primarily responsible for not putting into operation those lines which could not have been used. For it was quite impossible to foresee, a few days before the event, that a change of front to a southerly direction was to occur; so this change of direction received no consideration in the selection of the railway lines to be reconstructed (78). The fortress of Maubeuge, up to its capture, precluded the possibility of extending the line of communication of the First Army, behind its inner flank, a location which for reasons of security would have been highly desirable (79). Its actual location via Cambrai—St. Quentin toward Chauny (See map, Plate XXII) might, in those critical days of September, have offered an easy opportunity to an enterprising French cavalry leader to interfere with the supply service of the army in a most embarrassing manner.

Section c.—The abrupt change of direction of the First Army—beginning September 5, on the eve of the Battle of the Marne—from a front facing south to a new position facing west (See pages 104, 105).

The mixing of organizations (80), occasioned by that change of direction, required carefully prepared orders for the marches of the troops, the location of the supply lines
(81), and the movements of the ammunition columns and trains necessary for the operation of the service of supply. These orders have been discussed very extensively in Chapter II, Section c of General von Kuhl’s treatise (82).

Some comments follow concerning the effect, which that difficult situation, as well as the orders issued by army headquarters to cope with it, had upon the headquarters staffs of the larger units (83) and upon the troops themselves.

Lieutenant Colonel Ludloff, at that time member of the staff of the II Army Corps and responsible for the functioning of the supply service, has the following to say:

“No difficulties of importance for the supply service of the II Army Corps arose on account of the change of direction on the eve of the Battle of the Marne. This corps which, up to that stage, had been second in line from the right (84), fell back to the northern bank of the Marne, almost at right angles (85) to its former direction of advance, to support the IV Reserve Corps. Consequently, the ammunition column and the trains of the II Army Corps were already in more or less favorable positions for the further provisioning (86) of the corps, requiring a minor displacement only. So, during the battle, these convoys were favorably located and using as supply line, the road: Crouy—Villers Cotterets, leading toward Cuts.

The measures taken by the communications zone commander (87) had been adapted promptly and logically to the changed situation, with the result that the supply service suffered no inconvenience. Not until after the Battle of the Marne, did a shortage of ammunition (88) make itself felt, that is, at the moment deliveries from the zone of the interior (89) came to a standstill. No shortage of ammunition was ever noted that could be attributed to a failure or breakdown of the transportation companies.”

Privy Councillor Lange, at that time Commissary of the III Army Corps, states:

“We disseminated promptly the orders concerning the new supply lines, with the result that even the rearmost corps subsistence companies (90) could march on the new roads as early as September 6; the regular service of supply of the corps (91) was then resumed. Each troop unit was allowed to draw rations wherever provisions were found. The troops, nevertheless, for a period of the two days, were
obliged to use their reserve rations (92) because regular rations could not be supplied, without crossing of columns and other interruptions that would have impeded the march of the troops.”

General Sydow, the then Chief of Staff of the IX Corps states:

“I do not recall that any serious difficulties were caused by the sudden change of direction (93) of the IX Army Corps, from Esternay, where it had been engaged in combat, to a new front facing Maunoury’s army. However, such difficulties would surely have arisen, if the supply service—principally by means of zone motor transport companies—had not begun at once to function efficiently and at the right place, enabling us to refill again and again the empty corps ammunition companies and trains. On several occasions motor transport companies carried supplies directly to the troops.

Kraewel’s detachment (94), which was sent out to cover the Marne, had been provided with one-half infantry ammunition company, and one-half field artillery ammunition company, both of which were refilled in good season. As far as I can remember, this detachment never suffered any shortage of ammunition or rations.”

General v. Muller, Chief of Staff of the communications zone, reports:

“The abrupt change of direction on Sept. 5th, of the First Army towards the right, in preparation for the Battle of the Marne, necessarily upset all supply arrangements of the communications zone commander; as well as the assignment (95) to the corps of the various zone ammunition companies and trains. Under these circumstances, it became necessary to think straight, to modify quickly the original dispositions, and to rush officers forward in motor cars (96) with instructions to overtake this transportation and start it in the new direction. These measures, which taxed to the utmost the organizing ability (97), the working capacity (98), and the nerves of all departments (99) of the communications zone, proved a complete success.

Moreover, some of the zone convoys had received march objectives which were either in the gradually widening gap between the First and Second Armies, or so far beyond the Marne that the ammunition companies and the trains were exposed to the danger of running right into the enemy. They had to be stopped immediately and turned into a new direction, and then made available to corps other than those for which they were originally intended.

These events proved the wisdom of the practice (100)—which communications zone headquarters had been following right along—of always keeping at army headquarters a general staff officer of the communications zone, with a motor car at his disposal. It was this officer’s duty to send to communications zone headquarters all necessary information; furthermore, he had full powers to issue,
in case of emergency, on his own initiative, orders to the leading convoys. On one of the most critical days—I believe it was September 8th—when the command post of the army (101) was at Vendrest, I personally reported there, and, upon my return at night, was able to stop several of our motor transport companies which had been ordered to march on Chateau Thierry, and to turn them into the right direction. It was during this period that our great shortage of motor vehicles interfered seriously with supply.

The principal lesson I learned during this period may be summed up in three words: no fixed scheme (102)."

Section d.—The withdrawal to the region north of the Aisne (September 9-12.) following the Battle of the Marne (103).

The experiences gained during this period are discussed in the following reports:

General von Hammerstein of the Reichswehr (*), during this phase Chief of Staff of the II Army Corps, writes that he observed closely the withdrawal of the ammunition column and the trains to positions north of the Aisne, and can state that these movements were consummated smoothly and without friction: a fact which he attributes primarily to the orders issued for the occasion. All this, he continues, was accomplished, notwithstanding the fact that it had been necessary, in a number of cases, to assign the same road to the ammunition columns and the trains of several army corps. The difficult march through Soissons was likewise effected smoothly, due to the efforts of tactful and energetic officers who had been put in charge.

He adds that neither ammunition nor subsistence supplies (104) of the II Army Corps fell into the hands of the enemy.

Captain Fiebig, then Adjutant to the Train Commander (105) of the II Army Corps, corroborates the above statement by saying that the ammunition column and the trains of the II Army Corps did not sustain any losses, excepting an occasional man or horse here and there. Only one-half

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(101) Armee-Oberkommando  (*') official designation of Ger-
(102) Kein Schema (meaning man Army since the war
—no invariable routine)
(103) Marneschlacht  (104) Verpflegungsbestande
(105) Kommandeure des Trains
field hospital which had been set up, was captured (106), because its commander could not leave the wounded.

General von Hammerstein concludes his remarks as follows:

“When the commanding general (General von Linsingen) and myself, on September 11, were in the front line of the 3d Division, which was still holding an intrenched rear-guard position (107) south of the Aisne and south of the line: Saconin et Breuil—Dilly, we suddenly perceived, on the road: Villers Cotterets—Soissons, a field hospital company madly galloping toward us, from the direction of the enemy, its horses literally covered with foam. This was the last missing section of the corps trains (108); immediately thereafter, British cavalry gained contact (109) with the 3d Division.”

Lieutenant Colonel Ludloff of the Reichswehr who, in his capacity of general staff officer with the II Army Corps, was then responsible for the corps supply, writes:

“During the withdrawal (110), after the Battle of the Marne, the supply service of the II Army Corps experienced no serious difficulties. The ammunition column and the trains were simply started to the rear, in accordance with general directions (111) which, after the battle, had been indicated at army headquarters on the 1:300,000 map with a few pencil strokes to the corps staff officer present. At certain defiles (112) and at river crossings (113), field officers or general staff officers were stationed to regulate the traffic. I am almost ready to say that the supply service never functioned better than at the time of that withdrawal. The reason is not far to seek: the hauls along the supply lines (114) were constantly growing shorter, and supplies had only to be deposited at certain points along the route where the approaching troop vehicles could take them up.”

Statements received by me, either orally or in writing, from officers in responsible positions with the other corps, are very similar to those already quoted. Thus, for example, General Sydow, former Chief of Staff of the IX Army Corps, writes:

“The IX Army Corps, during the withdrawal, suffered the loss of one field hospital (115) which had to be left behind, under the protection of the Geneva Convention (116); the great number of seriously wounded, which it contained, could not be moved. In all other respects, the withdrawal of the troops, including all their impedimenta (117), as well as the ammunition columns and the trains, was effected very smoothly; it was not necessary to abandon any...
ammunition or subsistence supplies. Such quantities of the supplies as had not been used could, without undue haste, be reloaded and removed. The withdrawal, it must be remembered, was entirely voluntary and executed without any pressure from the enemy.”

Privy Councillor Lange, Commissary (118) of the III Army Corps, makes this comment:

“When the withdrawal began, there had been deposited along the routes of march, by direction of the supply authorities (119), quantities of hard bread (120) and canned goods (121), to be picked up by the troops. Owing to the prevailing darkness—for the marches were in part executed during the night—this method of providing subsistence when put into effect on a large scale, did not always prove successful. The reason was that unit commanders (122), in order to avoid congestion and unnecessary halts, were unable to stop at these dumps (123); moreover, the organizations who, up to that time, had been well provisioned, seemed in the majority of cases, to show no special desire to halt and draw rations.

The supplies on hand at the last corps distributing point (124) during the battle, were removed entirely, after a final ration issue to the troops. Another distributing point was then established at Soissons, to be used by the troops while withdrawing in a northerly direction. Few supplies were issued here; so it became necessary to destroy what was left over, since all transportation (125) had already crossed to the right bank of the Aisne.

The commanders of the ammunition column and the trains had been ordered to pick up all wounded (126) found in villages or along the routes, which they were to pass: this was generally complied with, as far as circumstances would permit.”

Section e.—Remarks of a general nature dealing with the entire period of operations (127) under consideration.

I shall, in the following, dwell upon a few features, not heretofore mentioned:

Lieutenant Colonel Ludloff, at that time member of the headquarters staff of the II Army Corps, offers the following with regard to the operation of the supply service:

“The orders for the operation of the supply service in the II Army Corps were somewhat different from those issued by other higher echelons of command (128), in that we studiously avoided issuing voluminous written administrative orders (129) or preparing so-called ‘march-tables for the ammunition columns and the trains (130).’ It was our policy to issue only very brief orders,
which left the commanders of the ammunition column and the trains ample liberty of action (131). On the other hand, we stressed the fact that these commanders, and the general staff officer for supply at corps headquarters, should get in personal touch (132), every day if possible, with the various sections of the ammunition column and the trains.

At these conferences subordinate commanders (133) were oriented in regard to the general mission; and thereafter, based upon the existing situation, proper administrative orders were issued. The practice was soon established, that the general staff officer for supply, in company with either the commander of the ammunition column or the commander of the trains, drove back early in the afternoon and personally located the column and the trains. This procedure had the advantage that the commanders of the transportation in rear were kept informed as to the situation in front, by which the so-called 'train grape vine' and other harmful rumors (134) were practically eliminated. Moreover, army headquarters was promptly and accurately informed of any friction in rear, with the result that neither the combatant troops nor the ammunition column and the trains (135) were given orders which, in the end, could not have been executed.

I desire to add here that the experiences, gained during the first weeks of open warfare (136), led the other corps commanders also to soon adopt methods conforming, in general, to those in vogue in the II Army Corps.

With reference to the general supply situation (137) as it existed in the III Army Corps, Captain Fiebig reports as follows:

"As far as my experience goes, the troops of the II Army Corps, during the entire period, from the beginning of the advance to the withdrawal behind the Aisne, were always adequately provided with supplies of all kinds. The operation of the supply service was, of course, greatly facilitated by the fact that the troops, during the advance, were able to live largely on the resources of the country (138). Thus, in the beginning, it often happened that the ration vehicles and forage wagons of the troop units did not report at the distributing points of the trains at all, so that the latter remained filled.

We never found it necessary to borrow supplies from another corps nor were we asked to loan supplies to another corps."

General von Hammerstein amplifies the foregoing by saying:

"On a few occasions we were embarassed in our supply by the cavalry corps (independent cavalry) operating ahead of us. Up to

(131) Freiheit des Handelns
(132) personliche Fuhlung
(133) die untergebenen Dienststellen
(134) Kolonnengeruchte
(135) Kolonnen
(136) des Bewegungskrieges
(137) Versorgungsverhalten
(138) aus dem Lande Leben
Konnten
September 1, this corps on account of difficulties in its own supply (139), occasionally came into our shelter area in the evening and requisitioned upon the inhabitants, to the detriment of our own requisitions. Furthermore, on August 26, near Cambrai, the cavalry corps made an urgent request for ammunition thereby upsetting all our own dispositions and reducing seriously our stocks which, on account of numerous day-time encounters (140), had been greatly depleted. But those requests had to be put up with. The independent cavalry (141) had to rely for its supplies on the nearest army corps since it could not be encumbered with trains. The ammunition we had transferred was replaced by zone motor transport companies (142), in such good season that no actual shortage of ammunition ever occurred in battle.

Lieutenant Colonel Ludloff of the II Army Corps, at the time in question, goes even more into detail when speaking of the interference caused by the independent cavalry:

"The transportation (143) of the cavalry divisions caused a good deal of trouble, on more than one occasion. The mobility of the cavalry trains, in particular, was greatly impaired by requisitioning (from the inhabitants) vehicles of every description. The commanders of the trains (144) seemed to think that this practice was necessary, in order to meet the difficulties of supplying ammunition and subsistence and of transporting men without mounts. As a rule, the cavalry ammunition companies and trains (145) were required to make long marches in order to keep up with the advance by bounds (146) of the cavalry divisions. So it happened that the transportation personnel of cavalry divisions rode on the wagons to a far greater extent than is ordinarily the custom, with the result that discipline slackened more rapidly among them than in other units (147). Among the light-weight, well-horsed military vehicles (148) that were organically provided, there soon appeared heavy two-wheeled carts of Belgian origin, drawn by horses of the heaviest type. The latter were not able to keep up with the speed that trains of this kind are required to maintain at times; thus resulting in congestion of roads (149) and other disturbances which, in turn, were bound to react unfavorably upon the movements of convoys (150) of the II Army Corps. The final outcome was that the cavalry divisions were, to a greater or lesser extent, always short of ammunition; probably because the hauling of supplies could not keep pace with the march performances of the cavalry. For this reason, the cavalry divisions eventually were an actual burden upon the II Army Corps. The independent cavalry became less burdensome to the supply service when, owing to exhaustion (151), it was compelled to maintain closer contact with the army corps. This put an end to the 'spasmodic' requests (152) of the cavalry which, for that very reason, were so hard to satisfy."
With reference to the subsistence situation (153) in general during the entire period under discussion, Privy Councillor Lange of the III Army Corps comments as follows:

“No complaints were received indicating that subsistence was inadequate. If a few troop contingents ran short of certain ration components, they invariably found abundant supplies in their zone of advance, which were procured by requisition upon the population (154). In a few isolated cases units assisted each other by transferring supplies.

In order to lighten the demands upon the supply service (155) as much as possible, corps headquarters had ordered that the troops should subsist primarily on the provisions obtained in the billets or found in the country at large. Only in case this method of subsistence proved a failure, were the supplies carried in the trains (156) to be touched. Hence, requisitioning was actually the prevailing practice while the advance continued. During the first days of the march through Belgium, requisitioning met with some resistance on the part of the inhabitants, who had become excited and rebellious as a result of violent agitation. In France, on the other hand, requisitioning met with little trouble. During the long continued advance, requisitioning for the purpose of subsisting the troops, cannot be dispensed with. The inhabitants will submit to it as a matter of course, provided the supplies are procured under the supervision (157) of officers or military officials (158). In case such supervision is absent, requisitioning is apt to degenerate into pillage (159) and to undermine discipline most seriously.”

With reference to the important matter of bread supply (160), Lieutenant Colonel Ludloff has the following to say:

“In summing up, it may be stated, with regard to the entire period of the advance, that the troops could not have been provided with fresh bread and with grain for the animals, during the long daily marches, if it had not been for the essential contributions in this respect derived from the resources of the country. It was practically impossible to supply the troops with fresh bread at the proper time. Time and space frequently prevented prompt delivery of the bread that had been baked in the field, with the result that it was spoiled when it reached the troops. So the men were mostly dependent on the bread found in the towns and villages (161). The fact that, at the time of the advance, the oat crop had just been cut and was standing shocked (162) in the fields, helped us considerably.”

Similar conditions with reference to the bread supply prevailed in all the other army corps. The truth is that

(153) Verpflegungslage
(154) im Wege der Beiträgung
(155) zur Entlastung des Nachschubes
(156) die mitgeführten Best-ando
(157) unter Aufsicht
(158) Beamten
(159) Plunderungen
(160) Brotversorgung
(161) in den Ortschaften
(162) in Garben
our system of supplying bread (163), by means of field bakery companies, was not prepared for such a long continued and rapid advance without pauses for rest (See p. 141). To keep up with their corps, bakery companies (164) were required to march so much that insufficient time was left for the actual work of baking (165). On the other hand, if they remained too long in one place in order to bake, the distance to the troops increased so much that it could not be covered in one haul by the horse-drawn vehicles. The latter, owing to the shortage of motor transport companies, were alone available for the transportation of bread. The motorization of bakery companies would appear to be an imperative necessity. The system employed by us in 1914 was incapable of coping with the conditions resulting from our rapid advance.

Privy Councillor Lange, however, shows in the following remarks that it is quite possible to overcome even the difficulties stated, provided more favorable conditions exist and due discretion and care are exercised:

"Ample supplies of flour were found in Landrecies and Le Cateau; from these the flour companies were refilled, and the remainder, after having been loaded on requisitioned vehicles, was carried along as a corps reserve. Toward the end of August, an empty motor transport company was placed at the disposal of the corps. It was used exclusively for the transportation of fresh bread, which the motor trucks would carry to the troops. Thus it was possible for the bakery companies to remain much longer in one place for baking, and to turn out approximately the quantities called for by the original program. The bread supply service did not fail during this period."

General Sydow writes the following about the general supply situation, as it existed in the IX Army Corps:

"The shortage of fresh bread which made itself felt at an early date, proved a serious handicap because the hard bread issued to the troops, in lieu of fresh bread, was not satisfying. Apart from this shortage it can be said, however, that the troops generally did receive the necessary quantities of food and that the replenishment of ammunition (166) was also adequate. Mutual transfers of sub-

(163) System der Brotversorgung
(164) Backereiformationen
(165) zum Backbetrieb
(166) That no shortage of ammunition was experienced during the Battle of the Marne, is proved by an entry found by the writer in the war diary of the headquarters of the communications zone. According to this entry the Chief of Staff of the communications zone who had, on September 8 gone to army headquarters at Chauny, sent back word for the information of all concerned as follows: "There is enough ammunition on hand; until further orders, subsistence supplies will receive priority in shipment."
sistence and ammunition (167) did occur now and then between units of the same corps, but not between corps.

While the troops were able, in a measure, to subsist on the resources of the country, requisitions in a really large scale were not made by the IX Army Corps; the advance being too rapid (168).

In conclusion, I shall quote a statement of General von Muller, reflecting the point of view of the communications zone commander:

“Up to the withdrawal behind the Aisne, after the Battle of the Marne, the service of supply from the zone of the interior to the armies functioned fairly well, although I personally had apprehensions right along with regard to the supply of ammunition. It was evident that the enormous expenditure of ammunition at the front far exceeded our peace-time estimates (169). Up to this time, the communications zone had succeeded in delivering to the troops in front line the ammunition, from the zone of the interior, promptly and expeditiously. How keenly must the sudden contrast have been felt by all concerned when, after the army had made a new stand behind the Aisne, the ammunition deliveries from the factories in the zone of the interior (170) began to lag and fail!”

Section f.—Personnel Replacements.

I close this part by adding a few words regarding the forwarding (171) of personnel replacements (172) (See p. 172).

The need of replacements (173) began to make itself felt very keenly as early as the beginning of the Battle of the Ourcq. This was due to the losses (174) suffered during the numerous engagements in August and the early part of September, as well as during the march period. But, up to the time of the Battle of the Ourcq, the demands upon the railway for transporting the urgently necessary military supplies had been so great that they could not be expected to carry personnel replacements (175) in addition. So it happened that the first replacements (176), so impatiently looked for, did not reach the various army corps of the First Army until September 20.
CHAPTER III

ORGANIZATION OF AMMUNITION TRANSPORT (1)

In his treatise (see page 2) General von Kuhl states “The ammunition column of an army corps (in 1914) consisted of four ammunition companies for the infantry, nine companies for the field artillery and eight companies for the heavy artillery.”

There were several types of ammunition companies:

- Army Corps ammunition companies (2) (of the corps ammunition column).
- These served to replace the expended stocks of the small arms ammunition wagons (3), that is, the combat train, of the infantry and cavalry, [infantry ammunition companies (4)], of the ammunition wagons (5) of the field artillery [field artillery ammunition companies (6)], and of the ammunition wagons of the heavy artillery [heavy artillery ammunition companies (7)].

- Communications Zone ammunition companies (8).
- These served to transport ammunition of all kinds from the railhead to the communications zone ammunition depots, (9) or to the refilling points (10) of the ammunition companies of the army corps.

Army headquarters did not interfere, either with the employment, or with the routine duties of the two types of ammunition companies mentioned above. In the case of the

---

(1) Munitionskolonnen (3) Patronenwagen  
(2) Munitionskolonnen der Armeekorps  
(4) Infanterie-Munitionskolonnen.—As these columns are companies they will be rendered into English by “ammunition companies,” to distinguish them from ammunition columns in general. While this expression is more in conformity with our own nomenclature, it must be distinctly understood that a German ammunition company includes both personnel and transportation.  
(5) Munitionswagen  
(6) Artillerie-Munitionskolonnen  
(7) Fuszartillerie-Munitionskolonnen. See footnote 4, above.  
(8) Etappen-Munitionskolonnen  
(9) Munitionsdepots der Etappen  
(10) Empfangstellen
army corps ammunition companies, it exercised command only through the army corps headquarters; in the case of the communications zone companies, only through the headquarters of the communications zone. Hence, the chain of command (11), in the former case, really began at the headquarters of the corps, while, in the latter, it began at the headquarters of the communications zone (12).

Section a.—The Corps Ammunition Column.

The ammunition companies of an army corps were under the command of the “commander of the ammunition column” (13), who was either a general officer or a colonel. He reported directly to army corps headquarters. His immediate subordinates were the commanders of the two ammunition battalions (14) and the commander of the heavy artillery ammunition battalion (15), all of whom were field officers. Each ammunition battalion commander had under him a number of infantry ammunition companies and field artillery ammunition companies; the heavy artillery ammunition battalion commander had under him only heavy artillery ammunition companies. Each company was in charge of a commander, who was either a captain of artillery or of train (16).

The typical organization of the ammunition column of an army corps is illustrated in the diagram, Plate XIV.

Compared with the units of the combatant troops, the combined ammunition companies of an army corps (the corps ammunition column) corresponded essentially to a regiment of infantry; an ammunition battalion, to a battalion of infantry; and the single ammunition company to a company or troop.

The organization of the several types of ammunition companies of the corps is shown in the following tables.—

(11) Stufenleiter der Kommandegewalt (12) Etappen-Inspektion
(13) Kommandeur der Munitionskolonnen
(14) Munitionskolonnen-Abteilungen
(15) Fuszartillerie-Munitionskolonnen-Abteilungen
(16) a captain of artillery was called “Hauptmann;” a captain of train “Rittmeister.”
Foot-Notes.

According to General von Kuhl's statement, there should be 9 field artillery ammunition companies; the pre-war organization called for 8 companies only, one of which carried howitzer ammunition. See Schwarte, Der Grosse Krieg, Organisationen, Erster Teil, page 399, and v. Weizel, Offiziers Taschenbuch of 1913, page 2.

Field Artillery Ammunition Companies: No. 4 and No. 8 contained howitzer ammunition.

Plate XIV
### TABLE 1

**INFANTRY (SMALL ARMS) AMMUNITION COMPANY (17)**

Commander (18): 1 captain (of artillery or train).

**First Half-Company (19) Chief (20): 1 second lieutenant**

<table>
<thead>
<tr>
<th>1st Sec. (21), 1 corp, mtd. (22) or lance corp. (23)</th>
<th>2 six-horse small arms ammunition</th>
</tr>
</thead>
<tbody>
<tr>
<td>2d &quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td>3d &quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td>4th &quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td>5th &quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td>6th &quot;</td>
<td>&quot;</td>
</tr>
</tbody>
</table>

**Second Half-Company (19) Chief (20): 1 second lieutenant**

<table>
<thead>
<tr>
<th>7th Sec. (21), 1 corp, mtd. (22) or lance corp (23)</th>
<th>2 six-horse small arms ammunition</th>
</tr>
</thead>
<tbody>
<tr>
<td>8th &quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td>9th &quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td>10th &quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td>11th &quot;</td>
<td>&quot;</td>
</tr>
</tbody>
</table>

Supplementary Sec. (25), 1 mtd. corp. (22) 2 supply wagons (26)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 field forge</td>
<td></td>
</tr>
<tr>
<td>1 forage wagon</td>
<td></td>
</tr>
<tr>
<td>1 ration wagon</td>
<td></td>
</tr>
</tbody>
</table>

**Notes accompanying Table 1:**

Total strength: 3 officers; 184 non-commissioned officers and men; 197 horses; 28 vehicles.

The carrying capacity of one small arms ammunition wagon (24) was:

(a) 14400 small arms cartridges put up in paste-board boxes.

(b) 15680 small arms cartridges, put up in belts.

One infantry ammunition company carried, in round numbers, from 330,000 to 550,000 small arms cartridges, according to the manner of packing. The subdivision of the ammunition company into half-companies was made, because experience had taught that it would frequently become necessary to break up the company into smaller fractions, for purposes of refilling and distribution.

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(17) Used also by the cavalry, but without change of designation; see p. 125.

(18) Kommandeur (20) Fuhrer

(19) Halbkolonne (21) Zug

(22) Unteroffizier (meaning sometimes “corporal” and again “non-commissioned officer,” according to context).

(23) Gefreiter; equivalent to our private 1st cl; privates 1st cl would often act as corporals; “lance corporal” is, therefore, the best translation in this case.

(24) Patronenwagen (27) Feldschmiede

(25) Erganzungszug (28) Futterwagen

(26) Verratswagen (29) Lebensmittelwagen
### TABLE 2

**FIELD ARTILLERY AMMUNITION COMPANY (30).*

Commander: 1 captain (of artillery or train).

*First Half-Company.*—Chief: 1 second lieutenant.

<table>
<thead>
<tr>
<th>1st</th>
<th>Sec. 1 mounted corp. or lance corp; 2 ammunition wagons. (31)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2d</td>
<td>1</td>
</tr>
<tr>
<td>3d</td>
<td>1</td>
</tr>
<tr>
<td>4th</td>
<td>1</td>
</tr>
<tr>
<td>5th</td>
<td>1</td>
</tr>
</tbody>
</table>

1st Sec. 1 mounted corp. or lance corp; 2 ammunition wagons. (31)

1 supply wagon.

| 6th | 1                                                             |

2 ammunition wagons.

*Second Half-Company.* Chief: 1 second lieutenant.

<table>
<thead>
<tr>
<th>7th</th>
<th>Sec. 1 mounted corp. or lance corp; 2 ammunition wagons. (31)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8th</td>
<td>1</td>
</tr>
<tr>
<td>9th</td>
<td>1</td>
</tr>
<tr>
<td>10th</td>
<td>1</td>
</tr>
<tr>
<td>11th</td>
<td>1</td>
</tr>
</tbody>
</table>

7th Sec. 1 mounted corp. or lance corp; 2 ammunition wagons. (31)

1 supply wagon.

2 ammunition wagons.

1st Sec. 1 mounted corp. or lance corp; 2 ammunition wagons. (31)

1 supply wagon.

2 ammunition wagons.

Supplementary Sec. 1 mounted corporal; 2 supply wagons

1 field forge

1 forage wagon

1 ration wagon.

**Notes accompanying Table 2:**

Total strength: 3 officers; 183 non-commissioned officers and men; 193 horses; 28 vehicles.

The carrying capacity of one field artillery ammunition company was: 2154 rounds of fixed ammunition (32) for field artillery, or 1390 universal (H.E. and shrapnel) shells (33) for light field howitzers.

---

*When not otherwise indicated, see Table 1, preceding, for German nomenclature.

(30) A company carrying ammunition for field howitzers was termed “Feldhaubitze-Munitionskolonne,” i.e., field howitzer ammunition company; it had the same organization.

(31) Munitionswagen

(32) Geschoszpatronen

(33) Einheitsgeschesse
TABLE 3
HEAVY ARTILLERY AMMUNITION COMPANY*

Commander: 1 captain (of artillery or train).

First Half-Company. Chief: 1 second lieutenant or senior non-
commissioned officer.

<table>
<thead>
<tr>
<th>1st</th>
<th>Sec.</th>
<th>1 mounted corp. or lance corp; 2 ammunition wagons. (31)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2d</td>
<td>&quot;</td>
<td>1</td>
</tr>
<tr>
<td>3d</td>
<td>&quot;</td>
<td>1</td>
</tr>
<tr>
<td>4th</td>
<td>&quot;</td>
<td>1</td>
</tr>
</tbody>
</table>

Second Half-Company. Chief: 1 second lieutenant or senior non-
commissioned officer.

<table>
<thead>
<tr>
<th>5th</th>
<th>Sec.</th>
<th>1 mounted corp. or lance corp; 2 ammunition wagons. (31)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6th</td>
<td>&quot;</td>
<td>1</td>
</tr>
<tr>
<td>7th</td>
<td>&quot;</td>
<td>1</td>
</tr>
<tr>
<td>8th</td>
<td>&quot;</td>
<td>1</td>
</tr>
</tbody>
</table>

Supplementary Section: 1 mounted corp; 1 supply wagon
1 blacksmith wagon (34)
1 forage wagon

Notes accompanying Table 3:
Total strength: 2 officers; 103 non-commissioned officers and men;
99 horses; 20 vehicles.

The capacity of one heavy artillery ammunition company was: 612
heavy howitzer shells (35), or 238 mortar shells (36).

*When not otherwise indicated, see Table 1, preceding, for Ger-
man nomenclature.

Section b.—Communications Zone Ammunition Companies.

The communications zone ammunition companies did not contain exclusively ammunition transport wagons kept
on hand in time of peace, but included also vehicles pressed
into service at the time of mobilization with an average
carrying capacity of about one metric ton (1000 kilograms)
(38). In organizing communications zone ammunition com-
panies, the fact was taken into consideration that the de-
mands upon them as regards mobility and divisibility into
sub-sections, would not be so great as in the case of the
corps ammunition companies.

(34) Schmiedewagen
(35) schwere Feldhaubitze-Grenaten
(36) Morser-Granaten
(38) 2204.6 pounds
The organization of a communications zone ammunition company is shown below.

**TABLE 4**

**COMMUNICATIONS ZONE AMMUNITION COMPANY** *

Commander: 1 captain (of artillery or train).

*First Half-Company.* Chief: 1 second lieutenant

1st Sec. 1 mtd. corp. or lance corp; 9 am. transport wagons (37)
2d " 1 " " " " " " 8 " " "
3d " 1 " " " " " " 8 " " "

*Second Half-Company.* Chief: 1 second lieutenant

4th Sec. 1 mtd. corp. or lance corp; 9 am. transport wagons (37)
5th " 1 " " " " " " 8 " " "
6th " 1 " " " " " " 8 " " "

1 supply wagon

**Supplementary Section.** 1 mtd. corp; 1 supply wagon

1 field forge

**Notes accompanying Table 4:**

Total strength: 3 officers; 133 non-commissioned officers and men; 136 horses; 53 vehicles.

According to the type of ammunition in the loads, the capacity of a communications zone ammunition company was:

- Infantry (small arms) cartridges in pasteboard boxes — 1,575,000
- Infantry (small arms) cartridges in belts — 1,820,000
- Rounds of fixed ammunition for field artillery — 5,850
- Universal (H.E. and shrapnel) shells for light field howitzers (33) — — 2,100
- H.E. shells for heavy field howitzers — — 1,000
- Mortar shells — — 400
- 10 cm. H.E. shells — — 2,000
- 13 cm. H.E. shells — — 800

Prior to the war the army corps had at their disposal no motor transport companies (39) at all; their ammunition companies contained only horse-drawn vehicles. The same was true of the communications zone ammunition companies. However, communications zone headquarters had a number of motor transport companies at its disposal, which could be used for various purposes and not merely for the

* When not otherwise indicated, see Table I, preceding, for German nomenclature.

(37) Munitionstransportwagen (39) Kraftwagenkolonnen
transportation of ammunition. As a matter of fact, during the first stages of the war, before stabilization set in, these were used for the transportation of ammunition more than for any other purpose. (See pp. 189 et seq). Communication zone headquarters of the First Army—which was relatively well equipped as compared with the other German armies—possessed eighteen such communications zone motor transport companies. (40)

A communications zone motor transport company consisted of nine army motor truck units. (41) Each of these units, represented by one motor-truck with trailer (42), was able to carry a maximum load of six metric tons (=6000 kgs.) (43). Accordingly, the whole company had a carrying capacity of 54 metric tons (44), which corresponded approximately to that of a heavy supply company (45), or to that of two subsistence companies (46), or to that of two infantry (small arms) ammunition companies, or two artillery ammunition companies.

These communications zone motor transport companies were under the orders of the “commander of the motor transport troops” (47) who was a member of the headquarters staff of the communications zone. This commander was also in charge of the communications zone motor transport park (48) which kept on hand the replacements of passenger cars for the various organizations of the army, the necessary replacements of motor trucks for the communications zone, and the proper reserve supply of accessories and spare parts (49) for these vehicles.

The only organizations provided with motor trucks in 1914, were the cavalry divisions, to each of which had been assigned a cavalry motor transport company (50). Such a company consisted of twelve cavalry motor trucks

| (40) Etappen-Kraftwagen-kolonnnen | (46) Proviantkolonnen |
| (41) Armee-Lastzügen | (47) Kraftfahrtruppen |
| (42) Kraftwagen mit Anhäng-parkern | (48) Etappen-Kraftwagen-ern |
| (43) 13,228 pounds | (49) Ersatzteile (replacement parts, literally) |
| (44) 119,048 pounds | (50) Kavallerie-Kraftwagen-kolonnnen |
| (45) Fuhrparkkolonnen | |
(51) with maximum loading capacity of three metric tons (52) each. Those companies, therefore, could each carry a total maximum load of thirty-six metric tons (53).

The principal object of these cavalry motor transport companies was to carry the rifle (Jäger) battalions, organically assigned to cavalry divisions, and enable them to keep up with the cavalry. In addition, the trucks were used for supply, whenever exceptionally difficult situations arose.
CHAPTER IV

TRAINS (1)

Section a.—Organization.

In General von Kuhl's treatise, the following statement appears on page 2; "In 1914, the trains (1) of an army corps comprised twelve field hospitals (2), six subsistence companies (3), seven heavy supply companies (4), two remount depots (5), two field bakery companies (6), and one corps bridge train (7). All the units named were horse-drawn."

In the foregoing statement, the organizations named are very properly called "corps trains," since they were an organic part of the corps. However, care must be taken in this connection not to confound them with the German "field trains and combat trains" (8). We employ the term "Bagage" (8) to designate such vehicles and horses as form part of the organic equipment of troop units, and serve to convey and carry the immediate requirements of the latter.

These trains (8) are divided into two groups: the combat trains (9) and the field trains (10). Combat trains always accompany their units, being needed even in action; the presence of field trains is required by the troops only when they are in billets, cantonment, camp, or bivouac (11).

(1) Trains—it will be noticed that the German word is the same as in English. Although the meaning, in its military application, is nearly alike in both languages, yet the following exception must be carefully noted, in order to avoid confusion. The German word "Trains" covers all collective vehicles and personnel assigned to the corps, but not forming an organic part of troop units. Parallel functioning is accomplished in our service generally by divisional "service trains" and by corps trains. The ammunition service is not included in the German term "trains"; it is operated by means of the ammunition columns which were discussed in the preceding chapter.

(2) Feldlazarette (7) Korpsbrückentrain
(3) Proviantkolonnen (8) Bagagen
(4) Fuhrparkkolonnen (9) Gefechtsbagage
(5) Pferdedepots (10) grosse Bagage
(6) Feldbäckereikolonnnen (11) im Quartier und Biwak
The combat trains will always be found with their troop units, such as battalions, squadrons, and batteries. The combined field trains, however, will, during marches under war conditions (12), follow at a certain distance in rear of their division (See Part I, p. 2). After the halt for the night (13), while the troops were either in bivouac or in billets (14), the field trains (15) were brought up to join their respective organizations. On the day following, before the march was resumed, they were again assembled to follow in rear of the division.

The combat train (16) of an infantry battalion, for example, consisted of the company ammunition wagons (17), the rolling kitchens (18), the medical supply wagon (19), and the led horses (20). The field train (15) was composed of the baggage wagons (21) and the ration wagons (22).

The trains of an army corps were commanded by the “commander of trains (23)”, a colonel, who was directly subordinate to corps headquarters, without any other echeleon of command intervening. Directly under him, were the commanding officers (field officers) of the two train battalions. These train battalion commanders (24) exercised command over a number of subsistence companies, heavy supply companies, hospital companies, and a remount depot. Each one of these units had as commanding officer a captain of artillery or train, except the hospital companies which were under a senior medical officer (25), who held the grade of major (medical) (26).

The field bakery companies and the corps bridge train, each commanded by a “commander,” were under the direct orders of the commander of trains.

The typical organization of the army corps trains is shown diagramatically in Plate XV. Compared with the
units of the combatant troops, the combined trains of an army corps corresponded approximately to a regiment of infantry; a train battalion to an infantry or artillery battalion; and the single companies, remount depots, field hospitals, etc., as well as the bridge train, corresponded to a company or troop.

---

**Organization of the Trains of an Army Corps**

**Army Corps Headquarters**

(The Commander of the Trains.)

- **Corps Bridge Train**
- **Field Bakery Companies**
- **Second Train Battalion**
- **First Train Battalion**

---

**Foot-Notes.**

47. Proviantkolonnen.

48. Omitted in original manuscript through error. Each train battalion had one (1) remount depot. (See v. Wede’s Offizier Taschenbuch of 1913, page 5; and Schwarte, der Große Krieg, Organisationen, Erster Teil; page 359.

(a) Numerals in circles denote company numbers.

Plate XV
The organization of the various company units is shown in the following tables:

### TABLE 1

**THE SUBSISTENCE COMPANY**

Commander: 1 captain of train

**First Platoon** (29). Chief: 1 second lieutenant or senior non-commissioned officer (30).


2d " 1 " 6 " " " " 

**Second Platoon.** Chief: 1 second lieutenant or senior non-commissioned officer (30).


5th " 1 " 6 " " " " 

6th " 1 " 6 " " " " 

**Supplementary Platoon.** 1 mounted corporal, 2 supply wagons (33) with the company mechanics (34).

*Notes to Table 1:*

Total strength: 3 officers; 125 non-commissioned officers and men; 183 horses; 38 vehicles.

The carrying capacity of a four-horse subsistence wagon was 750 kilograms; that of the entire subsistence company amounted to 27 metric tons (35). There were also the so-called "heavy subsistence companies (36) of the old type," having only 27 subsistence wagons, each of which would carry one metric ton (37).

The regulation load of a subsistence company, carrying both rations (38) and grain (39), was sufficient to subsist a infantry division for one day.

The wagons of the subsistence companies were of lighter construction and built especially for this service. They were, moreover, provided each with four lighter and better draft animals. Hence, they represented the mobile element of the rolling reserve of provisions (40) carried by the army corps, as compared with the slower "heavy supply companies" (see Table 2, below). The latter were equipped with wagons pressed into service during the period of mobilization, which were drawn by two heavy animals.

(29) Zug
(30) Aelterer Unteroffizier
(31) Sektion
(32) Proviantwagen
(33) Vorratswagen
(34) Handwerker der Kolonne
(35) 59,524 pounds
(36) Schwere Proviantkolon-
(37) 2204.6 pounds
(38) Portionen (for men)
(39) Rationen (for animals)
(40) Verpflegungeverrat
TABLE 2

THE HEAVY SUPPLY COMPANY

Commander: 1 captain of train

First Platoon. Chief: 1 second lieutenant or senior non-commissioned officer.
1st Section. 1 non-commissioned officer, 10 covered wagons (41).
2d " 1 " 10 
Second Platoon. Chief: 1 second lieutenant or senior non-commissioned officer.
3d Section. 1 non-commissioned officer, 10 covered wagons (41).
4th " 1 " 10 
Third Platoon. Chief: 1 second lieutenant or senior non-commissioned officer.
5th Section, 1 non-commissioned officer, 10 covered wagons (41)
6th Section, 1 " 10 " 
Supplementary Platoon. 1 corporal, 2 supply wagons.

Notes to Table 2:
Total strength: 3 officers; 109 non-commissioned officers and men; 163 horses; 62 vehicles.

The carrying capacity of a heavy supply company wagon averaged about 1200 kilograms (42). The load which the entire heavy supply company could transport ran from 57 to 58 metric tons (43).

The regulation load of rations and grain, carried by the company, was about sufficient to subsist an infantry division for one day.

TABLE 3

THE REMOUNT DEPOT

Commander: 1 captain or first lieutenant of train.

First Platoon. 1 non-commissioned officer, 6 riding horses (44), 30 wheel horses (45), 20 led horses (46).
Second Platoon. 1 non-commissioned officer, 42 riding horses.
Supplementary Platoon. 1 corporal, 1 two-horse supply wagon, 1 four-horse forage wagon.

Notes to Table 3:
Total strength: 1 officer; 63 non-commissioned officers and men; 107 horses; 2 vehicles.

Remount depots were required to furnish replacements of horses to the various headquarters organizations (47), to the foot troops, and to the technical troops; while the mounted troops were, generally speaking, dependent for their replacements on shipments by rail of trained horses, from their replacement organizations in the zone of the interior (48). It was also the duty of remount depots, to take over and care for (in addition to the number of horses given in the table), all surplus horses in the hands of the troops, as well as captured animals. Consequently, the organic strength of these remount depots could be exceeded at any time.

(41) Planwagen
(42) 2,646 pounds
(43) 125,700 pounds
(44) Reitpferde
(45) Strangpferde
(46) Vorderpferde
(47) Kommandebehörden
(48) heimatliche Ersatzformationen
TABLE 4

THE FIELD HOSPITAL. (OR HOSPITAL COMPANY)

Commander: Medical officer with grade of major (49).

First Platoon: 2 medical officers (first lieutenants (50) or second lieutenants (51)), with assigned subordinate personnel. 1 medical supply wagon (52), 1 baggage wagon (53), 2 wagons equipped with surgical instruments and medical appliances (54).

Second Platoon: 1 captain (medical) (55), 2 medical officers (first lieutenants (50) or second lieutenants (51)), with assigned subordinate personnel. 1 ambulance (56), 1 medical supply wagon (52), 2 wagons equipped with surgical instruments and medical appliances (54), 1 wagon for administrative officials (57).

Notes to Table 4:

Total strength: 6 medical officers; 3 administrative officials; 51 non-commissioned officers and men of the medical corps; 29 horses; 9 vehicles.

Each of the field hospital companies carried the equipment for 200 beds. It was their duty to give hospital treatment to the wounded who were unable to walk and to whom first aid had been administered at the dressing stations (58), established by the collecting companies of the troop units (59). The evacuation of all transportable cases to the communications zone, with a view to emptying the field hospitals at the earliest possible moment, was enjoined on all commanders.
TABLE 5

THE FIELD BAKERY COMPANY

Commander: 1 captain of train.

First Platoon: Chief: 1 second lieutenant or senior non-commissioned officer.

1st Section. 1 noncommissioned officer, 18 enlisted bakery personnel (60), 2 four-forse rolling ovens (61), 2 wagons with tools and accessories (62).

2d " (same as 1st Section).
3d " (same as 1st Section).

Second Platoon: Same organization as First Platoon.

Supplementary Platoon: 1 master baker (63), 1 first sergeant (mounted branch) (64), 7 mechanics, 1 supply wagon.

Notes to Table 5:

Total strength: 2 officers; 1 military official (paymaster (65)); 184 non-commissioned officers and men; 99 horses; 25 vehicles.

The function of the field bakery companies was to bake the bread for the army corps, in so far as the quantities required could not be obtained in any other way. Army corps headquarters designated the places where the companies should set up. After the completion of the prescribed tasks, the companies were advanced from these places, by alternate bounds, to new localities where their services were again employed. During the move, the bakery personnel was transported on requisitioned vehicles. Consequently the field bakery companies rarely marched with the combined trains.

Each company was able to operate twelve ovens and prepare, under favorable conditions, 23,000 bread rations in twenty-four hours (1 loaf = 1.5 kilograms = 2 bread rations). Thus, a company could just barely furnish one day's supply of bread to an infantry division with a few ammunition companies and trains attached.

(60) Backpersonal (63) Feldbackmeister
(61) fahrbare Backöfen (64) Wachtmeister
(62) Geratewagen (65) Zahlmeister
TABLE 6
THE CORPS BRIDGE TRAIN

<table>
<thead>
<tr>
<th>Company</th>
<th>Commander</th>
<th>Sergeant Officer</th>
<th>Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Half-Company</td>
<td>1 captain of artillery or train</td>
<td>1 second lieutenant</td>
<td>1st Platoon: 1 non-commissioned officer, mounted 6 ponton wagons</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2nd Platoon: 1 &quot; 7 ponton wagons</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3rd Platoon: 1 non-commissioned officer, mounted 6 ponton wagons</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4th Platoon: 1 &quot; 7 ponton wagons</td>
</tr>
<tr>
<td>Supplementary Platoon</td>
<td>1 first sergeant (mounted branch)</td>
<td></td>
<td>2 tool wagons, 2 supply wagons, 1 wagon carrying explosives, 1 baggage wagon, 1 ration wagon</td>
</tr>
</tbody>
</table>

Notes to Table 6:
Total strength: 3 officers; 131 non-commissioned officers and men; 224 horses; 35 vehicles.

To each corps bridge train was attached a detachment of engineer troops (71). This escort detachment consisted of 2 officers, 64 men and 2 horses.

The corps bridge train marched habitually with one of the sections (72) of the combined trains. It was brought up close to the troops, only when there was reason to believe that its services would be needed. The bridge equipment which it carried, was sufficient to construct a ponton bridge (73), 130 meters in length, and strong enough to permit the passage of units of all arms; or a bridge of a heavier type, 75 meters long, sufficiently strong for use of the heavy motor truck units (74).

In addition, there was organically assigned to each division a divisional bridge train (75), which did not form part of the army corps trains but accompanied the combatant troops of its division. An ordinary ponton bridge, measuring 35 meters in length, could be constructed by means of the equipment carried by this train.

The combined bridge trains of an army corps, that is, one corps bridge train and two divisional bridge trains, were able to construct an ordinary ponton bridge, 200 meters in length, or one of a heavier type, 120 meters in length.

(66) Backwagen  (72) Staffel
(67) Pontonwagen  (73) Kolonnenbrücke
(68) Werkzeugwagen  (74) Lastkraftsug
(69) Sprengmunitionswagon  (75) Divisionsbrückentrain
(70) Packwagen
(71) Pionier-Belgeleitkom-
Section b.—The Standard Wagon for Corps Trains.

The trains of an army corps in 1914 did not include any motor transport organizations (76). All their vehicles were horse-drawn.

As I have already remarked, there was, in 1914, no standard type (77) of wagon in use by the various train companies. This condition had the advantages of greater mobility, greater capacity and general efficiency of some companies; but it also had certain drawbacks, in so far as concerned the replacement of vehicles and parts; furthermore, it was quite impracticable to employ the train companies interchangeably for all manner of service. The conscripted vehicles of the heavy supply companies soon proved too heavy and not sufficiently durable. For this reason, efforts were made, later in the war to equip the field forces, wherever this was feasible, with a standard vehicle, the so-called “field wagon, model 95” (78). While this wagon was much lighter in weight, it still had adequate carrying capacity and strength; however, the plan was never fully carried out. In a similar manner, the ammunition companies were eventually equipped with this field wagon “95” and thereby converted into so-called “universal companies” (79), which could carry any kind of ammunition. The old ammunition companies, in 1914, had limbers (80) and trailers (81) and, on that account, could carry only such types of ammunition as fitted the special construction of these vehicles. All “universal companies” were then gradually brought up to a uniform strength of 48 field wagons each; they all had the same carrying capacity, and were, moreover equipped with a type of wagon which, in weight and construction, was specially adapted for use over difficult ground. Thus, the variety of uses to which these companies could be put was not only increased, but the organization of the trains as a whole (82) was improved.
Section c.—Removal of the Ammunition Columns and Trains from the control of the Army Corps.

After the second year of the war, it was found necessary, all misgivings and doubts to the contrary notwithstanding, to discontinue the ammunition column and the trains as organic parts of the army corps, for the following reasons.

Conditions incident to stabilized warfare, the ever changing relative importance of the various fronts, and the preparation of offensives on a vast scale, all had rendered necessary a frequent shifting of troop units, especially in the case of the higher organizations. Frequently whole army corps and divisions had to be relieved in one sector, and transported to, and placed in line in some other part of the front. This naturally placed a very heavy strain on the railways. In order to relieve this tension in some measure, it was decided that the corps ammunition columns and trains should not accompany their corps, but be kept in place and permanently assigned, as stationary (83) organizations, to their sector. The commanders of these ammunition columns and trains who, up to this time, had been with their own corps headquarters, were now transferred to the particular army headquarters, to which their sector belonged. Subordinated to these commanders were the former headquarters of the ammunition battalions or train battalions, which now became transportation section headquarters (84). Under them, the stationary transportation companies were now grouped, so as to form mixed battalions consisting partly of ammunition companies and partly of train companies. According to requirements, army headquarters then attached to the divisions in a given sector, for the length of their stay, a number of transportation section headquarters and transportation companies, for temporary use. All section headquarters and mixed companies, however, continued to be under the immediate command of their respective army headquarters, that is, under the direct command of the officer termed "commander of ammunition columns and trains."

(83) bedenständig  (84) Staffelstäbe
This change in organization was begun sometime during the latter part of 1916. As stated heretofore, it was only a makeshift, which was primarily intended to secure a much needed relief for the overburdened railways. The disadvantages of the new system were fully realized; these were dispersion, lack of cohesion, increased difficulty of supervision and administration, and unsatisfactory team-play. For major offensives it was necessary, of course, to assign to the armies concerned a much larger number of these transportation section headquarters and companies, than would have been required ordinarily. In concentrating these units the use of the railways could not always be avoided.
CHAPTER V
THE COMMUNICATIONS ZONE (1) AND THE SUPPLY SERVICE (2)

In the following I propose to answer several questions (*) which were put to me, dealing with the distribution of supplies and ammunition within the communications zone, and the operation of the service of supply in general. I shall also treat of the procurement of supplies in the zone of the interior and amplify my remarks by means of several charts illustrating the routes and channels from the factory to the front line which the supplies were required to follow, in order to reach the soldier.

Section a.—Organization and Administration of the Communications Zone.

In extension of General von Kuhl’s statements contained in Part 1 of his treatise, I shall refer once more to the organization of the communications zone and to the functions of its various establishments and installations (3). Furthermore, I shall consider the cooperation of the communications zone agencies and establishments with those of the zone of the interior (4).

The communications zone comprised such parts of one’s own country, or such occupied portions of the enemy’s country, as were situated in rear of the combat zone (5) of the field forces (6), it formed the connecting link between the army and the zone of the interior. Its lateral and rear boundaries were fixed by the Quartermaster General (7) at General Headquarters, whereas the forward boundary, separating it from the combat zone of the army, was determined by the army commander.

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(1) Etappe
(2) Nachschub
(3) Einrichtungen
(4) Heimat
(5) Operationsgebiet
(6) des Feldheeres
(7) Generalquartiermeister
(*) These and other questions were prepared by Major Koenig for the purpose of clarifying certain points of the original treatise by General v. Kuhl; see page 65.

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During the period of concentration (8), the communications zone of the First Army was in the northwestern part of the Rhine Province (9). The zone was then extended in rear of the army so that, on August 15, its forward boundary reached the Belgian border; its rear boundary was the Rhine (See sketch, Plate XVI).

As the troops advanced, the communications zone of the First Army was moved forward by degrees into Belgium; but as some zone installations had to be left temporarily on German soil, it was located for some time on both sides (east and west) of the political frontier.

On August 20th, when the main depot (10) of the communications zone was advanced to Tongres, the rear boundary of the zone was at the German frontier. On September 1st, after a military government of occupation (11) had been established in Belgium and had begun to function, the rear boundary of the communications zone extended to the western border of that portion of Belgium which had been placed under the administration of our government of occupation.

Regardless of the location of the forward boundary of the communications zone, all efforts of the communications zone commander were directed toward lightening the tasks of the corps transportation companies. Accordingly, he shortened the hauls for the corps by pushing his advance depots (12) and refilling points (13) as far forward into the combat zone as the available railway lines and the capacity of his own zone transportation companies (14) permitted. But all the communications zone personnel, matériel, and equipment used in the combat zone for this purpose remained under the orders of the communications zone commander.

By the term "line of communications" (15) (See Plate III) was meant the railway line assigned to an army for

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(8) Aufmarsch  
(9) Rheinprovinz. In that part of the province which lies east of the Dutch Province of Limburg. (literally \"issue stations\")  
(10) Etappen-Hauport  
(11) Generalgouvernement  
(12) Etappen-Magazine  
(13) Etappen-Ausgabestellen  
(14) Etappen-Kolonnen  
(15) Etappen-Linien
the purpose of connecting it with the zone of the interior. Each army had such a line of communication. For the First Army, during its advance through Belgium and northern France, this line was the railway: Aix-la-Chapelle—Liege—Louvain—Brussels. This line of communication,

the First Army had to share with the Second Army up to the capture of Maubeuge, when it became possible to reconstruct the line running via Maubeuge—Aulneys—Le Cateau—Wassigny—Hirson to Laon. Thus, the entire system of supply and evacuation of the First and Second Armies, until
well into September, was conducted over one line of communication, represented by the railway line: Aix-la-Chapelle—Liege—Louvain—Brussels. During the further course of military operations, this last mentioned road was extended via Braine le Comte—Jurbise—Mons—Valenciennes—Cambrai—St. Quentin—Tergnier to Chauny.

At the railhead (16), this line of communication was extended by the highway and country roads (17) which led up to the immediate rear of the army. The routes connecting (18) the railhead with the various army corps were called “supply lines.” (19)

Each army corps forming part of the army in the field had a corps base (20) which was located in its corps area, in the zone of the interior. For the First Army, the corps bases were located as follows: Altona (on the Elbe) for the Ninth Army Corps and the Ninth Reserve Corps; Stettin for the Second Army Corps; Berlin for the Third Army Corps and the Third Reserve Corps; Magdeburg for the Fourth Army Corps and the Fourth Reserve Corps. The military railway trains, dispatched from such corps bases to the army, followed each other as closely as possible. Shipments going the other way, from the army to the zone of the interior, were usually carried in these trains to their final destination in the corps area, barring exceptional cases, when other arrangements proved more practical.

The base (20½) of the First Army, Dusseldorf, had been fixed in time of peace, and its organization and establishments prepared beforehand. Here, close to the theater of operations, were assembled the supplies allocated to the army, in loaded trains, ships, or depots (21). It was the function of the base commander to hold these supplies ready for shipment to the front, as circumstances would require. Only a town with extensive railway yards (22) and river port facilities (23), like Dusseldorf, could satisfy these demands.

(16) Eisenbahndendpunkt
(17) Landetraszenverbindung
(18) Verbindungen
(19) Landetappenstraszon
(literally; “rural supply roads”)
(20) Etappen-Anfangeeert
(20½) Sammelstation
(21) Depots
(22) Bahnhofs-Anlagen
(23) Flusshafen-Anlagen
At the army base, a subsistence depot (24) and a supply depot (25) were established. Standard railway ammunition trains (26), as well as railway subsistence trains (27), were made up; and single freight cars (28) were loaded with ordnance and demolition equipment (29), (the so-called “standard carload shipments of ordnance and demolition equipment”) (30). These trains and freight cars were then placed on sidetracks in suitable railway yards, in the vicinity of the base.

The stocks of subsistence stores in the subsistence depot at the army base were collected by the supply service from the reserve subsistence depots (31) and the reserve depots for beef cattle (32) of the zone of the interior. The control over these stocks in the base depot was vested in a military official bearing the title of “army commissary” (33).

The reserve subsistence depots of the zone of the interior loaded provisions and forage on railway trains and dispatched the latter, in accordance with requirements, to the subsistence depot of the army base. Such trains were:

- the standard railway subsistence train (it contained all kinds of ration articles for the troops) (34);
- the standard railway flour train (35);
- the standard railway oats train (36).

From the army base these railway trains, together with the other trains that had been made up at the army base and held on sidetracks, were dispatched to the communications zone and, upon arrival in that zone, placed at the disposal of the communications zone commissary (37). This official used the contents of these trains either for the replenishment of depots or for the immediate refilling of the

(24) Proviantdepot
(25) Güterdepot
(26) Munitionszüge
(27) Verpflegungszüge
(28) Waggons
(29) Gerat und Sprengmunit-
(30) Gerate-Und Sprengmuni-
tions-Nachschübe
(31) Ersatzmagazine
(32) Erantz-Viehdepots
(33) Armee-Intendant
(34) Verpflegungszug (au-
thorized abbreviation: V-Zug.)
(35) Meblzug (authorized ab-
breviations M-Zug)
(36) Haferzug (authorized
(37) Etappen-Intendant
corps transportation companies, or sidetracked them temporarily in one of the railway yards of the communications zone.

The principal function of the base supply depot was to store provisionally, and later forward, all supplies except subsistence and ordnance, sent from the zone of the interior and destined eventually for the troops. Such supplies consisted of clothing, medical or veterinary equipment, horseshoes, and accouterments.

For the regulation and security of the traffic on the road net of the communications zone, the commander of the zone, whose official title was that of "communications zone inspector," established a number of communications zone stations. These military stations, besides serving the general purposes of guarding the communications zone and requisitioning supplies, furnished shelter for the zone troops and necessary accommodations for the various installations.

To each station, as the headquarters of a section, the zone commander assigned a headquarters group, known as "communications zone section headquarters," and fixed the boundaries of the various sections.

The number and location of the communications zone stations were determined in accordance with the requirements of the army and the special conditions existing in the zone. In accordance with requirements, there were organized at the various communications zone stations one or more of the following:

- ammunition depots;
- zone advance depots or zone refilling points;
- zone bakeries;
- zone advance depots or zone refilling points;
- zone bakeries;

(38) Frachtguter (44) Etappen-Einrichtungen
(39) Bekleidung (45) Etappen-Kommandantur
(40) Sanitäts- und Veterinär-Ausrüstung (literally; "headquarters of the station commander")
(41) Ausrüstungsgestücke (46) Bezirke
(42) Etappen-Inspekteur (47) Munitonsdepots
(43) Etappen-Orte (48) Etappen-Bäckereien
zone station hospitals (49) and other medical establishments (50);
zone remount depots (51).

The location of the communications zone main depot (10) was determined by the development of military operations, and after consultation with army headquarters. It was always well forward in the communications zone, and yet conveniently situated for communications with the zone of the interior and with the army. It contained the headquarters of the zone authorities (52) and, therefore, represented the administrative nerve center of the entire zone.

The following establishments and installations were located at the zone main depot or in its vicinity, as a rule (53):

Headquarters of the Zone Ammunition Service (54).
(This service controlled the reserves stored on sidetracks, in railway ammunition trains and in single cars loaded with ordnance and demolition equipment; also an ammunition main depot (55), as well as an ordnance (arms for all branches) depot (56).)

- a Zone Telephone Supply Depot (57);
- a Zone Motor Transport Park (58);
- a Zone Subsistence Depot (59);
- a Slaughtering Section (61) and a Zone Bakery (60);
- a Cattle Depot (62);
- a Zone Station Hospital (63), a Zone Medical Supply Depot (64) and other Medical Establishments (65);
- a Zone Remount Depot (66).

(49) Etappen-Lazarette (57) Etappen-Fernsprechdepot
(50) Sanitätseinrichtungen (58) Etappen-Kraftwagenpark
(51) Etappen-Pferdedepots (59) Etappen-Magazin
(52) Etappen-Behördenpark (60) Etappen-Backerei
(53) The list covers the principal services, establishments and installations, but is not quite complete.
(54) Etappen-Munitions-Verwaltung (61) Etappen-Schlächterei
(55) Hauptmunitions-Depots (62) Etappen-Viehdepot
(56) Gerätedepots (63) Etappen-Lazarett
(57) Etappen-Fernsprechdepot (64) Etappen-Sanitätsdepot
(58) Etappen-Kraftwagenpark (65) Sanitäts-Einrichtungen
(59) Etappen-Magazin (66) Etappen-Pferdedepot
(60) Etappen-Backerei (67)
Owing to the rapid advance of the First Army during August and the first part of September, 1914, the location of the communications zone main depot had to be frequently shifted. It was obviously out of the question that all of the agencies and service installations, enumerated above, could in every case be established and made to function. We therefore restricted ourselves to the installations and establishments that were absolutely necessary and held others in readiness. Strictly speaking, the communications zone main depot of the First Army was not thoroughly organized nor completely equipped until it was established in Chauny, i.e. after September 5th.

In selecting a location for the main depot, the following features were desirable:

- good railway communication and a good road-net (67);
- adequate railway station and yard facilities (68) (including platforms and ramps for loading and unloading (69), sidetracks (70), freight houses (71), “turn-arounds” on hard-finished roads (72), and vacant ground for open-air storage (73));
- adequate shelter for quarters (74), stables (75), hospitals, subsistence depots (76), and supply depots (77) (buildings of manufacturing plants (78) preferred), etc.

(1) *Communications Zone Ammunition Service* (82).

The communications zone ammunition service (82) which was under the “chief of munitions, communications zone” (79), controlled all the stocks of ammunition (80) and of ordnance reserves (81), within the communications
zone. Its functions were to take charge of the railway ammunition trains as they arrived, and to establish, administer, and provide the personnel for, ammunitions depots, ordnance depots, and ammunition refilling points. It also regulated the issues to the ammunition companies and their loading and assignment.

The railway ammunition trains, which the Chief of the Field Munitions Service (83) at General Headquarters allocated to the various organizations, were sent forward, as close to the front line as was feasible. If early use of this ammunition was not anticipated, the trains were, as a rule, placed on sidetracks in railway yards of the communications zone by the military railway authorities, thus keeping the ammunition stocks mobile. Only when sidetracks and yard facilities were not available, were they transferred directly, whenever practicable, to the corps ammunition columns, or to the communications zone companies. When neither of these expedients could be resorted to, the zone ammunition service established an ammunition depot on the ground as part of the main depot of the communications zone, and if necessary ammunition depots at other stations.

Standard carload shipments of ordnance and of demolition equipment were also “spotted” on sidetracks; if this was not possible, the contents of these cars were unloaded and stored in ordnance depots, within the communications zone.

Whenever it could be foreseen, with some degree of accuracy, when and where an increased expenditure of ammunition would occur, communications zone headquarters would establish a number of ammunition refilling points (84) in rear of, and as close to, the army as possible, and keep them filled. In case of emergency, however, ammunition was forwarded directly to the combatant troops by means of the communications zone ammunition companies, but mainly by motor transport companies (85) made available for that purpose. During the rapid advance, this
method of replacement by motor transport companies was, on many occasions, resorted to by the First Army.

Normally the zone ammunition companies hauled the ammunition over the roads (86) of the communications zone to the corps ammunition columns. However, they were not always equal to the task, partly because of the great speed at which the First Army advanced, partly because they had started so far behind the army, at the beginning of the military operations. Hence motor transport companies of the communications zone had to attend to the greater part of the work (87). As a temporary expedient, it even became necessary, under certain circumstances, to employ heavy supply companies in the transportation of ammunition.

(2) Zone Bakery—Slaughter Section—Cattle Depot.

The communications zone bakery companies supplied with bread, not only the troops assigned to the zone (88), but also the troops passing through it (89); in addition they supplemented the issues of the corps bakery companies.

Attached to the zone bakery was a slaughtering section (90). The personnel of this section took care of the beef cattle that were driven along in rear of the army; and besides did the slaughtering for the communications zone troops, and occasionally also for the troops of the army.

(3) Heavy Supply Companies of the Communications Zone (91).

The heavy supply companies (91) were employed in hauling (92) the subsistence supplies (93) of the army. In emergencies, they were also used for other zone purposes (94), such as the hauling of ammunition (95) and the transportation of wounded (96).

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(86) Landtransport
(88) Etappen-Truppen
(89) Etappen-Transporte
(90) Schlachterei-Abteilung
(91) Etappen-Fuhrparkkolonnen-
(92) Landtransport
(93) Verpflegungsmittel
(94) Etappen-Verkehr
(95) Munitionsnachführung
(96) Verwundeten-Transport
(4) Zone Depot Subsistence Companies.

Zone depot subsistence companies (97) were equipped with vehicles which had been conscripted in the concentration area (98). They were used to keep subsistence depots filled, and also to move them when necessary. They were manned by personnel taken from those transportation companies (99) assigned to the communications zone headquarters (100) during the mobilization (101). These companies were also called upon to furnish personnel, whenever any other depot companies were to be formed.

(5) Zone Remount Depot.

The duty of the communications zone remount depots was to take over all sick and surplus horses turned in by the army, and to collect serviceable horses in the communications zone sections (102) in which they were located. Remount depots were established along the roads of the communications zone, in accordance with requirements.

(6) Zone Telephone Supply Depot.

A zone telephone supply depot was established at the main depot by special personnel of the telegraph troops (103). It contained the necessary replacements of station equipment (104) and line materials (105) for the telephone units (106) of the combatant troops. These materials were moved to the front in motor trucks assigned to the depot.

(7) Zone Motor Transport Companies—Motor Transport Park.

The communications zone motor transport companies (107) were employed in forwarding to the army supplies of all kinds, principally ammunition and subsistence. They were particularly well suited to help out rapidly in cases of sudden emergencies. Since they could cover long distances in a short time, they were dispatched to points situated well

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(97) Magazinfuhrparkkolonnen, i.e., "heavy supply companies"
(98) Versammlungsgebiet
(99) Etappen-Trainkompagnien
(100) Etappen-Inspektion
(101) Mobilmachung
(102) Bezirke
(103) Telegraphen-Truppen
(104) Stationsmaterial
(105) Leitungsmaterial
(106) Fernsprechformationen
(107) See p. 155.
forward in the combat zone. Details regarding the organization and employment of the communications zone motor transport will be found on pages 189 to 198.

The motor transport park of the communications zone was usually located at the communications zone main depot; at Chauny, for example, it employed the premises of local factories. It maintained as a reserve, motor transport personnel, spare motor vehicles of all kinds, motor fuels in tank storage (108), and tools and spare parts. Furthermore, it did repair work and stored such motor vehicles and stocks of motor fuels as were seized in the combat zone and in the communications zone. To this park of the First Army was attached a voluntary organization, the so-called "G.H.Q. Automobile Park" (109).

(8) Zone Aviation Park.

The function of the communications zone aviation park was to hold in readiness, personnel, airplanes, and all manner of spare parts; to make necessary repairs; and to collect all of our own or enemy planes that had come down or been abandoned, either in the combat zone or in the communications zone. Such a park would be established at some suitable place within the communications zone, preferably on the premises of factories or power plants, that could be utilized for the purpose.

(9) Evacuation Hospitals—Station Hospitals—Medical Depots—Medical Evacuation Service.

Evacuation hospitals (110) were to clear the field hospitals (111) by taking over all non-transportable cases.

Communications zone station hospitals (112) were established at the military stations (section headquarters) of the communications zone, as needed. These hospitals received cases arising among the zone troops and administrative personnel (113); also the sick of the troops (114) passing through the communications zone; and cases that could not be taken care of any longer in the field hospitals.

(108) Tanklager  
(110) Kriegslazarette  
(111) Feldlazarette  
(112) Etappenlazarette  
(113) Behörden  
(114) Transporte
The medical evacuation service (115) (a medical formation of the communications zone), in conjunction with the military railway authorities, was responsible for the evacuation of the sick and wounded by the use of railway hospital trains (116) and other means of transport (117). The escorting and attending personnel (118) were, in the main, taken from the volunteer nurse corps (119).

The communications zone medical depot furnished the supplies necessary for replacing the medical and veterinary equipment of the combatant troops and of the communications zone. It kept up its own stocks from the resources of the enemy country, as well as from the base supply depot.

(10) Army Post Offices in the Communications Zone.

The army post offices in the communications zone handled the mails and maintained reliable postal connections between the army and the zone of the interior. These post offices were established by the army postmaster (120).

The chart, Plate XVII, shows graphically the organization and chain of command of the communications zone.

An asterisk opposite certain formations and establishments appearing in the chart denotes that each “active” army corps (not “reserve” corps) which, on mobilization, was scheduled to form part of an army, was required to organize and maintain, in time of peace, the number of those organizations indicated on the chart for eventual transfer to the communications zone, in the concentration area. Each army corps, for example, furnished six communications zone section headquarters.

Section b.—Channels of Supply (121) from the Interior to the Combat Zone (122).

The following charts with explanatory notes, appearing in Plates XVIII, XIX, XX, and XXI, are intended to show graphically the channels which each article of supply fol-

(115) Krankentransportabteilung (119) Freiwillige Krankenpflege
(116) Lazarett-Krankenzug (120) Armee-Postdirektor
(117) Transportmittel (121) Lauf de Heeresversorgung
(118) Begleitpersonal (122) Operationsgebiet
lows from its place of origin (123) (e.g. factory) to the place of issue (distributing point) at the front (124).
(1) Chart (125) I, Plate XVIII, shows the channels in the case of ammunition, ordnance, and demolition equipment (126).

Notes:

(a) Troop units submitted their requirements (127) to corps headquarters. The latter requisitioned directly on the communications zone and simultaneously informed army headquarters of the fact.

(b) In filling requisitions, the communications zone commander utilized first those supplies which, as a rule, were held ready in sidetracked railway trains, between the communications zone main depot and the army base. Only under exceptional circumstances were ammunition depots and ordnance depots (128) established at the base; for example, when railway yard facilities were inadequate.

From these sidetracked trains, which were advanced as close to the front as possible, the communications zone ammunition companies were first filled. Later on, the corps ammunition columns, as well as the ammunition depots and ordnance depots were filled. At times, loaded railway ammunition trains followed in the immediate rear of the army.

(c) The contents of the afore-mentioned depots eventually reached the combatant troops by means of the corps ammunition columns, which would receive their loads at the ammunition refilling points (129) (or so-called advance ammunition depots (130)).

In case of emergency, for example, when a decisive battle was impending, communications zone ammunition companies (131), communications zone motor transport companies (132), as well as other communications zone transportation companies, and the corps ammunition companies (133) would all be employed to guarantee the am-
Technical Establishments (142); i.e., government owned factories; privately owned factories (143); artillery depots; in zone of the interior.

Chart I

Channels Followed in Supplying Ammunition (134), Ordnance and Demolition Equipment

- Ammunition refilling Points (137)
- By ammunition companies, Com Z motor transport companies, and other transport companies

- Com Z Commander
  (Com Z Ammunition Service (135))
- By sidetracked railway ammunition trains (138) of the Com Z; ammunition depots. Ordnance Depot—(139) issues ordnance & ordnance stores to troop units.

- Chief of Field Munitions Service
  (136) (G.H.Q.)
- By railway ammunition trains and standard carload shipments of ordnance of demolition equipment

- Railway ammunition trains. Standard shipments of ordnance & demolition equipment (140); all sidetracked in Z of I, or concentration area (141)—Ammunition depot of the army base

- By railway ammunition trains and standard carload shipments of ordnance and of demolition equipment

- War Ministry
- Technical Establishments (142); i.e., government owned factories; privately owned factories (143); artillery depots; in zone of the interior

134 Munitionsnachschub
135 Ettappen-Munitionsverwaltung
136 Chef des Feldmünitionswesens
137 Munitions-Ausgabestellen
138 Abgestellte Munitionszüge

139 Geräte Depot
140 Gerät und Sprengmunitionsnachschübe (included also arms)
141 Aufmarschgebiet
142 Technische Institute
143 Privatfabriken

Plate XVIII
munition supply. Under these circumstances, maximum results were obtained by sending the motor transport companies as far forward into the combat zone as conditions would permit.

(d) The Chief of the Field Munitions Service (at GHQ) was responsible for the replenishment of the communications zone stocks (144), in accordance with requisitions submitted by the communications zone commander. However, as the war progressed, requisitions were referred directly from the communications zone commander to the “artillery field officers on duty at army headquarters (145)” who was an agent for the Chief of the Field Munitions Service. This procedure materially simplified and expedited the supply. This artillery field officer then notified his chief of the amounts to be supplied, whereupon the required number of railway ammunition trains were transferred to the communications zone. The commander of the communications zone submitted periodically to the Chief of the Field Munitions Service, reports of ammunition on hand. The latter was thus enabled to equalize the requirements of the various armies and to supply to them the quantities of ammunition demanded by the military situation.

(e) For this purpose, the Chief of the Field Munitions Service (at GHQ) controlled the railway ammunition trains and the standard carload shipments of ordnance and of demolition equipment, which were held in readiness, according to plan, in the zone of the interior. These were made up, according to directions of the War Ministry, at the various artillery depots in the zone of the interior, after the required supplies had been procured from the government-owned and privately owned factories.

General remarks: I wish to mention briefly the manufacture, procurement, and preparation for shipment of the ammunition, arms, and other ordnance stores in the zone of the interior (146).

(144) die Auffüllung der Etap- (146) Bereitstellung von Mu- penbestände nition, Waffen und Gerät in der Hei- (145) Stabsoffizier der Artil- materie lerie
Plans prepared in time of peace (147) fixed the days on which railway ammunition trains were to be ready to proceed to the front from certain artillery depots of the zone of the interior forming part of the permanent military establishment. The railway ammunition trains were classified, in accordance with tables of organization, as infantry trains (148), field artillery trains (149), and heavy artillery trains (150); and carried, for example, ammunition for light artillery, light howitzers, mortars, and so on. Thus, the Chief of the Field Munitions Service could call for these railway trains, when needed, and send them to railway stations near the zone of the advance, where they were sidetracked and placed under the control of the various army commanders. Ammunition was manufactured in government-owned plants (151), as well as in privately owned factories.

About fifty artillery depots in the zone of the interior were engaged in preparing infantry and artillery ammunition for shipment in standard railway ammunition trains (152). Each train held a definite number of artillery projectiles or rounds of small arms ammunition (153); to illustrate:

- An infantry ammunition train: 2,738,400 rounds
- A field gun ammunition train (154): 26,880 projectiles
- A light field howitzer ammunition train (155): 12,000 rounds
- One 10-cm. gun ammunition train: 10,000 rounds
- A heavy field howitzer ammunition train: 6,000 rounds
- A 21-cm. mortar ammunition train (156): 2,000 rounds

Small arms (157) and machine guns were manufactured in the government-owned small arms plants (158) at Spandau, Erfurt, Danzig, and Amberg; also in the “Deutschen-und Munitions-Fabriken” (German Arms and Arm-
CHART II
CHANNELS OF SUPPLY FOR AIRPLANES AND AIRPLANE SPARE PARTS

Corps Commander (Aviation Squadron Commander)

Aviation Flight (173a)
Aviation Flight
Aviation Flight

Com Z Commander

Shipped by Motor Trucks or Air Route

Communications Zone Aviation Park (173b)

Department of Aviation in the Zone of the Interior (173c)

Reserve Aviation Depots of the Zone of the Interior 173d)

Airplane Manufacturing Plants and Airplane Motor Factories (173e)

173a Flieger-Abteilung
173b Etappen-Flugzeugpark
173c Immobile Inspektion der Fliegertruppen in der Heimat

173d Flieger-Ersatzabteilungen der Heimat
173e Flugzeug-und Motorenfabriken

PLATE XIX.
munition Manufacturing Plants), a privately-owned concern, and in many other arms factories (such as Suhl and Oberndorf). Not until a serious shortage of infantry weapons, brought about by the organization of numerous new tactical units (159), made itself felt, were other manufacturing plants (such as sewing machine factories (160) and typewriter factories (161)) called upon to assist in such production.

Field guns were manufactured (162) in the various government-owned factories, in the Krupp plants (163) and by the Rheinische Metallwaren-Fabrik (Rhenish Steel Works). Later on, production was taken up by a number of other factories, such as Bersig, Thyssen, etc., until finally several hundred factories manufactured field guns (164).

It was otherwise with regard to the manufacture of heavy guns (165); private industry was able to assist only to a limited extent; so it became necessary, in the main, to manufacture these guns in the government arsenals, in the Krupp establishments and in the plants of the Rheinische Metallwarenfabrik, all of which had to be enlarged considerably for the task in hand.

The finished small arms (166), machine guns, and artillery matériel (167), before being sent to the troops were collected in the various artillery depots. Here unified carload shipments were prepared: they were referred to as "standard carload shipments of ordnance and ordnance stores" (168).

(2) Chart II, Plate XIX, shows the channels of supply for airplanes and airplane spare parts.

Notes:

(a) Troop units submitted their requirements in personnel and matériel to the communications zone commander (specifically, to the commander of the communications zone...
aviation park). Requisitions were then filled and deliveries made to the aviation units by means of auto-trucks or by air route.

(b) Supplies in the communications zone were replenished by requisitions on the department of aviation (an immobile administrative organization) of the zone of the interior. The department called upon the reserve aviation depots or, whenever practicable, directly upon the various manufacturing concerns for the necessary deliveries.

(c) The replenishment of the stocks kept by the reserve aviation depots was effected upon order of the department of aviation from the airplane manufacturing plants and airplane motor factories.

(3) Chart III, Plate XX, shows the channels of supply for subsistence.

Notes:

(a) Troop units daily reported their subsistence requirements (169) to their respective divisions and drew the rations at the division distributing points (170). The latter were usually designated by corps headquarters, except on rare occasions subsistence companies were assigned to the divisions themselves.

(b) The corps (specifically, the corps commissary (171)) submitted requisitions directly to the communications zone commander (specifically, to the communications zone commissary (172)). Corps headquarters, moreover, was required to keep the army commissary (173) informed, by means of daily reports, in regard to the number and condition of rations on hand. The subsistence supplies called for by corps headquarters were drawn by the corps transportation companies (174) at the communications zone refilling points (175) or communications zone subsistence depots (176).

(c) The communications zone commander controlled the subsistence supplies in the communications zone and the

(169) Verpflegungsbedarf
(170) Ausgabestelle der Divisionen
(171) Korps-Intendant
(172) Etappen-Intendant
(173) Armee-Intendant
(174) Korpskolonnen
(175) Etappen-Ausgabestellen
(176) Etappen-Magazine
CHART III

CHANNELS OF SUPPLY FOR SUBSISTENCE

Army Commander
(Army Commissary)
(176)

Com Z Commander
(Com Z Commissary)
(177)

Com Z Subsistence
Depots—
(181) unless subsis-
tence supplies are
issued directly from
railway subsistence
trains, Com Z Repli-
cing Points (180) us-
ing as transportation:
Cos. (185), Hvy.
Depot Subs. Cos.
(186), and M.T. Cos.
(187), Com Z BAKERY.
Com. Z CATTLE DEP-
ROT.

By railway subsistence
trains (182)

Subsistence Depot
of the Army Base,
with Cattle Depot
attached.
Railway Subsistence
trains on sidetracks.

By subsistence com-
panies (178), and
heavy supply com-
panies (179) of the
corps trains; in an
emergency by Com Z
motor transport com-
panies

Distributing Points
Advance Subsistence
Depot, i.e., Refilling
Point
Field Bakery Com-
palies

Corps Commander
(Corps Commissary)
(176)

War Minister

Reserve Subsistence
Depots (192) and Re-
serve Cattle Depots
(193), located in the
Zone of the Interior.

176 Korps-Intendant
177 Etappen-Intendant
178 Arme-Intendant
179 Korpskolonnen, i.e., Proviant-und Fuhrparkkolonnen
180 Etappen-Ausgabestellen
181 Etappen-Magazine
182 Verpflegungszüge
185 Etappen-Fuhrparkkolonnen
186 Magazin-Fuhrparkkolonnen
187 Etappen-Kraftwagenkolonnen
192 Ersatzmagazine
193 Ersatzviehdepots

PLATE XX.
various railway trains carrying rations (177), flour (178), and oats (179), which had been assigned to him and shunted to sidetracks. These supplies were transported to the front by the heavy communications zone supply companies (180), the heavy depot subsistence companies of the communications zone (181), and the communications zone motor transport companies (182), unless the subsistence stores could be transported in railway trains (183) to the place where they were required. In an emergency, communications zone motor trucks, filled with rations, were sent as far forward into the combat zone (184) as circumstances would permit.

(d) For replenishment, the army commissary controlled the subsistence depot located at the army base (185) (in the case of the First Army, Dusseldorf). This depot was filled by local purchases (186), as well as from stocks of the various reserve subsistence depots (187) and reserve cattle depots (188), which had been assigned to it. Reserve depots were kept filled by special directions of the War Ministry (189) after consultation with the Commissary General (190) of the armed forces in the field (191).

The army commissary was required to render daily reports to the Commissary General of the armed forces in the field, regarding the general state of subsistence.

(e) The Commissary General of the armed forces in the field was in supreme charge of the entire subsistence supply service and regulated and equalized, when necessary, the allotments of subsistence to the various armies. He also controlled a mobile subsistence reserve (192) and other subsistence stocks stored by the War Ministry at special

(177) Verpflegungszuge  
(178) Mehltüge  
(179) Haferzüge  
(180) Etappenfuhrpark-Kolonnen  
(181) Magazinfuhrpark-Kolonnen  
(182) Etappen-Kraftwagenkolonnen  
(183) Eisenbahnzüge  
(184) Operationsgebiet  
(185) Sammelstation  
(186) durch unmittelbare Kieliefung  
(187) Ersatzmagazine  
(188) Ersatzvichdepots  
(189) Kriegsministerium  
(190) Generalintendant  
(191) Feldheer  
(192) eine bewegliche Verpflegungsreserve
bases (193), and which were not subject to direct calls from army commanders.

(4) Chart IV, Plate XXI, shows the evacuation of the sick and wounded (194).

Notes:

(a) The division surgeon (195) was responsible for the evacuation of the wounded from the aid stations (196) to the corps field hospitals (197).

(b) The corps surgeon (198) caused field hospitals to be set up, except when assigned to the divisions, and was responsible for their timely clearing (199). For the latter purpose, he called upon the communications zone surgeon (200), who employed therefor the medical evacuation service (201). Corps field hospitals, when transferred to the communications zone, became evacuation hospitals (202).

(c) The communications zone surgeon would assign to the field hospitals, thus transferred, the necessary personnel, taken from the evacuation hospital battalion (203), and the medical directors. He also directed the evacuation of the transportable cases by means of the medical evacuation service (201).

Evacuation was effected by roads, by railway lines, and available water routes. On the roads, motor ambulances (204), transportation companies, and other vehicles specially prepared for ambulance service were used; on the railway lines, hospital railway trains (classified as trains for the sick, and trains for the wounded), furnished with the necessary attending personnel taken from the volunteer nurse corps (205), were used; on the water routes, evacuation was effected by means of hospital ships or barges (206). In addition to the evacuation hospitals, the com-
Communications zone surgeon controlled a number of communications zone station hospitals (207), which admitted cases arising among the communications zone troops; isolation hospitals (208); convalescent hospitals (209), which also admitted light cases; and at designated railway stations, collecting points for evacuation (210).
(d) The medical evacuation service was responsible for the systematic employment of the transportation assigned to the communications zone, such as hospital railway trains, and occasionally also hospital ships or barges. It was, therefore, the connecting link between the medical service near the front and the service in the rear, including the zone of the interior.

(e) The various communications zone section headquarters were charged with making at their stations all necessary preparations for sheltering the sick.

(f) The Chief of the Medical Service (212) at G.H.Q. decided whither the stream of wounded from the various army corps and of the wounded prisoners of war (213) was to be directed; for this purpose he disposed of railway hospital trains, and hospital ships or barges (214), as needed.

The War Ministry kept the Chief of the Medical Service at G.H.Q. constantly informed as to the bed capacity (215) of reserve hospitals (216), red cross establishments, and private sanatoriums (217) in the zone of the interior.

Medical supplies (218), clothing, etc., railway materials (219), benzol, and oil were forwarded to the troops in a manner similar to that described for ammunition, arms, and subsistence. My remarks regarding the general organization of the various communications zone establishments have been sufficiently detailed to render unnecessary anything further with reference to the organization of these supply services.

(5) Personnel Replacements (220).

Each organization maintained in the zone of the interior a replacement training unit (221) which, as a rule, occupied the peace-time garrison (222) of its organization; here it received recruits and gave them the necessary training. To illustrate, each regiment of infantry had in the zone of
the interior a replacement battalion, each regiment of cavalry a replacement troop (223), and each regiment of field artillery a replacement battalion (224).

Whenever vacancies, exceeding 5% of the authorized strength, occurred in any field organization (225), that troop unit would call directly upon its replacement training unit to furnish the required replacements (226). In case a replacement training unit was unable to supply the requirements, it devolved upon the “acting corps headquarters (227)” (organized in each corps area of the zone of the interior), controlling such replacement unit, to order other replacement units in the corps area to transfer the required number of men.

Personnel replacements (228) from a corps area were assembled at the corps base, the seat of the acting corps headquarters. Here the various replacement groups were organized for the journey into a large-sized detachment, constituting one single command (229). Personnel replacements were sent as far forward as railway facilities would permit, usually to the communications zone main depot, from where they were marched to join their respective organizations. Communications zone station commanders were held responsible that replacement detachments (230), while marching through their sections, were furnished shelter, subsistence, etc. (See also pp. 199-202).

(6) *Horse Replacements* (231).

In case requisitioned and captured animals (233) failed to satisfy their requirements, mounted organizations (232) called upon their replacement training units, at their peace-time garrisons in the zone of the interior, for horse replacements. These replacements were forwarded in a manner similar to the method pursued in the case of personnel
replacements (see above). In an emergency and only exceptionally, was the commander authorized to call for animal replacements for mounted organizations, from the corps remount depots (234) at the front; such animals were primarily for the use of headquarters staff organizations (235), foot troops, and technical troops. Corps remount depots were replenished from purchased, requisitioned, and captured (236) animals. Only when this method of replenishment proved inadequate, did corps commanders requisition on the zone of the interior for horse replacements. (237)

Section c.—Conclusion

It must be the ultimate object of all the activities of the communications zone to function in such a manner that the operations of the field forces will not be suspended or delayed by considerations of supply (238). The communications zone commander, therefore, should not limit himself merely to satisfying the current demands of the field forces, but must be able to foresee future requirements. Moreover, he must consider all possible contingencies and make such far-reaching preparations as to enable him promptly to carry out any task that may be assigned.

For this purpose, it is essential that the communications zone commander should maintain the closest liaison (239) with army headquarters and the several corps headquarters. He must keep himself constantly informed with regard to the military situation (240) of the army and the conditions existing in the theatre of operations in general.

The communications zone commander of the First Army was informed, at the beginning of the mobilization, that the main depot was to be at Dusseldorf, and where the assembly points (241) in the concentration area of the various organizations to be assigned to the communications zone were located. He also received the first instructions.
covering the beginning of the activities of these organizations; all this in conformity with the plans prepared by the Great General Staff in time of peace.

The first activities in the concentration area were limited to preparatory work, such as reconnaissance, organization of headquarters and of signal communications, standardization of loads, and assignment of all transportation companies (motor transport companies included) to towns and villages, in accordance with their future destination. The last measure enabled the communications zone commander to insure a regular and automatic functioning of the supply service, as soon as operations would begin.

In order to reduce to a minimum the amount of supplies to be drawn from the zone of the interior, the communications zone commander was required to exploit the resources of the communications zone to the utmost, particularly at the time when this zone was extended into enemy territory. All manner of supplies had to be collected and stored, such as subsistence stores, various other stores and implements, motor vehicles, railway materials and road repair materials for the construction, repair and maintenance of railway lines and highways, as well as for the reconstruction of water routes; fuel and illuminating supplies—even when over and above the current needs of the army. Available manufacturing plants, slaughtering houses, flour mills, distilleries, breweries,threshing machines, etc., were taken over and operated according to a general plan. However, systematic operation of all utilities was generally not feasible until the middle of September, when the operations of the First Army had come to a standstill behind the Aisne River.

In order to assure the bread supply, it was necessary to regulate first of all, the flour supply service;
only in this manner could regular deliveries be made to the field bakeries.

It had been assumed that, for a protracted advance of the armies, the service of supply could be made to function efficiently, only if the operation of the railway lines (255), in rear of the armies, proved successful and could keep pace with the progress of the troops. Therefore, as soon as enemy territory was entered, a thorough-going reconnaissance, looking toward early acquisition of the railways, was undertaken. In this the commander of the communications zone was assisted by the “army railway agent” (Bba) (256) (a captain of the general staff, who was attached to the army by the director of military railways (257). As may be gathered from the remarks of this officer which I have quoted elsewhere (see pp. 212-221) (258), the railway demolitions, executed by the Belgians, did not prove very effective or lasting. By prompt and appropriate utilization of the railway engineer companies (259), placed at the disposal of the army railway agent, we succeeded in keeping the railhead at all times comparatively close to the army. For example, after the First Army had forced the crossing of the Mons Canal on August 24, it was possible to extend the operation of the railway (260) to Louvain; this placed the railhead at a distance from the army equivalent to approximately three marches for animal transport. On August 30, when the army occupied the general line: Amiens—Roye, and was preparing to turn to the south, the operation of the railway line had been extended to Cambrai, requiring thus only two marches for the transportation companies between the railhead (261) and the army.

Communications zone transportation companies (262), both animal-drawn and motorized, joined the railhead or the advance depots (264) with the refilling points of the:
corps subsistence companies (263) (See Chart III). The most perfect operation was attained, when empty corps transportation companies could refill directly from refilling points reached by railway subsistence trains. This was possible for the First Army during the first few days of the advance, when the corps trains refilled at the railway stations of Bleyberg, Moresnet, Henri-Chapelle, Visi, Argen-teau, and Wandre, where, at times, it could be arranged to transfer the rations from the subsistence railway trains directly to the ration wagons (265) of the troops. During the later stages, however, this method, on account of the rapid advance of the army, could no longer be used, except in the cases of the II and IX Reserve Corps which were in­vesting Antwerp. Under these conditions, the corps trans­portation companies (as pointed out before) loaded at the refilling points established well forward by the animal­drawn and motorized transportation companies of the com­munications zone. While open warfare was the rule, it proved advantageous to forward to these refilling points only such number of rations as the corps transportation companies were able to load, either on the day of their arrival or on the day following; the refilling points would then be discontinued.

The bringing up, in good season, of ample supplies of ammunition when a decisive battle was impending, con­stituted the most important mission of the communications zone commander. For this purpose he controlled the mobile stocks in the vehicles of the communications zone companies. These companies were generally kept together for dispatch to places where ammunition was most urgently needed.

As soon as the approximate location of the refilling points for the corps ammunition companies could be de­termined, the communications zone commander employed all the transportation under his control for sending to these points (situated in the immediate rear of the army) ample supplies of ammunition. Under such circumstances am­munition was always given priority over subsistence.
Railway ammunition trains, scheduled to be sidetracked (266) (See Chart I, Plate XVIII), were taken as far forward as conditions would permit. In addition to the communications zone ammunition companies, all available motor transport companies and, in an emergency, also other zone transportation companies were used in the ammunition service. These companies by moving constantly back and forth on the road (267), carried the ammunition from the railway trains to the refilling points.

During periods of combat, the ammunition service continued to function without interruption. New railway ammunition trains were requisitioned for, and dispatched as far forward as practicable. As mentioned before, the corps ammunition companies habitually refilled at the ammunition refilling points (268), established by the communications zone. Occasionally it was possible for the corps to draw ammunition directly from the railway ammunition trains as, for example, under the conditions obtaining during a period of stabilization; however, this method was impracticable in the First Army during the months of August and September, 1914. On the other hand, on several occasions communications zone motor transport companies of the First Army actually delivered ammunition to the troops on the battle-field (269).

Directors of evacuation hospitals, and evacuation hospital battalions (See Chart IV, Plate XXI) were sent forward to the combat zone, at the proper time, to take over the wounded in the field hospitals. In the meanwhile, civilian hospitals (270) and military hospitals of the communications zone were prepared for the reception of large numbers of wounded, while railway hospital trains were held in readiness for further evacuation to the zone of the interior.

Arrangements for the reception and quartering of prisoners of war were also made.
The pause in the conduct of operations which occurred during the middle of September, following the withdrawal of the First Army behind the Aisne River, appreciably lightened the tasks of the transportation service of the communications zone (271), and relieved the general strain under which all elements of the communications zone had been working. This suspension of operations was utilized to exploit the resources of the enemy territory more thoroughly and systematically. Provisions were collected into subsistence depots, routes of communication (272) were repaired and extended, the working capacity (273) of transportation companies was increased, and dissemination of orders (274), as well as cooperation and teamwork of the several elements of the communications zone were so organized that a resumption of operations found the zone authorities fully prepared for any emergency.

The duty of guarding the gradually extending line of communications (275) developed upon the communications zone troops; three mixed landwehr brigades, containing eighteen battalions, three batteries and two troops of cavalry. Since the line of communication had to be constantly extended to keep pace with the advance of the army, it was necessary, from the beginning, to assign communications zone troops to this guard duty rather sparingly. Above all, every effort had to be directed toward avoiding the detail of combat organizations (276) (line troops) for duty in the communications zone. Due to the ever-increasing length of the line of communication, the numerical strength of the communications zone troops eventually proved inadequate. The shortage reached its climax when, during the Battle of the Marne, some of the communications zone troops were actually used in combat (See p. 183).

Plate XXII is a map illustrating, by a concrete example, the organization of the communications zone of the First Army, as it existed on September 8, 1914, one of the days of the Battle of the Marne.
The communications zone commander of the First Army carried out his mission in general conformity with the above, without however tying himself down to any fixed scheme (277), especially during the period of the general advance in August and September, 1914.

Field Marshal Count von Moltke (the elder) once defined the word "strategy" as a "system of expedients." In my opinion, the same definition applies even more aptly to the functioning of the supply service in rear of an army; for the execution of any strategic plan depends entirely on the proper organization and reliable functioning of the service of supply. Although during a protracted period of stabilization the supply service may be operated according to a fixed scheme, which is perfectly proper and practicable under those circumstances, it may be safely predicted that such a scheme is bound to fail in the changing phases of open warfare, with which we had to contend in August and September, 1914. The operations of open warfare require daily decisions by the army commander to meet the actual situation just as the supply and evacuation system in rear of the army demands great elasticity (278), in order that the responsible officer may modify his plans at any moment and adapt them to the changing situation. He must not commit himself to a fixed scheme. For this reason, it was not always possible to live up to the regulations so carefully prepared in time of peace for the government of the supply service, nor to those general rules which, in connection with the subject of supply, have been referred to by General von Kuhl in his treatise.

Major General von Müller, retired, who, during the period under consideration, was Chief of Staff of the communications zone of the First Army, has the following to say in regard to this matter:

"The hurry and stress (279) of the first few months of the war were so great that I was unable to find time to issue written administrative orders (280). The whole doctrine of supply had been somewhat upset by this rapid advance and the service of supply
could not, therefore, adhere closely to previously accepted principles. For this reason it did no special harm when we were issued at Stettin, during the period of organization of the communications zone, all the various regulations dealing with the service of supply etc., but without the changes and corrections, to bring them up to date. These regulations were carried along, nailed up in a packing box; but, as far as I know, the box was never opened until the army withdrew behind the Aisne."

During the rapid advance I was obliged to change my orders not only daily, but often three times on one day, with a view to adapting the missions of the various zone transportation companies to the changed situation. The members of the communications zone staff; i.e., the general staff, the chief of munitions of the communications zone (281), the commander of the communications zone ammunition service (282), the commanders of the communications zone ammunition battalion and trains, the commissary, the communications zone surgeon, etc., were all assembled at my headquarters to receive new instructions, in the morning, at noon, and in the evening; occasionally only in the morning and evening. Based upon information received from the front and upon the oral reports of the officers named above, regarding the missions, progress, and whereabouts of the various transportation companies, new orders were at once sent out, either by telegraph, telephone, or motorcycle (283).

Under these changing conditions, the motor transport companies proved our salvation; without them our difficulties could not have been overcome. We therefore were anxious to increase the motor transportation by every means in our power. Thus we were able to obtain the so-called "volunteer automobile park" (284) which, after the fall of Liege (285), had become available. This formation, increased in size by requisitioned motor trucks and passenger cars, had assumed unwieldy proportions, but nevertheless was able under a highly efficient officer (Captain Petter by name, see p. 191) to render, in rivalry with our organic (286) motor transport companies, most excellent service.

(281) Kommandeur des Etappen-Munitionswesens (284) sogenannten "freiwilligen Autopark"
(282) Kommandeur der Etappen-Munitionsverwaltung (285) vor Lüttich
(283) Kraftradfahrer (286) planmäßzig
Later on, when stabilization set in, the volunteer automobile park had served its purpose; it was therefore broken up and its vehicles assigned to the various services of the communications zone. I still remember that, in order to hurry ammunition to the army from Tongres, we made use of every available motor vehicle; even passenger cars (287) were employed. Although only a few artillery rounds could be carried in a single passenger vehicle, yet the great number of cars that could be sent, did the work. Moreover, these passenger cars were able to leave the hard metal road (288) and go right up to the artillery positions (289), from which they could return with wounded.

The horse-drawn transportation companies (290) were unable to keep up with the troops and they were far behind. I therefore considered them merely as a rolling reserve which, to the best of my knowledge, was not touched until we occupied the Aisne position; the various ammunition companies and trains had then caught up. Their hanging back so far may also be attributed to their somewhat tardy organization and delayed readiness for service (291). However, I feel convinced that these transportation companies would not have been any nearer to the troops even if their organization had been materially accelerated. The fact alone that the whole army, including its ammunition columns and trains, was first squeezed through the defile of Aix-la-Chapelle, and next engaged in a very rapid advance, was sufficient cause for the horse-drawn transportation companies to lose distance. According to my recollection, issues from these trains were made only in the beginning of the advance and then only to motor transport companies, and not directly to the troops.

It was of course, not always possible to forward from the communications zone the necessary daily quantities of subsistence to all the troops. That was out of the question, on account of the rapid advance of the army and the shortage of motor vehicles. Had it not been for the fact that

(287) Personenkraftwagen (290) die mit Pferde bes-
(288) Kunststraszen (291) Bereitstellung
(289) Artilleriestellungen
the troops were able to subsist on the resources of the country, such a fast rate of march would not have been possible. In a country devoid of supplies, such a rate of advance would have been possible only, if considerably more motor transport companies had been placed at the disposal of the communications zone commander, to bridge the long distances separating the army from the depots in rear, and to make deliveries directly to the foremost divisions. The assignment of much motor transport to the army corps is less correct, for it merely means dispersion (292) since the distances to be covered by the corps transportation are comparatively short.

So far as concerns the taking over and operating of railways in enemy territory I must state that our railway engineer troops accomplished all that could be expected of them under the conditions then prevailing.

Utilization of the water routes (293) was also taken into consideration but the execution of the plans required time, since obstructions, caused by demolished bridges and sunken barges, had first to be removed. The movement of barges was so slow, during this first stage, that railways were preferred, because their speed was superior, despite the obstacles encountered in their operation. The fact that the director of military railways, for a long while, attached but little weight to the utilization of the water routes—perhaps too light weight—must in my opinion be attributed to the conditions stated. Later on, the interest bestowed upon the water routes was much greater and quite justified.

In the communications zone there was a scarcity of troops and military police (294) to garrison and guard the zone and to maintain order therein. Landsturm troops and recruit depots (295) might very well have been employed for that purpose. The few landwehr brigades which had been assigned to the communications zone, were rated as combat troops and were soon swallowed up by the army, so that the communications zone was practically denuded of troops. The natural consequence was disorder, hostile raids

(292) Zersplitterung (294) Gendarmerie
(293) Wasserstraszen (295) Rekrutendepots
(296) against our flank, stray bodies of enemy troops in the communications zone, wild uncontrolled driving by chauffeurs coming from the direction of the zone of the interior, and marauding (297). Only gradually was it possible to create a change in this respect.
CHAPTER VI

GRAPHIC REPRESENTATION OF THE SUBSISTENCE SUPPLY
SERVICE (1) OF THE FIRST ARMY

I was asked to prepare a chart showing the service of supply of the First Army, similar to the chart appearing on pp. 94 and 95, Vol. 9, Part II, of Schwarte's publication, entitled "The Great War of 1914-18" (2), which describes the supply service of the German Sixth Army. However, I must state that the supply methods, described in Schwarte's book, were followed in 1917, that is, during a period of stabilization, and for that reason do not apply to the First Army during the phase of open warfare discussed by me.

The systematic organization (3) which prevailed in the Sixth Army, especially as concerned the communications zone subsistence depots (4) and refilling points in rear of that army, was quite out of the question for the First Army, owing to the daily and, at times, hourly changes in the situation. I shall nevertheless endeavor to show roughly, by means of a chart, Plate XXIII, how the service of supply of the First Army functioned on September 8. The map, Plate XXII, prepared in this connection, as well as Chart III, Plate XX, depicting the subsistence supply service, should also be consulted.

Later on, during the period of stabilized warfare (5), there was gradually introduced a minutely regulated system of forwarding subsistence; several distributing centers (6) were established, such as Brussels, whereby the subsistence supply service was greatly improved. Thereafter, that service was operated uniformly in all the armies on the western front and very similar to the methods portrayed in Schwarte's sketch dealing with the subsistence supply service of the Sixth Army on April 9, 1917, (see sketch, Plate XXIV).

(1) des Verpflegungs- nachschubes  (3) systematischer Aufbau
(2) Der Grosze Krieg 1914-18   (4) Etappenmagazine
(in 10 volumes) copyright by     (5) wahrend des Stellung-
Johann Ambrosius Barth in      skrieges
Leipzig                          (6) Verteilungsstellen
Note: * Additional refilling points may have been established; however, I have been unable to ascertain the facts.

PLATE XXIII
CHART SHOWING THE SUBSISTENCE SUPPLY SERVICE OF THE SIXTH ARMY ON APRIL 9, 1917
(From: Schwarte—"The Great War of 1914-18."

RESERVE SUBSISTENCE DEPOT
FRANKFURT-ON-THE-MAIN
Average daily deliveries: 90,000 field rations, 45,000 grain rations

RESERVE SUBSISTENCE DEPOT
HAMBURG I
Average daily deliveries: 160,000 field rations, 60,000 grain rations

RESERVE SUBSISTENCE DEPOT
HAMBURG V
Average daily deliveries: 160,000 field rations, 60,000 grain rations

SUBSISTENCE DEPOT
FRANKFURT-ON-THE-MAIN
Average daily deliveries: 90,000 field rations, 45,000 grain rations

SUBSISTENCE DEPOT
DUISBURG-RUBHORT
Average daily deliveries: 320,000 field rations, 120,000 grain rations

COM Z SUBSISTENCE DEPOT
TOURNAI
with B & S*

DISTRIBUTING CENTER
SOUTH-BRUSSELS

COM Z SUBSISTENCE DEPOT
ST. ARMAND
with B & S*

REFILLING POINTS

II BAV. ARMY CORPS
Lille, B & S
Lambery
Wambreches

III BAV. ARMY CORPS
Seclin, B & S
Fréthun
Hambourdin, B
Guise
Amiens
Marquillies

GROUP LOOS, IV ARMY CORPS
Pont-a-Marq. B
Amonauil
Carvin, B & S in
Froidmont

GROUP SCOCHEZ, VIII RESERVE CORPS
Lefolant
Flines, B
Aulnoy
Corbeille
Courrières, S in
Houzilles
Oncles

GROUP Vimy,
IX RESERVE CORPS
Douai, B & S
Quievy-le-Moitre
Drocourt
Brehodres

GROUP ARRAS,
IX RESERVE CORPS
Arbresles, B & S
Chocques
St-Helene, B
Dheilly
Quoigny
Perin
Lêcluse
Somain, B
Welles

*Note: B = Bakery,
S = Slaughtering Section.

PLATE XXIV
CHAPTER VII

COMMUNICATIONS ZONE MOTOR TRANSPORT (1)

The following account describing the employment of the communications zone motor transport of the First Army, during the latter’s advance through Belgium and northern France (2) in 1914, is based in the main upon a treatise written by Lieutenant Colonel Petter of the Reichswehr (3), who was then commander of the motor transport troops (4) of the First Army.

The horse-drawn ammunition companies and trains of the communications zone encountered great difficulties during the rapid advance of the First Army, when they attempted to overcome the excessive distance separating them from the corps transportation companies, at the beginning of the forward movement. This distance had resulted from the march dispositions of the First Army. At the start three columns consisting each of two army corps, their ammunition columns and trains included, were assigned to the three available routes of advance, each column occupying a road space of approximately 120 kilometers. Behind these was the communications zone transport. Up to the time marked by the withdrawal behind the Aisne, i.e., about September 12, the horse-drawn zone ammunition companies and trains were, therefore, so far in rear that they could not be fully utilized. It was on this account that the motor transport units which unfortunately were available only in limited numbers, became such an important factor in the army supply service.

The following motor transport formations had been assigned to the First Army during mobilization:

A commander of motor transport troops (5) with staff;

(1) Etappen-Kraftwagenformationen (4) Kraftfahrtruppen
(2) Nordfrankreichfahrtruppen (5) Kommandeur der Kraftfahrtruppen
(3) Present German military establishment under the Versailles Treaty

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A communications zone motor transport park (6), including an initial supply of benzol and oil for one week (7).

Twelve communications zone motor transport companies;

Eight mobile motor transport tank stations (tank trucks) (8).

Besides there was established, as part of the army base at Dusseldorf, a fixed motor transport depot, the so-called “Immobile Motor Transport Depot No. 1.”

In its estimate of the situation, G.H.Q. had assumed that the destruction of the Belgian railways would be complete and, therefore, create serious difficulties for the service of supply in rear of the right wing (9). For this reason, the First and Second Armies were assigned a considerably greater number of motor transport companies than were placed at the disposal of the other armies. It is apparent that, in 1914, the allotment (10) of motor transport to the German forces in the field was entirely inadequate for the requirements of modern warfare.

The events of the first few days of the advance convinced the commander of the First Army that his 12 zone motor transport companies were insufficient for his needs; especially since the future development of the railway situation (11) was still obscure. He, therefore, asked at once for more motor transport and received 6 additional motor transport companies.

However, even with eighteen companies army headquarters, as well as the communications zone, doubted their ability to meet the demands of the troops. Such being the case, the commander of the motor transport troops was directed to organize additional units.
Since heavy motor trucks (trucks of 3 to 5-ton capacity) were no longer available, that type could not be secured for the additional (12) units.

Hence the commander of the motor transport troops had to utilize trucks (13) of 1, 1½, and 2-ton capacity, so-called delivery trucks (14) (equipped with pneumatic tires) (15), from which he organized 12 new companies. It was necessary for him to obtain special authority for recruiting the required personnel (16), as well as for the procurement of the trucks. He succeeded in this, but it required considerable time to complete the organization.

But before these new formations could be used, and even before the organic (17) zone motor transport units had been completely organized, the urgent need arose for lightening the supply burdens of the troops investing Liege. In order not to disturb the mobilization of the organic motor transport troops of the First Army, the representative of G.H.Q. at the front authorized the organization of a G.H.Q. volunteer automobile park at Aix-la-Chapelle (18), which consisted of some hundred or more passenger cars. Although the carrying capacity (19) of this park was small, it rendered valuable service, owing to the fact that the passenger vehicles were swift, and the troops to be supplied few in number.

Later, when the motor transport companies of the First Army were employed and proved adequate, the automobile park was nevertheless permitted to continue in its special status and was assigned to the First Army. It was not utilized as part of the general forwarding system (20), but on special missions only, such as forwarding demolition equipment, supplying single batteries with ammunition, transporting wounded, etc.

The commander of the motor transport troops was the technical adviser to the army commander and to the com-
munications zone commander and exercised command over the motor transport troops. This dual position created misunderstandings right from the start; and not until later during the war, was it possible, by means of a thorough-going reorganization (21), to eliminate them.

During the period under discussion, this dual capacity of the commander of the motor transport troops not only caused a lot of friction, but led to a squandering of personnel and matériel (22), losses which were keenly felt later on, when we realized that the war would be of long duration and that all resources had to be managed with frugality.

The communications zone motor transport companies were employed, during operations, in accordance with the requirements of the various corps and the daily information which the chief of staff of the communications zone received from the army railway agent (23). This information contained the actual location of the railhead and the whereabouts of the railway trains en route to the front. Based on this information the chief of staff then designated the location of the refilling points, the time of loading, the march objectives for the motor transport companies, and the organizations to which the supplies were to be delivered.

This supply service by motor transport extended to all articles of subsistence, as well as to grain and forage, but above all to ammunition, arms, and other ordnance stores (24). The various corps usually obtained their supplies by direct transfer (25) from the trucks of the zone motor transport companies to the wagons of the corps transportation companies. When returning to the communications zone, the motor transport companies carried back the bulk of all transportable wounded (26), empty ammunition baskets (27), and other ammunition receptacles (28), as well as prisoners of war when speedy evacuation of the latter was essential. This method was very popular.
with all concerned because evacuation of prisoners of war by marching (29) always required the assignment of strong escorts (30), thereby depriving the troop units of the services of a large number of men for a considerable period of time. After the prisoners of war were turned over, the escorts rejoined their units by first available motor transportation.

Unsatisfactory signal communication (31) often caused difficulties in the operation of the supply service, just as they did in field operations.

The director of telegraphs of the communications zone (32) was, in accordance with regulations, required to establish connection with the signal lines in rear of the communications zone and to extend these lines forward to army headquarters. However, the available equipment proved insufficient for the rapid advance. Not until after the retreat from the Marne, was the telegraph directorate able to function properly and fully carry out its mission. Wireless communication likewise proved a failure, there being no wireless installation (33) in the communications zone; not until later could the necessary apparatus be procured.

The result was that, when the commander of the motor transport troops, for example, requested the communications zone headquarters to transmit orders by radio to the commander of the 4th Cavalry Division, to provide protection for the motor transport companies operating on the exposed flank of the army (34), the order could not be sent.

The consequence was: first, that it became necessary to send numerous liaison officers (35) in passenger cars to and fro; second, that information and orders (36) were generally received too late, and when finally received, the need for them had passed; and, finally, that motor truck columns which were operating on the exposed flank of the

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(29) bei Anwendung von Fuszmarschen
(30) Bewachungsabteilungen
(31) mangelhafte Nachrichtenverbindung
(32) die Etappen-Telegraphen-Direktion
(33) Funkentelegraphie (F.T.)
(34) auf der offenen Armee-flanke
(35) Verbindungsoffiziere
(36) Nachrichten und Befehle
army, were frequently placed in jeopardy by the attacks of French cavalry reenforced by motorized machine guns.

Hence in the preparation of every march order (37), issued to a motor transport company we had to take into account the fact that the situation might change while the order was being executed. Such orders were habitually worded as follows:

"Motor transport company No. ___ will load (for example, in Liege-Main Railway Station) 54 tons of ammunition (½ field gun model of 1916 (38)), and ½ light howitzer (39); it will then proceed via ______________ to the region of ______________, and make delivery to the 2nd Section, III Army Corps Ammunition Column. Thereafter it will return in the direction of __________, our next prospective railhead; the commander will report by motor transportation for orders in Y, which probably will be the next communications zone main depot.

Upon request the wounded, as well as empty ammunition receptacles will be taken to the rear.

P.S. (40): III Army Corps headquarters was yesterday in A., the Second Section, Corps Ammunition Column will be found in that vicinity to-day."

Motor transport companies provided with such orders invariably reached their destination; notwithstanding the fact that they were, in each case compelled to travel for a distance of 150 kilometers or more in hostile territory; guided in part in the absence of maps by road sketches (41) only and in part commanded by noncommissioned officers of the reserves who could neither read nor speak the French language.

When an anticipated battle did not take place it happened that the corps column to which ammunition was to be forwarded by zone motor trucks, was still loaded and therefore unable to take over the ammunition. Under such circumstances, the commander of the ammunition column concerned frequently refused to accept the cargo (42) and, instead, required the motor transport company to follow his column and conform to the latter's slow rate of march. He should have established an intermediate ammunition depot or dump (43), and freed the motor transport company

(37) Marschbefehle
(38) ½ F.K. 16 (Feldkanone)
(39) ½ l. F. H. (leichte Feldhaubitze)

(40) Zusatz
(41) Wegeskizzen
(42) die Ladung
(43) Zwischendepot
at once. Army headquarters was obliged to interfere quite frequently on account of such practice.

Often motor transport companies were sent beyond the corps column to refill the ammunition vehicles (44) of the troops. This occurred gradually in the case of 30 motor transport companies during the Battle of the Marne (see Plate XXII). When neither corps ammunition companies nor ammunition vehicles of the troops were at hand or prepared to receive ammunition, ammunition dumps were established near the front line, from the stocks which the motor transport companies had brought up. In one case in Belgium later on, the attempt was made to move this dumped ammunition forward, but without success, owing to the fact that the distance was too great. Moreover the railhead (45) was about to be advanced.

What finally became of these ammunition dumps established in this manner along the Marne, I am unable to tell. I believe, most of it was used up, and the remainder was recovered by the vehicles of the troop units prior to their withdrawal.

From the foregoing it is evident that the commander of the motor transport troops required a great number of passenger cars (46) to direct and control the motor transport companies, in conformity with the orders of the communications zone. For he had to know at all times, where every motor transport company was; whether and how it was loaded; whether it was moving to the front or to the rear; when and where it would again be available; and its carrying capacity.

It was prescribed in regulations that the motor transport companies should average about 100 kilometers a day, over favorable terrain, and that there should be one day each week set aside for repairs (47). The latter provision was consistently ignored until after the withdrawal from the Marne; instead, greater distances (48) were exacted. Motor transport companies frequently had only from two to

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(44) Munitionsfahrzeuge (47) Instandsetzungstag
(45) Eisenbahnendpunkt (48) höhere Marschleis-
(46) Personenfahrzeugen tungen
three hours of rest in 24 hours. The result was that drivers often fell asleep from overexertion, and the trucks then ran into the ditch, or against a tree.

The motor transportation was not always in good condition. The trailers (49) turned out to be too heavy and unwieldy and, therefore, were frequently abandoned. It is not surprising, therefore, that 60 per cent of the trucks had become unserviceable by Sept. 12th; and, to make matters worse, no reserve vehicles (50) were available. These came up later.

As to the movements of the motor transport park, its forward displacement was (51) to be effected by rail, in accordance with existing regulations. However, owing to the general state of transportation facilities, rail transportation was never granted. The result was that the Commander of the Motor Transport Troops, First Army, caused the communications zone motor transport park to be divided into two sections (52). The 1st Section (including repair section (53), replacement personnel, reserve stores, and parts) was, in each case, ordered to proceed to the communications zone main depot as promptly as possible; the 2d Section followed later. The latter contained among other elements a salvage section (54), as well as a section handling confiscated and captured motor vehicles.

It was originally intended to supply automatically to the army the "week's supply of benzol and oil (55)" provided for in regulations. This required a train of 300 tons carrying capacity. The sending of a new supply each week, as prescribed, created great difficulties and, as a rule, proved unsuccessful. The stereotype phrase "ammunition will be given priority" could not be eliminated from orders. The realization that motor trucks were required to haul ammunitions from the railheads to the front, and that in turn the trucks could move only if supplied with benzol and oil, was of slow growth.

(49) Anhänger (53) Reparaturabteilung
(50) Ersatz (54) Abschleppabteilung
(51) Vorschieben (literally "wrecking section") (55) achttagige Betriebsstoffnachschub
(52) Staffeln, literally "echelons."
The commander of the motor transport troops estimated quite correctly, from the start, that some time would elapse before the immobile motor transport depot (56) at Dusseldorf could respond to the authorized demands made upon it. He consequently placed an officer on detached service at Aix-la-Chapelle in the plant of the Fafnir Automobile Works (58), with a view to establishing there an intermediate depot (57) for the Motor Transport Troops of the First Army. This depot afterwards rendered good service as a repair section.

When the advance began, there were assigned to army headquarters, to all army corps, and to the communications zone, each one tank truck (59), which followed its organization until empty when it was replaced by another. Aviation flights were equipped with their own tank trucks. Tank trucks contained benzol, oil, and grease (60), as well as spare tires (61).

In view of the enormous variety of tires in use, the problem of tire supply seemed almost hopeless. Headquarters (62) and troop units resorted therefore to the expedient of requisitioning tires from the inhabitants. This proved disadvantageous for the army as a whole, because technical supervision was lacking.

The motorcycle which, in time of peace, had been considered quite unsuitable for war purposes (63), was adapted as supernumerary equipment (64) by most organizations; and in the war of movement (65), in the hot days of August and September 1914, rendered excellent service.

In summing up, it may be stated that the motor transport troops and the motor transport service (66) generally reached great importance, especially in the First Army. They carried out their missions (67) and rendered possible the advance of that army in August and September 1914. Therefore, they are entitled to share in the successes achieved by the First Army during that period.
CHAPTER VIII

COMMUNICATIONS ZONE SECTION HEADQUARTERS (1)

This part has been written in answer to the question: "In accordance with what principle were communications zone section headquarters organized, and in what manner did they function?"

A communications zone section was a defined portion of the communications zone. It was controlled by the section headquarters located at the principal military station (2) in that section. The section headquarters included the office and staff of the commanding officer. The section commander was under the direct orders of the commander of the communications zone.

The commanding officer of a section who usually held the rank of field officer, was assisted by an adjutant, a judge-advocate, the necessary office personnel and some military police. He had under his control, according to requirements, a certain number of communications zone troops, taken either from landwehr units or landsturm organizations.

Communications zone section headquarters was charged with the regulation of all through-traffic (3) to and from the front, not only within the military station proper, but also within the section area. Moreover, all orders issued by higher authority for troops or transport, passing through the section, were sent to the troops through section headquarters. The Commanding officer was also required to make available, for use of the army, the resources found within his section. He provided shelter and subsistence to convoys of prisoners of war (4) coming from the front, and was responsible for their evacuation (5) to the rear.

With the means at his disposal, the section commander (6) assisted in their activities the communications zone es-

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(1) Etappenkommandanten- (4) Kriegsgefangenen-transporte
(2) Etappenort (5) Weiterleitung
(3) Durchgangsverkehr (6) Etappenkommandant

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tablishments and installations, located at his station and in his area. He designated the premises to be used as subsistence depots, hospitals, and other depots, and issued general instructions (7).

When transient troops could be subsisted in the area, without issue from depots (as for example, by billeting), it became unnecessary to establish subsistence depots in every station. For the beef cattle (8) following the army, stables and pastures (9) were provided at the various stations, and preparations made for the care and herding of such live stock. At stations where subsistence depots were favorably situated for distribution, slaughter houses (10) were established to supply fresh meat to the army.

Communications zone station hospitals (11) were set up only when their services were needed. They were primarily located at stations in the channel of the flow of the wounded.

The zone section commander was furthermore charged with the early organization of a transportation park (12) which included also motor vehicles. This park was used for the evacuation of the more seriously disabled (13), for service in connection with the subsistence depot, the army postal service, and for other purposes. He was further responsible for conspicuously marking all roads within his section area and the streets in the towns and villages, and for providing proper street illumination in the latter.

Every zone station was prepared for defense, even though an attack was not expected.

The military police (14), assigned to section headquarters, was charged with the supervision and control of movements of individual military persons on the country roads of the communications zone (stragglers).

A zone section commander was required, in enemy country, to acquire a controlling influence over the civil administration (15) of his area. The civil administration was subject to the control of the zone section commander.
in all matters affecting the interests of the army. The exploitation of the area was generally facilitated and in the long run yielded better results, if inhabitants familiar with prevailing conditions participated in the civilian administration, when practicable. Section headquarters kept a record of all requisitions imposed upon the inhabitants. Complaints of the latter were examined and settled, as promptly as possible, in accordance with justice and fairness.

In addition, the zone section commander was required to take adequate counter-espionage measures (16) within his area.

(16) Spionageversuche
CHAPTER IX

WATER WAYS

The following is presented in answer to the question: “What kind of organization functioned on the canals and rivers during the war? (a) Was it a transportation service separate from anything else? (b) Was it under the Quartermaster General at G.H.Q.? (c) What use was made of water transportation?”

All transportation on the water routes was, like the railways, under the control of the Director of Military Railways, who was subordinate to the Quartermaster General at G.H.Q. (Deputy Chief of Staff).

This service, so far as concerns the zone of the interior, had been organized in time of peace only to the extent that a number of so-called “military water way commissions” were in existence, organizations analogous to the “military railway commissions”. To these military water way commissions were assigned each certain areas in the zone of the interior containing rivers and canals, with a view to the preparation of plans for the utilization of these water ways in time of war. To this end the water way commissions consulted with the river improvement commissions and the various river navigation companies that were affected.

The transportation of convoys by water, however, was of small importance, during the period of mobilization and concentration, compared with the gigantic traffic over the railway lines. The water ways were primarily used for the purpose of provisioning the large fortresses and for the collection of supplies at the corps bases of the several

(1) Wasserstraszen (5) Strombauverwaltungen
(2) der Transport (6) Schifahrtsunterneh-
(3) Wasser-Linienkommandanturen (7) gewaltige Eisenbahn-
(4) Eisenbahn-Linienkommandanturen transportbewegung

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armies, established generally along the Rhine (see pp. 150 and 169). However, the possibilities inherent in water transportation might have been exploited to a much greater extent, had organization and pre-war preparation in this respect been more thorough and farsighted. Unquestionably greater utilization of water ways would have more than paid for itself; the railways would have been relieved and their valuable rolling stock and other materials preserved. It was evident that this question had never received the proper attention in the preparation of mobilization plans (8) in time of peace, due in no small measure to a wrong estimate as to the probable duration of a future war.

The growth of heavy and bulky shipments of materials of all kinds for use in position warfare, which caused the overburdening of the railways to assume a still more serious aspect, soon rendered mandatory a better organization of the water transport system (9). A big step in the right direction affecting organization was taken in 1916, when a “navigation section” (10) with headquarters at Berlin, was instituted as part of the office of the Director of Military Railways. This section handled all matters dealing with the utilization (11) of the water ways in the zone of the interior and in a large portion of the occupied enemy area, especially in the East and Southeast. For this purpose, there were gradually developed in accordance with actual needs, for the various river zones and canal areas a number of “navigation groups” which were placed under the control of the navigation section. I believe, up to the end of the war, there were in all about seven groups. For example, there was the “Navigation Group West” (12) at Duisburg which regulated the transport along the water routes of western and southern Germany, but especially on the Rhine. “Navigation Group North,” with headquarters in Riga, was responsible for the traffic on the water ways in the occupied Baltic areas. “Navigation Group Danube” (13) took care of the entire military traffic on the Danube.

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(8) Mobilmachungsvorarbeiten
(9) Wassertransportwesen
(10) Schiffahrtssabteilung
(11) Ausnutzung
(12) Schiffahrtsgruppe West
(13) Donau
These navigation groups combined the local navigation companies and all other river navigation concerns into "navigation pools" (14), to which transportation missions were assigned, in accordance with a definite plan. The actual operation, maintenance, harbor and wharf activities (15) were carried on exclusively by civilian labor.

In enemy territory likewise little use was made, in the beginning, of the existing water ways. I presume, this was in a measure attributable to the fact that, under the existing regulations, the communications zone was primarily responsible for the reconstruction (16) of, as well as the resumption of operation on, these water ways. Harassed as was the communications zone by a multitude of duties imposed on it, its commander did not believe that the time and energy expended upon the operation of water ways was in proportion to the results to be expected. Such results could not be expected until the water ways could accommodate through-traffic by water over long distances. Not until the Director of the Military Railways had coordinated the operation of the various water ways, did profitable utilization on a large scale of this important auxiliary means of transportation finally become a fact.

On account of the special importance of the western front, it was found necessary to create two additional organizations, the Military Canal Directorate No. 1 (17) in Brussels, and the Military Canal Directorate No. 2 in Strasbourg. The former controlled the canal commissions (18) at Gand, Lille, St. Quentin, and Sedan, in charge of the water ways of Belgium and northern France; the latter looked after the canals in Alsace and Lorraine.

To these organizations were assigned construction companies and barge companies. Moreover, numerous workmen from the occupied zone were hired for the operation of steamers and barges, and for work in connection with wharves and repair shops. For carrying cargo in enemy country, confiscated enemy water transport (19) was pri-

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(14) Vereinigung
(15) Hafen- und Werftarbeiten
(16) Wiederherstellung
(17) Militär-Kanaldirektion
(18) Kanalbetriebsamter
(19) Schiffegefäße
marily used and, to a lesser extent, tugs or small steamers purchased or rented in the zone of the interior.

These canal directorates, close to the armies, and the Navigation Section in Berlin, handled the transportation of ore (20), coal, materials for the construction of field fortifications (21) (especially wood), ammunition, general supplies in bulk, and wounded.

Although these two organizations were created spontaneously and without peace-time preparation, they nevertheless proved adequate to their tasks. With their aid, we succeeded in the end in lessening the burdens of the railways very considerably, although this result might have been accomplished much sooner.

(20) Erz (21) Materialien für den Stellungsbau
CHAPTER X

MILITARY GOVERNMENTS OF OCCUPATION AND CIVIL ADMINISTRATION (1)

THE GENERAL MILITARY GOVERNMENT OF OCCUPATION IN BELGIUM (2)

Questions: (*)

(a) "What kind of administration was set up within the communications zone, especially Belgium and France? Were civil governors or military governors appointed? If so, when? How did they function?"

(b) "Please describe as clearly as possible the connection which existed between the civil governor and the military governor in Belgium on the one hand, and the communications zone administration on the other."

What the administration was within the communications zone of the armies, has been fully set forth by me in Chapter V, "The Supply Service and the Communications Zone (3)" (pp. 147-184). Strictly speaking, there was no civil government (4) in the communications zone; the entire administration of the zone being a function of the commander of the communications zone, who was assisted therein by the various zone section commanders (5). The administration was, therefore, under the absolute control of the military authorities. However, there was assigned organically to the commander of the communications zone a civilian administrative official (6) of appropriate rank with the necessary staff, who was charged with the administration of the occupied territory, and the control of the police (7).

Only in countries such as Belgium, Poland, and Roumania, where the entire administrative establishment of

(*) These and other questions were prepared by Major Koenig for the purpose of clarifying certain points of the original treatise by General v. Kuhl; see page 65.

(1) Militar-und Zivilverwaltungen
(2) General gouvernement uren
(3) Nachschub und Etappe
(4) Zivilverwaltung
(5) Etappen-Kommandanturen
(6) Zivilverwaltungsbeamter
(7) Polizeiverwaltung

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the state came under German control, was it the practice to institute so-called "military governments of occupation" (8) with a "civil branch" subordinated to the military government. This practice was due, in part, to the necessity of limiting the continuing growth of the communications zone areas (9) which, in some instances, had already become too great.

A somewhat different administrative establishment was set up in the occupied Russian area, referred to as the "High Command East" (10), which was the G.H.Q. for that front; here separate civil administrations were established for Courland and for Lithuania. Although these civil administrations were under the control of the communications zone commanders, concerned in all matters pertaining to the armies operating in those areas, yet in all other respects they were controlled by the "administrative center" (11), a civil adjunct, which functioned at the "High Command East," under the control of the Commander-in-Chief. From my personal experiences, gained as Chief of Staff of the Twelfth Army and later as Chief of Staff of the Eighth Army, during a stay of approximately 1 1/2 years in the eastern theatre of operations, I cannot say that this organization was very satisfactory. Its mission was not clearly enough defined to enable the administrative center to function smoothly. Military and civil interests clashed constantly, and this discord was felt down to the lowest elements (section headquarters for example) where the personnel of both administrations were compelled to work side by side. The fact that neither organization was subordinated to the other, caused both parties to work against each other, to the detriment of the common cause. Within the jurisdiction of the armed forces it is necessary, in time of war, that the civilian be subordinated to the soldier, if ultimate success is to be achieved.

On August 23, 1914, when almost the entire kingdom of Belgium, with the exception of the fortress of Antwerp was in German hands, Field Marshal Baron von der Goltz

(8) Militargouvernements  (10) Oberkommando Ost.
(9) Etappengebiete     (11) Verwaltung
(12) was appointed governor general of Belgium (13), and a German administrative official of high rank (von Sandt) was assigned to him as chief of the civil administration.

On September 1, 1914, the “General Military Government of Occupation in Belgium” was established in Brussels. It was charged with the military, financial, and economic exploitation of the kingdom of Belgium. The directive which was issued by G.H.Q. in connection with this mission, contained the following general guiding principles:

“The Governor General of the Kingdom of Belgium is invested with unlimited authority (14), the supreme power (15) resting with the military. For this purpose there are placed directly under him certain landwehr troop and landsturm units.

The ‘Chief of the Civil Administration’ (16), assisted by the necessary personnel for administration and police protection, is subject to the control of the governor general. He will take over the judicial power, as well as the police power (17) in the occupied area.

As far as practicable, all Belgian civil administrative authorities (18) and municipal administrative officials will be continued in office (19) and will be directed to enter the same relationship (20) with the General Military Government of Occupation, as they held under the former royal government. Their services will be used in procuring subsistence and equipment for our forces, as well as in provisioning the native population (21). The regular collection of subsistence supplies, both for our forces and the remaining civilian population, must be accomplished by

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(12) He was born Aug. 12, 1843, wrote: ‘The Nation in Arms,’ ‘Conduct of War,’ ‘Military History of Germany in the 19th Century,’ etc. Reorganized Turkish Army in 1883; Commander of the Turkish First Army (Coast Defense of Black Sea and Gallipoli). Died in Bagdad as Commander of the Turkish Sixth Army (Irak) on April 19, 1916.

(13) Generalgouverneur von Belgien (14) mit unbeschränkter Vollmacht (15) die oberste Gewalt (16) der Chef der Zivilverwaltung (17) die gerichtliche und Polizeigewalt (18) Zivilbehörden (19) in ihren Amtern (20) Verhältnis (21) der eigenen Bevölkerung
the establishment of permanent markets (22) and similar measures."

The country was divided into a number of districts (23), conforming to the political subdivisions of the state; their mission and jurisdiction was more or less analogous to those of a communications zone. At the head of each of these districts was an officer of high rank (general officer), who was assisted by a military staff, as well as a civilian staff, the latter under a German administrative official of high rank.

Those German armies which were dependent upon Belgium for supply, as for example the First Army, reported their requirements in subsistence, requirements for constructing or maintaining lines of communication, etc., to the General Military Government of Occupation, whose duty it was to assist the various communications zone commanders in their missions.

To the best of my knowledge, the official intercourse (24) between the communications zone of the First Army and the administrative authorities of the General Military Government of Occupation was effected without friction. The transaction of their business was facilitated by the fact that the General Military Government of Occupation was under the direct control of G.H.Q. and that all official business (25) passed through the hands of the Quartermaster General (Deputy Chief of Staff) at G.H.Q. Since the several communications zones (26) were also under the jurisdiction (27) of the Quartermaster General, the latter was able to settle promptly all differences of opinion (28) arising between those two administrative branches which, as stated before, would occur only very rarely.

(22) standige Markte (26) die Etappen-Inspektionen
(23) Bezirke (27) ressortierten
(24) Verkehr (28) Meinungsverschiedenheiten
(25) der dienstliche
Verkehr
CHAPTER XI

MOBILIZATION (1) BY MEANS OF THE RAILWAYS.—REASONS FOR ITS SUCCESSFUL TERMINATION.—RAILWAY SERVICE (2) IN REAR OF THE ARMIES DURING OPERATIONS

a. There can be no doubt but what credit for the smooth, punctual, and precise accomplishment of the mobilization, by means of the railways, was due to the good condition of the railway matériel and the efficiency of the trained civilian personnel (3), as much as to the skillful utilization of the railways by the general staff and the military railway authorities (4).

The plans for mobilization and concentration of the troops by rail were worked out, in time of peace, with painstaking care and in the minutest details. The annual revision of these plans had the effect of imparting uniform, common training to both military and civilian railway authorities. Moreover, railway map maneuvers (5) and actual practice in rail movement of large bodies of troops, on the occasion of the great imperial maneuvers (6), afforded experience and established the correctness of the methods followed in the mobilization and concentration plans.

Thus, the authorities entrusted with the direction of the troop movements by rail (with the assistance of an ideally trained and reliable civilian railway personnel (7)) were able to fully meet the new and manifold demands imposed on them by the gigantic proportions of the World War.

b. The entire military railway service (8) remained under the sole control of the Director of Military Railways (9), after the completion of the concentration and during

the operations; the Quartermaster General (Deputy Chief of Staff) at G.H.Q. exercising general supervision only. For technical reasons incident to railway operation (11), this centralized control (10) was absolutely necessary. Neither army headquarters, nor communications zone headquarters, nor the Military Government of Occupation in Belgium was authorized to give orders to the military railway authorities functioning within their jurisdiction. All the army commander could do was to make known his desires and requirements to the army railway agent, a general staff officer representing the Director of Military Railways (Bba.) (12), at army headquarters. Communications zone headquarters also had such an agent (Bba.) (12), who functioned at that headquarters as representative of the army railway agent. For the direction of railway operation on seized enemy lines (13), military railway directorates (M.E.D.) (14) were established at the rate of about one for each army rear area.

Major Buhrmann, who was Bba. of the First Army, makes the following statement concerning the activities and performances of the military railway authorities (15) after the completion of the concentration:

“(1) The regular train schedule provided for intervals between trains; it also provided for a daily suspension of traffic (16), in order to accomplish detraining, clearing the line, etc. When the concentration was nearing its end, the unloading commissary was permitted to utilize these time intervals for bringing up to the front, men and materials not provided for by the schedule. In this manner were handled the troop trains carrying parts of the III and IV Reserve Corps which had been detrained according to schedule in Crefeld and Dusseldorf; trains containing the two landwehr brigades; and important elements of the communications zone organizations. Furthermore during those intervals footsore (17) reservists

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(10) diese einheitliche Leitung
(11) Eisenbahnbetrieb
(12) Bahnbeauftragter
(13) feindliche Eisenbahnlinien
(14) Militär-Eisenbahn-direktionen
(15) Militär-Eisenbahn-behörden
(16) in der Tagespause
(17) der Marschkranken
were brought up to the troops and all switching of trains and cars was accomplished; the latter facilitated rationing and supply of the troops and lightened the labor of men and animals of the transportation companies, thus conserving their strength for the passage of the defile south of the Dutch frontier and for subsequent combat. Moreover there were other unexpected troop transports to be moved, especially since the first surprise attack against Liege had not been entirely successful and there were wounded to be evacuated (18) and deported, or voluntarily returning German nationals to be moved to the rear for repatriation. The successful completion of all these rail movements was due to the efforts of the so-called ‘unloading commissaries’ (19), one being assigned to each army. Every unloading commissary was assisted in his duties by a representative who had previously been trained in the railway division of the Great General Staff (E.A.) (20) by a railway engineer officer and a railway official of appropriate rank, together with the necessary administrative personnel and several motor cars.

"After the advance had actually begun, the ‘unloading commissary’ was attached to army headquarters in the capacity of army railway agent (Bba.) (21) (a general staff officer representing the Director of Military Railways), whereas the Bba. of the communications zone finished the detraining and unloading and attended to the service of supply. Having been army Bba., I can only discuss the latter in a general way. The communications zone Bba. received from me the necessary information regarding operations and plans (22), as well as the consolidated requirements of the army.

"The Director of Military Railways had provided in a farsighted manner an ample number of railway engineer construction companies (23) and railway engineer operating companies (24) for the right wing of the field forces.

(18) Abschub Verwundeter
(19) Ausladekommissare
(20) E. A.—Eisenbahnbau-Kompanien
(21) Bba.—Bahnbeauftragter i.e., railway agent
(22) Operationen und Absichten
(23) Eisenbahnbau-Kompanien
(24) Eisenbahnbetriebs-Kompanien
The importance of that wing had been recognized and he had arranged to have there everything needful, as far as resources would permit, even to the extent of assigning suitable officer personnel. This was highly important and in the end paid for itself. It was the duty of the army railway agent (Bba.) and his assistant, and of all commanders of railway engineer troops (Kodeis) (25) to reconnoiter, in good season, all demolished railway lines, tunnels, and bridges, to employ the railway engineer construction companies accordingly, and to ask for suitable materials. On the other hand, the military railway directorates (26) and railway engineer operating companies were responsible for relieving the congestion at railway stations, for the condition of tracks, switching facilities, and so forth. The plan of employing, during the early part of the war in 1914, airplanes (27) for reconnaissance and photography (28) came to naught, owing to the inadequate number of airplanes available and their insufficient equipment with photographic cameras. In Serbia, in 1915 and 1916, and later, on the western and eastern fronts, aviators as a matter of principle photographed all tunnels, bridges (29), and railway stations. These pictures were at once sent to the Bba., thus enabling army headquarters and the railway authorities to promptly arrive at decisions.

"One of the most difficult tasks of the army railway agents was to prevent interference in the operation of the railways by staff officers and commanders of troops. Such meddling proved very harmful, not only in the beginning of the war but also later on. The congestion and confusion experienced in the railway station of Liege (East Bank) was attributed primarily to the action of our troops and to the interference of the various communications zone authorities. At times attempts were made by troops to steal entire trains from one another. To illustrate, the Chief Quartermaster of the Second Army, whom I met in Liege, informed me very proudly that he had conducted

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(25) Kodeis is the abbreviation for Kommandeure der Eisenbahntruppen
(26) Militär-Eisenbahndirektionen
(27) Flugzeuge zur Erkundung und Photographie
(29) Kunstbauten
one standard railway train loaded with oats—I believe, he said 'personally'—as far as Liege; because in his opinion, 'the railway authorities had fallen down completely' (30); this was a favorite expression. As was to be expected, the trains were so jammed in that terminal station (31) that I had to withdraw them, unload them, and issue their contents to the First Army. In this manner I succeeded in clearing Liege and in rendering the rolling stock once more available.

"There must be no interference in the operation of the railways (32) by persons without authority or without technical training. Ample provision must be made to assign to the army railway agents good assistants and several motor cars. The army railway agent should be consulted when tactical or strategical decisions (33) are to be made, so that he may give technical advice. While headquarters of the First Army made my task easy, other army railway agents had reasons for complaint, and their own headquarters in turn for complaint about them. Vision and anticipation of future requirements are indispensible for the efficient operation of the railways. The capacity of each railway line must be carefully studied; but an increase in the demands can only be effected gradually. In case several armies are obliged to use the same railway line, it is essential that one headquarters assign the available tracks, or such tracks as can be made available. This was not the case in 1914, as we had no army group (34) and lacked all experience in this respect. Let me cite an example. The line: Liege—Namur, accommodated daily 24 trains, its maximum performance. After deducting four trains for equalizing the supply requirements (35) of the armies, there remained 20 trains. Of these there were retained by the military railway directorate two trains for hauling coal and other materials, construction trains (36) included. There remained, therefore, for the

(30) völlig versagt  (34) H. Gr.—Heeresgruppe
(31) Sackbahnof     (35) zum Ausgleich
(32) Eingriff in den Betrieb (36) Bauzüge
(33) taktische und operative
Entschließungen
First Army 6 trains,
Second Army 6 trains,
Third Army 6 trains,

to be apportioned by each chief quartermaster (army) with the assistance of his army rail­
way agent, for the transportation of troops, 
ammunition, subsistence, evacuation of sick 
and wounded, etc.

All calls in excess of the above were denied by the railway 
directorates who then reported their action to the army 
railway agent (Bba.) ; such refusal was necessary in order 
to guarantee a maximum performance (37) when G.H.Q. 
needed trains to move troops. Only in this manner did I 
succeed, during the Serbian Offensive in 1916, in bringing 
order out of the chaos which existed along the Hungarian 
and Serbian lines. Moreover I had to contend there with 
the opposition of our Allies (38) oh that front, which it 
was necessary to overcome.

“(2) After the fall of Liege the railways were used 
for troop movements on a large scale (39) in shifting the 
IX Reserve Corps to the region of Louvain and in trans­
porting troops for the investment of Antwerp. With these 
exceptions, the railways were primarily employed in con­
nection with the service of supply. The demolitions along 
the railway lines (40) did not prove as permanent as had 
been anticipated; the tunnels east of Liege, for example, 
had not been destroyed. The railway engineer construction 
companies were, therefore, able to reconstruct the lines in 
comparatively short time, especially since ample ma­
terials were found in this highly industrialized country. 
The absence of thorough destruction may be explained by 
the fact that the Belgians were relying on French and 
British promises of assistance and consequently expected 
to utilize the railway lines for their own advance later on. 
However, our rapid advance overran them. As far as the 
First Army was concerned, only one railway line could be 
considered as line of communication (41); namely, the

(37) die Hochstleistung  (40) Bahnzerstorungen
(38) der Koalierten  (41) als ruckwartige Ver-
(39) im Groszen  bindung
line: Liege—Louvain—Brussels—Braine le Comte—Jurbise—Mons—Valenciennes—Cambrai—St. Quentin—Tergnier—Chauny. It was only after the fall of Maubeuge—a place which for reasons of rail supply had to be reduced—that the general railway situation (42) gradually improved. Up to the fall of Maubeuge, and until the line: Maubeuge—Aulnoy—Le Cateau—Wassigny—Hirson—Laon (with the branch-lines: Wassigny—Guise, and Origny—Ribemont—La Ferte—Chevresis—Pouilly) was reconstructed (which was not accomplished until long after the Battle of the Marne), the entire supply service (43) of the First and Second Armies, the cavalry divisions included, as well as the troop movements for the offensive against Antwerp, etc., was conducted over the railway line: Liege—Brussels. Most disturbing was the bottleneck near Liege, since that portion of the line was being utilized to its utmost capacity. During the advance, there was established as a connecting link between demolished tunnels and bridges (44), a shuttle train service (45), which was operated in connection with an unloading service. However, this shuttle train service never functioned well, since locomotives were lacking, owing to their systematic removal by the enemy, and also because the advance of the army was too rapid. Narrow-gauge railways (46) were also employed. They were in most cases ready for operation; and since they were privately owned, some of the concerns could be induced to operate them. In this manner we succeeded, by applying military pressure according to circumstances, in starting operation on the narrow-gauge lines radiating from Brussels in a westerly direction to Ninove, and to Hal. But the First Army derived little benefit from them, its rate of advance being too rapid.

“In the end, we were compelled to resort again and again to transportation companies, mainly motor transport companies (47), in order to bring up oats and ammunition. Notwithstanding the very slow improvement in the railway

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(42) die Eisenbahnverhältnisse  
(43) Nachschub  
(44) Kunstbauten  
(45) Pendelverkehr  
(46) Kleinbahnen  
(47) Lastkraftwagen-Kolonnen
situation, the First Army experienced no shortage of subsistence. The wealth of the invaded country offered almost everything, the crops were ripe and there was an abundance of oats, though they were still unthrashed.

"With reference to the subsistence situation (48) in the IV Army Corps, I recently had a conversation with the former commissary to that corps, who stated that it had been entirely satisfactory. Occasional complaints by the troops were due to the fact that they were tired and that the organizations lacked experience in requisitioning supplies quickly. Troops are prone to complain, especially when they have horses to look after.

"The repeated changes of direction, executed during the advance of the First Army, might have made preparations for railway extension and reconstruction very difficult. It was highly important, in this connection, that one possessed the 'right intuition,' so to speak, in order to determine the exact extent of the demolitions, and to calculate the time required for their reconstruction. I had to ask myself in the first place: 'Where will the First Army, the Second Army, the rear echelons, etc. be after this line is completed?'—and secondly: 'Is it possible to select a railway line (49), which will supply the First Army and the Second Army simultaneously, and moreover will serve for troop movements later on, as well as accommodate reinforcements (artillery intended for Paris, reserves in rear of the right wing) ?'

"Recommendations made by the army railway agent were submitted to the Director of Military Railways for decision, in case they were of sufficient importance; less important cases were decided by the military railway directorate (50). In the beginning, the latter had its seat in Aix-la-Chapelle, but was removed to Liege, after the fall of that fortress, and later to Brussels. This enabled the military railway directorate to maintain liaison with the various railway agents, and to put in its best efforts to assist the troops. At the most important railway stations there were installed so-called 'forwarding officers'
and 'relay stations;' (52) the former by communications zone headquarters (these forwarding officers were usually assistants to the communications zone railway agent), the latter by the Military Railway Directorate First Army. Thus the requirements of the troops and those pertaining to railway operation were coordinated and reconciled. A most disturbing element in connection with railway operation was the so-called 'wild' and the 'smuggled' railway cars. These were frequently loaded with well-meant gifts for the troops and other supplies which had not passed the army base and were not reported to the military railway directorate (53), but had been loaded at an intermediate railway station (54), or were simply consigned 'to the Second Army Corps' via Aix-la-Chapelle. So it often happened that these railway cars (55) would rove about, congesting railway yards and increasing the car shortage (56) in the theatre of operations, as well as in the zone of the interior. Unloading details (57) numbering many men, who arbitrarily unloaded the contents and then transferred them to the communications zone or to the nearest troops, remedied the evil and cleared the overcrowded railheads (58) and side-tracks (59). In order to prevent these unauthorized, small carload shipments from entering the combat zone, certain railway stations and points along the lines were selected with a view to spotting and holding such cars, which practice proved very effective. Ideal conditions existed when a complete train could be despatched from the initial railway station (60) to the final destination, without interference while en route.

"(3) The advance of the First Army on three roads during the first week, necessitating great lateral crowding, had led to an arrangement whereby, to facilitate issues, subsistence railway trains, flour trains, and oats trains, were spotted, as far as the railway situation would

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\[\begin{array}{ll}
(51) & \text{Nachschuboffiziere} \\
(52) & \text{Weiterleitungstellen} \\
(53) & \text{Med.— Militär Eisenbahndirektion} \\
(54) & \text{Zwischenstation} \\
(55) & \text{Waggons} \\
(56) & \text{Wagennot} \\
(57) & \text{Entladekommandos} \\
(58) & \text{Spitzenbahnböfe} \\
(59) & \text{Abstellgleise} \\
(60) & \text{Aufangsbahnhof}
\end{array}\]
permit in advance of the arrival of the corps while still in Germany; and in the shelter areas of the corps when in Belgium. These trains were accurately marked as to destination, and loaded and labeled as to contents. Tank cars (61) were attached to the tail of the train. In consequence of these measures, the movements by marching (62) were rendered easier and the roads relieved. Whenever the railway situation permitted, the various corps maintained on the railway, in cars, mobile reserves of subsistence and ammunition, either with or without authority from the army railway agent. After the troops had passed beyond the German frontier in 1914, opportunity for such procedure was rarely offered. Owing to the danger threatening from the air (63), it will be necessary, more so at present than ever before, to unload cars as quickly as possible and to keep the railway yards clear, just as a matter of principle.

"(4) To what extent the changes of direction in the advance (64), which took place on August 31 and on September 9, affected the service of supply by rail (65), I have endeavored to show in the preceding account. Since it was an accepted policy to reconstruct promptly a main line (66), which would accommodate the supply of both the First and Second Armies simultaneously, a dispersion of the railway engineer construction companies was avoided, and that quite correctly. The general direction which was followed in the work of reconstruction from Brussels as a starting point, was always 'Paris.' The two changes of direction did not materially affect the forwarding of supplies by rail from the zone of the interior, because reconstruction and operation were unable to keep pace with the rapid advance. However, these changes greatly disturbed the service of supply of the various army corps and of the communications zone, which had just installed with much effort a shuttle-train service on the standard lines and narrow gauge roads, supplemented in part by a barge

(61) Tankwagen (64) Marschrichtungsanderungen
(62) Marschbewegungen (65) Eisenbahnnachschtub
(63) Fliegergefahr (66) Hauptstrecke
service (67). Our retirement which followed, rendered the forwarding of supplies by means of the railways (68) much easier. The question of evacuation and abandonment of railway lines did not come up at this stage, since the forward limits of actual railway operation (69) were not sufficiently advanced. The First Army fell back on its communications zone main depot at Chauny, which soon became the railhead (70) for that army. Beginning with September 21, the general railway situation proved very favorable for the First Army. The situation became temporarily more difficult, when those enormous troop movements (71) began, which finally led to the race for the channel coast.”

(67) auf dem Wasserwege; (69) die Betriebspitzen
this is doubted by the author (70) Endpunkt
(68) Eisenbahnnachschub (71) Heeresverschiebungen
CHAPTER XII

STANDARD RAILWAY TRAINS (1)

In answer to the question “Was there a standard type of railway train in use by the Germans? If so, what information can you supply in regard to its carrying capacity?” the following is submitted.

a. For the transportation of the larger organizations (2), we have had, since 1915, standard troop trains, the capacity of which was based on the average “transportation strength” (3) of troop units based on tables of organization (4).

We distinguished:

- infantry train, carrying capacity one battalion;
- cavalry train, carrying capacity one troop (Eskadron);
- artillery train, carrying capacity one battery;
- wagon transport train, carrying capacity one transportation company;
- pioneer train, carrying capacity one pioneer formation;
- headquarters train, carrying capacity headquarters unit (division or higher);
- besides there were so-called supernumerary trains, which provided transportation for leftovers or fractional parts of troop units (5).

The composition of the trains with reference to passenger cars, freight cars, and platform cars (6), was based on the average strength of the troop units as to personnel, horses, and vehicles. The maximum length of a train was 110 axles or 55 cars.

b. “Shuttle-trains” (7) were employed to move troops over short distances and, as the name implies, were op-
erated shuttle-fashion between two points. One half of a shuttle-train consisted of covered freight cars (8), the other half of platform cars, to which were added a few passenger cars. When these trains were used, all comfort had to be dispensed with, as a matter of course; stock cars (9) also served for the transportation of personnel (10), without being specially prepared for that purpose.

c. We deliberately refused to adopt the French system, which provided for two or three train types only, for the infantry and mounted branches (11). In the application of this system, the advantage derived from greater simplicity of railway operation was more than counterbalanced by the disadvantages arising from the discomforts to the troops and the splitting up of units (12).

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(8) gedeckter Güterwagen  
(9) Pferdewagen  
(10) Mannschaftswagen  
(11) berittene Waffen  
(12) Zerreiszen der Verbände
CHAPTER XIII

TRANSFER STATIONS (1)

I was asked to answer the following question "I notice that the diagram showing the organization of the communications zone in 1914 places the transfer station in the zone of the interior, but that the army commander has jurisdiction, since he commands the whole theatre of operations. Please explain."

Transfer stations were not an agency of, nor established by the communications zone commanders, but by the military railway service (2). The operation of the railways in the zone of the interior remained, in time of war, in the hands of the state railway administration, but was under the supervision of the Director of Military Railways. In enemy territory the lines under operation were militarized and to that end placed under military railway directorates.

The transfer of operation, from civilian control in the zone of the interior to military control beyond that zone, was effected at the last important railway station in the zone of the interior located nearest the frontier; this railway station was termed "transfer station." It did not come under the jurisdiction of the army commander; the latter had no authority to give directions for the operation of the railways, this being solely a function of the Director of Military Railways. The transfer station, as stated before, had nothing to do with the operation of the communications zone.

(1) Übergangsstationen (2) Militär-Eisenbahnwesen
CHAPTER XIV

APPENDIX—CAUSES FOR THE OUTCOME OF BATTLE OF THE MARNE

This appendix was written in answer to the following question: “Considering the remarkable marching performances of the right wing of the German Army in 1914, and that it was supplied adequately and transported satisfactorily, what, in your opinion, did most to deny the German armies of success? I ask this question, because I find a divided opinion among German officers themselves: some say, the high command failed to take command, due to the Chief of the General Staff being too old or too ill; others that it could not, being too far away; others, that the Commander of the German Second Army made a false estimate of the situation; and still others, that Lieutenant Colonel Hentsch exceeded his authority and caused the loss of the victory. I am trying to ascertain the real facts,—someone must know them;—perhaps all these factors contributed to the German reverse at the Battle of the Marne. Please state frankly your opinion, going fully into details.”

There is no doubt in my mind but that the cause for our failure (1) at the Marne must be attributed to the lack in strength of the German right wing which, as already mentioned in my remarks (contained in Chapter I), was inadequate from the start. Although all the other reasons advanced in the above question probably contributed to the final outcome of the battle, yet when compared with the principal cause, they assume incidental importance only.

In my opinion, German G.H.Q. was entirely correct in 1914, in following the plan of Count Schlieffen: to launch the first decisive (2) attack in the west, by advancing through Belgium and turning the strongly fortified French positions on their eastern front. By so doing, we had the

(1) Miszerfolg (2) entscheidungsmaechend

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prospect of conquering France in a comparatively short time, of seizing the Franco-Belgian coast line facing England and of effecting an early settlement of the conflict in our favor.

Having arrived at this decision, it was incumbent upon G.H.Q. to assure an overwhelming effectiveness of our right wing by strengthening it at the expense of the remainder of the German front. The numerical strength of our armed forces, as well as the necessity for carrying on the war in two widely separated theatres of operation, did not permit G.H.Q. to employ superior numbers along the entire western front. In August, 1914, G.H.Q. concentrated in Alsace-Lorraine almost one-fourth of its total strength, i.e., the Sixth and Seventh Armies (later followed by four replacement divisions (3)), for the purpose of delivering there a second decisive blow against the prospective advance in the direction of the Sarre. This, in my opinion, was not in conformity with the original decision and therefore strategically faulty. It would have been better, and in conformity with Count Schlieffen's recommendations, "to contain (4) with the minimum number of German forces the greatest possible number of French troops," in order to obtain thereby adequate forces for the offensive through Belgium.

Had G.H.Q. adhered to Schlieffen's basic idea (5), it would have been possible to withdraw from the southern wing and from the remainder of the line at least four army corps and several cavalry divisions (and moreover the above mentioned four replacement divisions) for transfer to the northern wing, where the decision was sought (6). G.H.Q. would thereby have been in a position to constitute one more army and echelon it in rear of that wing at a convenient distance and perhaps, in addition, to place in readiness, at suitable points, strong reserves which could have been brought up later by rail. That this could have been accomplished, I have stated before (see Chapter I). At-

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(3) Ersatzdivisionen
(4) zu fesseln
(5) diesem Schlieffen'schen
Grundgedanken
(6) für den nördlichen Entscheidungsflügel
tention is likewise directed to my recommendations, whereby the necessary forces for the reinforcements of the right wing (7) could have been obtained (see pp. 102 to 103).

Such assignment of forces to the right wing, in accordance with the Schlieffen Plan, would have enabled the First Army to execute Schlieffen's advance to the lower Seine and then to sweep around Paris from the west. This would have enveloped (9) the French left, resulted in a decisive battle and the annihilation of the French. I have tried to show (on p. 101 et seq.) that an operation on such a large scale (10) was no longer feasible during the last days of August and in the beginning of September, considering the forces then available for the First Army. However, I have also endeavored to show (on those pages), how the mistake made in the original distribution of troops (11) during concentration could have been rectified, at that juncture, by a shifting of additional forces to that wing. By so doing, we would have obtained sufficient troops to constitute an echelon in support of our right and increased its effectiveness and rapidity of advance; thus enabling us to carry out the much less ambitious plan of G.H.Q. of September 2, that is, "to push the French away (12) from Paris in a southeasterly direction." Our G.H.Q. had failed to recognize the necessity for such reinforcements although it should have known that the French, in order to ward off the threat against their left wing, would bring up the necessary forces from their eastern front, which was strongly held and in much less danger. But when the First Army, on the morning of September 4, brought this question of reinforcements to the attention of G.H.Q. by demanding by radio approximately two army corps as flank protection for the right wing (13), the High Command (14) discovered that it could not comply with that request (see p. 104).

If an echelon or second line, consisting of several army corps, had followed the First Army in those eventful days
of September, 1914, it would have been possible to assign to it one of the missions of the First Army contained in the order of September 2, "to protect the flank of the armed forces" (15), after the various corps of the First Army had crossed the Marne. I am convinced that about three fresh army corps with several cavalry divisions attached (the latter could have been readily spared at other points of the front), would have sufficed to repulse successfully the attack of the army under Maunoury. These additional forces would have enabled the First Army, by using all its strength and by utilizing to the best advantage its lead (16) over the Second Army, to attend to the other part of its mission, the accomplishment of which was then very promising, "to push the enemy away from Paris in a southeasterly direction." I believe that thus a decision would have been gained at the Marne, favorable for us and of momentous consequence for the further conduct of the war.

Even if our G.H.Q. had not entertained, until the latter part of August, the idea of concentrating (17) such an echelon in rear of the First Army, the approach of such a force would have exerted great strategic influence during the Battle of the Marne, even though it did not arrive in time to participate in the battle. Thus reinforced, the Commander of the First Army would not have been compelled to execute a sudden change of direction with all his corps, from south to west for the purpose of parrying the blow (18) of General Maunoury's army on the Ourcq. Instead, the First Army, being thus strong enough, could have continued its original operations in a southeasterly direction. The IV Reserve Corps, by falling back behind the Ourcq river (19), would have been in a position to hold the French there until the approaching reinforcements (of the second line or echelon) could take them in flank.

It is very doubtful whether the thrust (20) of the French Sixth Army would have materialized at all under these conditions. In the absence of that attack, the reserve

(15) Flankenschutz des Heeres
(16) Vorsprung
(17) Gedanke des Zusam-
army, following in echelon, would have furnished the required flank protection for our forces, by taking up a position in readiness (21) in front of Paris. An attack on Paris might have received serious consideration, after the arrival of adequate reinforcements, especially of heavy artillery.

The main reason for our lack of success must be ascribed to this: G.H.Q. had underestimated (22) the importance of the German right wing for the decision on the western front; it had utterly failed to appreciate the manifold tasks of that wing, all of which called for the employment of strong forces; and lastly it had distributed its forces disadvantageously, owing to that wrong estimate of the situation, not only at the beginning, but also during the further course of operations.

The result was partially attributable to the Chief of Staff at G.H.Q., whose efficiency (23) had been impaired through sickness and other causes; he, to whom had been entrusted the leadership of our forces in the field, allowed the reins of command to drag on the ground (24). Other contributing factors were the great distance separating G.H.Q. from the combat zone and the inadequacy of signal communication connecting it with the various armies. However, an energetic high command, directing affairs with a firm hand, and able to follow the course of events closely at all times by means of efficient liaison with the several army headquarters, would have found ways and means to rectify these omissions, to some extent at least, by timely and drastic measures (25), either in the manner indicated by me or in some other fashion. G.H.Q. should never have permitted our right flank to be exposed to the attack of French contingents from Paris.

To prevent this, a pause in the operations (26) might have been necessary as a last expedient, about the end of August, for the purpose of regrouping our forces; to give the right wing the proper strength and that echelonment
in depth (27) which the situation demanded, even though there were many disadvantages connected with such a pause.

Whatever other reasons may have been advanced in explanation of our failure (28) at the Marne, they were not decisive, in my opinion. To these belong the wrong estimate of the situation on the part of the commander of the Second Army and his hasty decision (29) based thereon; as well as the unfortunate interference of Lieutenant Colonel Hentsch representing G.H.Q., who exceeded his authority. The influence of these factors was not felt until, in consequence of the above stated omissions (30), a success decisive in its nature for the general situation on the western front and disastrous for our opponent, could no longer be attained.

If we dismiss the idea of a decisive victory, it must be admitted that the battle, on September 9, was not at all unfavorable for us. We had succeeded in parrying the thrust of the French Sixth Army completely, the French had been put on the defensive and the right wing of the First Army was progressing victoriously. General Sydow who, at that time, was chief of staff of the Ninth Army Corps, writes about this phase as follows: "It cannot be questioned but that, during the Battle of the Ourcq, we were superior to our opponent, General Maunoury; we could have continued our advance, had it not been for the fact that we were ordered back."

The critical situation produced by the British crossing of the Marne between Chateau-Thierry and la Ferte-sous-Jouarre had been temporarily met by refusing (31) the left wing of the First Army. As far as could be predicted, this critical situation would have been completely straightened out by a victory over General Maunoury's army (a victory which appeared to be imminent), and by the favorable progress of the battle that was being fought with the French Ninth Army near Fere-Champonoise.

(27) tiefe Gliederung (30) Unterlassungen
(28) Misserfolg (31) durch Zurückbiegen
(29) übereilte Entschlüsse
General von Bülow's unjustifiable decision to retreat (32), as well as the disastrous interference (33) of Lieutenant Colonel Hentsch, had the effect that the situation, which had been established by us at great sacrifice in a struggle lasting over five days, could not be maintained and exploited for another promising operation; though the situation was favorable. All that had been gained was surrendered without necessity. The position now occupied was unfavorable for the initiation of future operations. But, it would be wrong to classify these events as "decisive factors" in our failure to win a great victory at the Marne. The unsuccessful outcome (34) of the German operations, up to September 9, was due to the fact that our G.H.Q. had permitted the French to concentrate towards the end, strong superior forces opposite our right wing where the decision was sought (35). The High Command failed, at the critical moment, to take the counter measures that were still possible for strengthening our right wing, even though, at that time, numerically superior German forces were opposing comparatively weak French contingents along the front in Lorraine.

(Signed)

v. BERGMANN.
Advance of the German First, Second, and Third Armies in
August & September, 1914

MILITARY INTELLIGENCE DIVISION; CCHCMAL STAFF.
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