

THE ARMY

OF THE

NORTH GERMAN CONFEDERATION.



CHAPTER I.

ORGANIZATION OF THE ARMY OF THE NORTH GERMAN CONFEDERATION.

THE NORTH GERMAN CONFEDERATION, this great national creation of the sword and policy of Prussia, comprises the following States: Prussia with Lauenburg, Saxony, Mecklenburg-Schwerin and Mecklenburg-Strelitz, Saxe-Weimar, Oldenburg, Brunswick, Saxe-Meiningen, Saxe-Altenburg, Saxe-Coburg-Gotha, Anhalt, Schwarzburg-Rudolstadt, Schwarzburg-Sondershausen, Waldeck, Reuss of the elder branch and Reuss of the junior branch, Schaumburg-Lippe, Lippe, Hamburg, Bremen, Lübeck, and that part of the Grandduchy of Hesse which lies to the north of the Main.

The Presidency of the Confederation is conferred, by the political constitution, on His Majesty the King of Prussia. The King is Commander-in-Chief of the Army of the Confederation. The statutes of the constitution of the Confederation relating to the organization of the Army are as follows:

‘The whole of the land forces of the Confederation will form a single Army, placed, in time of peace as well as in time of

war, under the command of the King of Prussia, as Generalissimo of the Confederation.

‘The regiments, &c., will be numbered consecutively throughout the whole Army of the Confederation. The colour and make of the clothing of the Royal Prussian Army will serve as the standard. It rests with the Princes of the contingents concerned to decide upon the exterior distinctive marks (cockades, etc.).

‘The Commander-in-Chief will have the right of seeing that the effective of the federal troops is always complete and fit for war, and that uniformity is maintained in the organization, formation, equipment, command, and instruction of the men, as well as in the qualifications of the officers.

‘For this object, the Commander-in-Chief is authorized to satisfy himself, at all times, by inspections, as to the condition of the different contingents, and to give the necessary orders for remedying any imperfections which he may remark.

‘The Commander-in-Chief decides the number of effectives, the composition and distribution of the contingents of the Army of the Confederation, and takes measures for organizing the Landwehr. He has the right of designating the garrisons upon the territory of the Confederation, and of ordering the formation on war-footing of each portion of the Confederate Army.

‘In order to maintain the unity, which is indispensable in the administration, provisioning, arming, and equipment of all the troops in the Confederate Army, the measures adopted in future in the Prussian Army will be communicated, in the clearest manner, by the Minister of War, and by medium of the Committee of the Federal Army Council, to the commandants of the other contingents of the Confederation, with the view to their being appropriately observed by the land forces and fortresses.

‘All troops of the Confederation owe unconditional obedience to the orders of the Commander-in-Chief. This obligation is entered into in taking the oath of fidelity to the colours.

'The officer who holds the chief command of a contingent, as well as those who command a larger force than one contingent, and all fortress commandants, are named by the Commander-in-Chief. These officers take the oath of fidelity to the colours. The nomination of generals, and of officers fulfilling the functions of generals in the federal contingents, is always submitted for the sanction of the Commander-in-Chief.

'The Commander-in-Chief has the right of constructing fortresses within the territory of the Confederation.

'The Princes of the States of the Confederation, as well as the Senates of the Free Towns, name the officers of their contingents, where no special conventions have decided otherwise (subject to the restrictions already indicated). They are the chiefs of all troops belonging to their territories, and enjoy all the honours belonging to this command. They have the right of inspection at all times; and, besides the reports and announcements of changes, they receive timely information, through the official organ of publication, of the promotion and changes which concern their respective troops.

'When public safety is threatened in the Confederation territory, the Commander-in-Chief can declare each part in a state of siege.'

This general basis of the constitution of the Army has been the object of more detailed conventions between Prussia and the other States, Saxony and Brunswick excepted, by virtue of which the contingents of these States form a close and organic alliance with the Prussian Army, and are so blended together that the King of Prussia has the right of naming, promoting, deposing, and dismissing all the officers, *porte-épée-fähnriche*, and doctors.

The troops of the kingdom of Saxony form a special and independent Army Corps: the Commander-in-Chief has relinquished interference with their interior administration, and only retains with them the relations prescribed by the general statutes of the constitution of the Army of the Confederation.

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Brunswick has not abandoned the sovereign right of nominating the officers of its contingent. The troops of this duchy have, moreover, retained their old uniform.

That portion of the Grand Duchy of Hesse which lies to the north of the Main alone forms part of the North German Confederation. In order to preserve unity in the military affairs of the country, the Hessian Government has decided to unite its whole division of troops with the Army of the Confederation. Its organization, instruction, recruiting, &c., are regulated conformably with the general principles of the constitution which governs the Federal Army. (The King of Prussia has the right of placing a garrison in Mayence, which is a Hessian fortress, and of nominating its military authorities.)

The contingents of the different States, including those which are fused into the Prussian Army, if they constitute a body of troops (regiment, battalion, artillery-detachment, or battery), bear a provincial (State) appellation, in addition to the number which runs consecutively through the whole Army in each arm.

The strength of the land forces of the Northern Confederation—arising from universal obligatory service throughout all the States of the Confederation, and to the exclusion of all substitution—is divided into three categories :

The Standing Army.

The Landwehr.

The Landsturm.

Military service is obligatory from the age of twenty years. Voluntary engagements are authorized after completing the seventeenth year. Service in the Standing Army (line) lasts for seven years, three of which are with the colours excepting one-year Volunteers, and a portion of the soldiers of the train who serve with the colours, the former for one year only and the latter for six months. During the remainder of the time the men are on furlough in the reserve, but in readiness, in case of mobilization, to be called up to serve with the colours again for

the purpose of completing the troops to a war footing. When passed into the Landwehr, they remain there for five years. The Landwehr of the last years can also be called up to complete the corps if the reserves are insufficient. During war, admissions into the Landwehr and discharges from it are not allowed.

The Standing Army is called upon to form the first line in war. It is at the same time the school of instruction for the whole nation in military service.

The Landwehr, formed into special Corps, serves to reinforce the Standing Army in war. When called to the colours it will, in the first instance, garrison the fortresses, but can also, in case of need, be mobilized for active service in the field. In this case reserve corps or divisions are usually formed from the Landwehr, such as was lately done in the campaign of 1866, and is the case in the war now taking place. During the rapid campaign of 1866, the Landwehr, with the exception of some isolated portions, was unable to take an active part. In the present war it has had ample opportunity of proving its military value, notably before Strasburg, Metz, Paris, Verdun, Neu-Breisach, &c., and of effectually correcting the contemptuous opinion which the enemy had conceived of this our war-institution.

The Landsturm is the levy *en masse* of all men, between the ages of seventeen and forty-two years, capable of bearing arms, who are not already serving in the Line or Landwehr. It is not organized in time of peace, and, if ever its levy became necessary in war, would represent the supreme, patriotic effort of the people for the defence of their country.

The central authority for the administration and organization of the Prussian Army, properly so called, is

THE PRUSSIAN WAR-MINISTRY.

It comprises all branches of the administration, and is the executive organ of all decisions regarding it from His Majesty the King. Saxony and Hesse have their own war-ministries,

The relations which the Prussian war-ministry maintains with them, as well as with the corresponding authorities in the other States of the Confederation, have already been referred to.

The wide field of business of this central military authority, and the diversified nature of the matters entrusted to its care, have necessitated its subdivision into two principal departments, the general war-department and the commissariat-department, as well as into several sub-departments. The two principal departments are administered by special directors (generals and lieutenant-generals), and the sub-departments by staff-officers (with the rank of regimental commanders), who act independently, within certain limits, in the branches of administration within their sphere. Certain sub-departments are directly under the orders of the minister of war, as for example the section for personal affairs which have to be submitted to His Majesty. The minister of war is the centre of this grand organism, and the mainspring of its wide-extended activity. The central department (the ministerial bureau) is under his immediate orders; it distributes the business coming in, and transmits the determinations and the orders of the minister to the departments concerned.

We have not space here to give a complete exposition of the whole organization of this grandiose State institution, and to enumerate singly the infinitely numerous affairs which belong to its province. It will be sufficient for the object of this work to point out the most important. They are as follows:—

The General War Department comprises the whole organization of the Army; the relations of the service generally; mobilization; recruiting; exercises of the troops (including musketry); military legislation and justice; schools and educational establishments, together with boards of examination; military chaplains; sanitary service (hospitals, military surgeons, and veterinary surgeons); the fabrication and preservation of war matériel, such as ordnance, small arms, and ammunition (artillery workshops, rifle and powder factories, gun foundries); the main-

tenance of fortresses and construction of new fortifications ; the military police, etc.

The Military Economy Department (the functions of which are indicated by its title) comprises : expenditure in all its branches, such as the fund for soldiers' widows, invalids, pensions, and medicinal concerns ; the administrative part of hospital affairs and remounts ; the pay, provisioning, and clothing of the troops ; garrison administration, provision and forage magazines, etc.

The *Intendances* are placed under the orders of the economic department, but are allotted to the larger combinations of troops (Army Corps and Divisions) for practical service. They control in a measure as provincial authorities, the military economy within the limits of the command of the district. Delegated members of the Intendance are present at the annual administrative inspections, which take place for the purpose of certifying the quantity and quality of all articles of regimental equipment for a war footing (arms, clothing, raw material, carriage matériel, harness, etc.), and of verifying the condition of the cash accounts.

The war-ministry is therefore, as it were, a vast workshop, where the arms of the State—that is, the means of defence of its political rights and of its national honour—are forged and sharpened. The whole world has had ample opportunities of judging of the manner in which the Prussian war-ministry fulfils its important functions. The organization of the Prussian Army, and with it that of the North German Confederation, is, one may say, exemplary. It has raised the defensive strength of the country to a height which is not attained by any other great European State. In order to be convinced of this, it is only necessary to recall the great and rapid development of the forces in 1866. But, above all, to consider the experiences of last summer,¹ and the events which are still before our eyes. Surprised in the normal conditions of peace by a perfidious declaration of war, our people saw its Army ready for taking the

¹ Written towards the end of 1870.—*Translator.*

field with a rapidity truly marvellous. In a few weeks the military forces of the Confederation, with all its Army Corps, including those who were dispersed upon the most distant eastern frontier, hundreds of thousands of soldiers, were transported to its extreme western frontier; and so completely equipped and ready for battle, that, after uniting with their South German Allies, the enemy who challenged them could be sought out in his own country, instead of its being necessary to await his attack. At the same time, the extended sea-coast of North Germany, which was threatened by a disembarkation force, was defended by troops; and, in a very short space of time, newly formed Reserve Corps followed the army. All this was done, we may say, with methodical promptitude, and without any adverse friction in the working of this large complication of war machinery. Sometimes twenty to two-and-twenty large trains of soldiers left the Berlin railway termini *in one day*. And, nevertheless, all the forces of the country were not exhausted. The Prussian and North German people have, in fact, cause to regard the marvellous organization of their military forces with gratitude, whilst they can contemplate their warlike performances with proud satisfaction.

The rapid development of the North German forces is principally owing to the Army having its Army Corps already formed in time of peace, and so organized that each includes the corresponding proportion of all arms. Sections of the troops of each Corps being, with few exceptions, distributed in the district occupied by the Corps, the men required to complete the effective war strength can be called up in the shortest time; and, moreover, the mobilization, for which every preparation to the minutest detail is made beforehand, can be effectuated with very little delay, as their depôts of matériel are found in the same district. This excellent organization will, therefore, have greatly influenced the final result of the war with France; all the more so because the French organization is, in this respect, incomparably less practical. This organization, in time of peace,

only admits of territorial divisions of troops, but no combinations forming an organized whole. Corps are not formed until war breaks out; the detachments destined for them and their equipment are then drawn from almost all the departments—an evil which entails much loss of time, marching and countermarching, and great confusion upon the railways. This explains how it was that the complete concentration of the French Army upon the Rhine and the Saar was outstripped by that of the adversary. The Emperor Napoleon was consequently obliged to abandon his original offensive plan of operations, and to leave to the German Army Direction, from the commencement, the advantage of the strategic initiative—an advantage which was turned to account with as much boldness as vigour. It may therefore be said, that the French were beaten by the Germans in organization before the first shot was fired. Thus our frontier countries were spared a hostile invasion, which, although it might not have been of long duration, would nevertheless have been ruinous enough to the country.

We must here notice, in anticipation, an organized innovation which, in a special degree, has been the object of great attention in the North German Army; for it is interesting, and perhaps is not yet sufficiently known by a portion of the public. The subject in question is the Field-Telegraph and Field-Railway service.

The great inventions of modern times—railways and electric telegraphs, which permit the exchange of ideas by land and through the sea almost as quick as thought, and which, so to speak, make both time and space disappear—have long been used in military operations as means of transport and of communication. Naturally, in these respects, they are of unusual importance in time of war. The railways enable troops to be concentrated upon fixed points in nearly as many days as it would formerly have taken months to attain the same result. Take, for example, the transport of the First Prusso-German Army Corps, with its artillery, horses and matériel, from Königs-

berg to the French frontier. Railways have in this way done much for humanity, by bringing wars earlier to a crisis, and thus to an earlier conclusion. But also in the course of the war, the telegraph and railway lines, found on the scene of action, are utilised. As, however, it might become impossible to make use of them should the enemy destroy them, or should they pass by fortresses in his hands, the war-ministry is enabled, in some measure, to surmount these difficulties by re-establishing the destroyed lines, or by the construction of new ones. The anticipation of this necessity has led to the special organization spoken of—the field-telegraph and field-railway sections, which indeed are only embodied in case of war, but whose formation is fully prepared in time of peace.

A sketch of the regulations for these sections will be given further on. It may here be remarked that they have a military organization, and are placed under the command of officers. Special officials of these branches are furnished by the ministry of industry and commerce as well as by the general telegraph direction. A certain number of railway engineers are likewise attached to the field-railway sections; and further, detachments of special troops are assigned to them, who have been previously exercised for the work.

These special organizations already came into use on the Prussian side in 1866. Owing to the destructive character stamped on the present war by the acts of the French enemy, these services have, on this occasion, been much more important. The line of rail from Remilly to Pont-à-Mousson, $4\frac{1}{2}$ (about $20\frac{1}{2}$ English) miles in length, proves among other things what they are capable of performing. This was constructed at the commencement of the war for the purpose of turning Metz when that fortress still barred the line from Saarbrücken to Paris. This work, in spite of all kinds of difficulties of ground which had to be surmounted, necessitating the opening of deep cuttings, raising embankments and the construction of bridges; and although it was further necessary to construct a wooden viaduct

over the whole width of the Moselle valley (on the system of the Pacific railway), was nevertheless completed in forty-two days.

Our troops are, as is known, exercised in peace time in embarking in railway carriages, as well as in lading trains with guns, carriages, and horses, in order that all this may be done with the utmost saving of time, and the greatest economy of space. It can be imagined that the departure by train of a mounted troop (cavalry, artillery or train), with its matériel, alive and dead, would require far more time and space if a certain amount of routine was not brought into play in the operation.

CHAPTER II.

THE GENERAL STAFF AND AIDES-DE-CAMP (*Adjutantur*).

THE General Staff of the Army of the North German Confederation, composed of about ninety officers of all ranks, comprises two sections, viz. the so-called Head Quarter (*Grosse*) Staff, which is assembled at Berlin, about the person of the Commander-in-Chief, and the officers assigned for practical service on the staff of superior authorities, such as general commands, divisions, inspector-generals of artillery, etc. This division, however, in no way implies two separate categories with regard to their employment. It is solely of a business character. In time of peace, the duty of making preparations for war falls upon the Head Quarter Staff, who collect the material necessary for as thorough a knowledge as possible of the important military points of ground, means of communication and transport (main roads, railways, and their capabilities, etc.). This knowledge should not be limited to their own territory, but extend to the neighbouring countries which might become the theatre of war; and the general staff should also be instructed in the military forces and organization of other States, as well as in the peculiar manner of fighting of their troops. To this end it is divided into three sub-sections (termed the *Kriegstheater*) under special chiefs. The current publications, and the officers attached to embassies, serve to supply the necessary information. Moreover the officers of the staff make expeditions abroad, incognito, which not only enable them to study and reconnoitre points of military importance, but also the state and situation of railway

lines, in so far as they are of military consideration. These expeditions are therefore secret reconnaissances in peace time.

The General Staff is in connection with the Head Quarter Staff; the officers belonging to it, in common with those of the Head Quarter Staff, form

The military history branch.

The bureau for the triangulation of the country, which institution is in connection with similar ones in foreign countries.

The topographical bureau, for making maps of the country, especially for military use.

The geographical and statistical section.

Staff officers, appointed for the practical service of superior military commands, are to assist the commandants in the numerous branches of their duties. Thus the staff of general commands and of divisions prepare plans of march and dispositions for the peace manœuvres, in accordance with the instructions of their chiefs, and find out beforehand country adapted for the purpose. In war the same duties devolve upon them—reconnaisances of positions, plans of strategical and tactical dispositions, &c.

The General Staff consequently represents, to a certain extent, the intellectual principle of the Army in a heightened degree. And if, as we have said, the war-ministry forges the arms of the country, the staff takes a prominent part in directing their aim. It is therefore comprehensible that the officers of the General Staff should be subjected to a careful selection. All arms take part in the competition, and those officers only are admitted into the institution who possess a sound, scientific, military education, combined with intelligence and the gift of rapidly seizing the ideas of their chiefs and transcribing them in a clear and concise form; officers who, uniting with these qualities a quick eye for tactical points of country, are, above all, practical men. The staff might, indeed, employ *savants* round a table, but these would be of no use in the open field, and still less so in war.

One can understand further that the position of the head of this institution is of eminent importance. The Chief of the Staff of the Army not only selects his officers, but also determines the most favourable method for their further intellectual development; and it is he especially who conducts and superintends their whole education. It is he again who, in case of war, has the most important task, of drawing up the general strategical sketch of the plan of operations, which he then submits for the examination of the general commanding in chief. The post of chief of the staff of a large army, therefore, demands intellectual and military endowments far above the common level.

The custom has lately been introduced in the Prussian Staff of transferring officers, who have completed some years of active service on the general staff, to their former corps for a term of practical service—a successful measure, which prevents staff officers from becoming estranged to the troops, and familiarises them with their requirements; in a word, keeps them up to the mark as practical soldiers.

The travelling exercises of the staff, which a certain number of officers of all grades make annually, under the direction of their chief, to a country selected for the purpose, assist their military education in an extraordinary degree. Acting upon the assumption that two armies are operating against one another under appointed conditions of war, the officers fulfil the duties which would devolve on them, during war, upon the Staff of the Army, of corps and of divisions. That these practical exercises should be of extraordinary utility for the comprehension of the tactical importance of country, can easily be understood, for they take place on the actual ground, and allow the remarks and instruction of the chief who directs them to be made on the spot.

We will speak later of the higher institutions intended to prepare officers for service on the staff, as well as of the travelling exercises of the staff, which are carried out nearly every year by the chiefs of the Staff Corps, or other superior staff officers appointed for the purpose, with a number of the officers going

through a course at those institutions, or who otherwise show special qualifications. It appears superfluous to speak of the results of the rational and careful method of educating the Prussian Staff. The present moment exhibits them to the whole world. *Facta loquuntur.*

Non-military men often hold wrong ideas of the rôle of the chief of the staff of a large division of the Army, especially of the nature of his relations with the Commander-in-Chief in time of war. They think that his first duty is to act as an adviser to his chief, and even that he officiates as the proper strategical agent at Head Quarters. This is *not* the case. The Commander-in-Chief is the deciding principle; he alone bears the responsibility. His chief of the staff is nothing more than his first assistant, the principal organ for communicating his individual will to the troops, and if the chief of the staff sketches a plan of operations, or the dispositions for a battle, he does not give his own ideas, but those of his commander. The position of a chief of the staff is, no doubt, a most important one. He has even to represent his chief under certain circumstances, but he then only acts according to the intentions and upon the principles imposed by the latter. These relations do not prevent the general commanding from sometimes desiring to learn the opinions and views of his chief of the staff, and even of adopting them; but it is then a voluntary act of confidence in the intelligence of his subordinate. The history of wars no doubt shows that certain generals, otherwise very capable, do not unite *all* the qualities required for so high a mission, and that a chief of the staff has been placed beside them who was capable of supplying precisely the qualities in which they were deficient. One can recall the combinations, Blücher—Gneisenau and Radetzky—Hess. But these are exceptions to the normal rule.

It may not be out of place here to give a simple exposition of the meaning of the scientific military terms—*Strategy and Tactics.*

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Strategy (literally, science of generals) has in theory, for its object, the principles for the chief direction of armies in the field. Practically, the sketch of the plan of operations (of the campaign), in its broadest features, is due to it; that is to say, the general disposition for the employment of large bodies of troops towards a given end. It further determines the strategical formations for battle (*Aufmarsch*), *i.e.* the positions which the different portions of the Army are to occupy, in order to await the attack of the enemy, or from whence they are to advance to the attack in a given direction (the line of operations). In both cases, in the defensive as well as in the offensive, the operations are supported upon a base, that is, upon one or, when possible, more fortresses, which are destined to receive the retreat should it become necessary; therefore, in carrying out operations, it must be an object of consideration, that the communications with the points of support are never lost; or, in other words, that the retreat is never cut off by the enemy. In the present war, for example, the fortresses of Saarlouis and Germersheim in the first line, and the large fortified places, Mayence and Coblenz, in the second line, formed such points of support for the offensive of the German forces; whilst Strasburg, Metz, and the numerous small fortresses in Alsace and Lorraine, would have rendered similar service to the adversary had he been allowed to make the attack. When the plan of operations is based upon the offensive, the different portions of the army march from their original positions, and advance by the lines of operation, either separated or converging towards some predetermined point according to the objects of the plan, in order to attempt a decision of arms with the greatest possible force at a given moment. It is strategy's chief task so to dispose its operations as to be able to appear upon the decisive spot with a numerical superiority. The decision of arms now, and all the actual fighting, belong to the domain of tactics. Strategy consequently points out the right roads which lead to the battle; it ordains *when* and *where* the fighting is to take place. Tactics teach the

right employment of the arms in the actual battle; it ordains *how* the fighting is to be carried out.

This distinction will be elucidated by a short glance at some of the examples furnished by the later European wars.

In 1866, conformably to the Prussian plan of operations which led to the battle of Königgrätz, the Army of the Crown Prince debouching from Silesia struck upon the Austrian right flank, and even upon their line of retreat, and thus decided their defeat. The disposition for this march was of a strategical nature. Had General Benedek succeeded, by a victorious battle, in repulsing the Army, he would have completely surmounted the dangers of his position (so bad in a strategical sense) by a tactical success.

The march, by means of which the 2nd German Army (Prince Frederick Charles') crossed the Moselle at Pont-à-Mousson in the August of the present year,¹ for the purpose of surrounding the French Army, under Marshal Bazaine, near Metz, and of cutting off its communications, especially with the fortress of Verdun, is a strategic operation. The battles resulting from it on the 16th and 18th of August, which prevented Bazaine's escape, held him fast, and finally threw him back into Metz, are tactical occurrences which secured the success of the strategical plan.

Bazaine's strategical maladroitness in remaining in a position near Metz, where his retreat was endangered, led to a second similar fault in French generalship. In order to deliver his companion in arms from his enclosed position, Marshal M'Mahon undertook his almost adventurous march upon Sedan, in which he exposed himself to the danger of having his retreat cut off, and of being driven on to Belgian territory. The German war direction discerned this error, and profited by it. The 3rd Army (the Crown Prince of Prussia's) was made to break off the operations upon Paris and direct itself upon Sedan. The march thither of this army bore a strategic character. The battles,

¹ 1870.

however, which terminated in the French Army being driven into Sedan and there enclosed, belong to the domain of tactics.

What fatal consequences were entailed by Marshal Bazaine's *single* strategical fault! The pages of French history, which record the capitulations of Sedan and Metz, will be edged with mourning for perpetuity.

Strategy and tactics, which go hand in hand, as illustrated by the examples quoted above, are the great factors for deciding questions of political rights between States, who, as a last resort, appeal to the sword. In war a good strategic position favours tactical efforts; it heightens the advantages to be drawn from victory, and obviates, as much as possible, the evil consequences of defeat. But the best plan of operations—and to this belongs, for example, the separation of the different portions of the enemy's forces, so that they can be attacked in detail with superior numbers—fails in its object if the tactical result does not respond to it; that is, in case of a defeat. In the same way also a tactical success—a victory—can rescue from the most critical strategic position. A successful campaign, therefore, depends mainly upon victorious combats.

By the term *Disposition* is understood the arrangements for employing the troops in battle. Its relation to tactics is, therefore, what the plan of operations is to the wider domain of strategy. The disposition indicates the general conditions under which the fighting is to take place, and the special object to be fought for. It determines the distribution of the troops and arms according to the different tasks which they have to fulfil; the formation in columns, and the positions to be occupied, according to whether the action is to be for attack or defence. And it does not neglect to make dispositions beforehand for the retreat. The details of execution, and the special resolutions which become necessary in the course of the fight, are the business of the subordinate leaders, but always with the fundamental idea of the disposition kept in view. Again the disposition determines the *order of battle*; that is, the general distri-

bution of large bodies of troops into advanced guards, main bodies, reserves, and corps (*Treffen*); at first without regard to the object of the fight, in accordance with which the order of battle can then be modified.

The *Aides-de-Camp* (*Adjutantur*) are, similarly with the general staff, appointed to assist the commanders of forces and other chiefs in their functions. For this branch of the service, and especially for the higher aides-de-camp—those acting with the authorities—officers are necessary who are endowed with intelligence, are acquainted with business routine, and have a thorough knowledge of their duties. The 'adjutantur,' moreover, comprises the personal aides-de-camp of His Majesty the King (General and 'Flügel' adjutants), those of the royal princes, of the princes of the Confederation, and of high military dignitaries.

CHAPTER III.

PEACE FORMATION OF THE NORTH GERMAN ARMY.

A. THE STANDING ARMY.

I. INFANTRY.

	Regts.	Batts.
(a) Regiments of 3 Battalions, the first two of which are called, as a rule, Grenadier and Musketeer Battalions, and the third Fusilier Battalions :		
<i>Prussia</i> , including the Garde (4 Garde Foot Regiments, 4 Garde Grenadier Regiments, 1 Garde Fusilier Regiment), 12 Grenadier, and 11 Fusilier Regiments.	97	291
<i>Saxony</i> , with 2 Grenadier Regiments, and 1 Fusilier (Rifle) Regiment	9	27
<i>Mecklenburg-Schwerin</i> (with the incorporated Battalion of the Strelitz Contingent) 1 Grenadier, and 1 Fusilier Regiment	2	6
<i>Oldenburg, Brunswick, Anhalt, Saxe-Weimar, Saxe-Altenburg</i> (with Rudolstadt and the two Reuss), <i>Saxe-Meiningen</i> , and <i>Coburg-Gotha</i> , 1 Regiment each	6	18
(b) Regiments of 2 Battalions :		
<i>Hesse</i> , with one Leib Grenadier Regiment	4	8
	118	350
(c) Jäger:		
<i>Prussia</i> , with the Garde-Jäger, and the Garde-Schützen Battalion belonging to the category of Jäger	0	13
<i>Saxony</i> and <i>Hesse</i> , 2 Battalions each	0	4
<i>Mecklenburg-Schwerin</i>	0	1
	118	368

THE peace-strength of the five senior Prussian Regiments of Guards amounts to 22 officers and 678 men per Battalion; in the remaining Regiments of the Confederate Army to 18 officers and 526 men. To this must be added the Regimental Staff, comprising 1 commandant, 1 fifth field officer, and 1 aide-de-

camp. Thus each of the five Regiments of the Guards numbers 69 officers and 2,101 men, and all the others 57 officers and 1,607 men (exclusive of musicians). Each Regiment has besides 6 doctors and 3 paymasters (*Zahlmeister*). The strength of the Jäger Battalions is 22 officers and 526 men.

All the Regiments and Jäger Battalions, with the exception of the Prussian Guards and the Hessian troops, bear numbers which run consecutively through the Army up to 108 for the Regiments and to 16 for the Jäger Battalions; in addition to which they take provincial denominations from the recruiting districts in Prussia, and relatively from those States of the Confederation which, like Saxony, furnish a whole Army Corps or strong contingents. The regimental numbers, 97, 98, 99, are for the moment still vacant. These numbers may be destined for the Grand-Ducal Hessian Infantry, whose 4 Regiments of 2 Battalions will, it is expected, be formed into 3 Regiments of 3 Battalions, with a view to attaining the necessary uniformity throughout the whole of the Infantry of the Confederate Army; whilst, on the other hand, the two Hessian Jäger Battalions will be reduced to one. In this way the Hessian Infantry would retain its original strength of 10 Battalions.

The 12 Prussian Grenadier Regiments (Nos. 1 to 12) do not differ from the other Infantry Regiments of the Line as to their recruiting and manner of fighting. The appellation is merely in honour of their antiquity. The senior of them, which has H.R.H. the Crown Prince for its chief, bears the date 1619 upon its helmets, in commemoration of the accession of the Grand Elector, under whom the Standing Army was raised in Brandenburg. Many other Regiments are also distinguished by names and tokens, derived from trophies and honours assigned to them. The name of a chief is a distinction which honours the chief equally with the Regiment. The 9th Grenadier Regiment is called the Colberg Regiment in commemoration of its defence of Colberg; for the same reason the 8th Regiment since that time has borne the name of the Leib Regiment. The 7th,

whose chief is His Majesty the reigning King, is called the King's Grenadier Regiment. The 33rd Regiment has the war-minister, Von Roon, for its chief, and the 9th General von Moltke. The Brandenburg and Pomeranian Hussars are named, after their celebrated chiefs, the Zieten and Blücher Hussars. The Grenadier Guard Regiments, Alexander and Francis, were raised on the 14th of October, 1814, by Frederick William III. in honour of his two Imperial allies.

The 14 Fusilier Regiments (to which category the Saxon Rifle Regiment, No. 108, also belongs), and the Jäger Battalions, including the Prussian Rifle Battalions of Guards, are considered as Light Infantry. They do not carry bayonets, but at close quarters fix the short sword. The rifles with which the Jäger are armed has a finer sight. These troops also have additional musketry practice, which branch of military education in the Infantry of North Germany is conducted in the most careful manner and upon the most rational principles, the results of which have proved themselves so excellent in the campaign of 1866 and in the present war. The Prussian Jäger Battalion of Guards has the advantage of being composed of royal forest-keepers, and there are also a great number of practised marksmen in the ranks of the other Battalions, owing to their special recruitment. One consequently finds among Jäger troops not only more dexterous shots, but also men thoroughly accustomed to traverse woods and broken ground, and therefore excellent material for Light Infantry duties, such as advanced posts and patrols. It may yet be remarked that, until lately, these troops were considered solely as an arm of defence, and were almost exclusively employed for specially important points in defensive positions, and for the occupation of localities. The enlightened views of the present day, however, have fortunately set these troops free from the restricted notions which placed them behind the rest of the Infantry. Although the Jäger are still employed by preference on Light Infantry duties, as given above, in which their superior skill in shooting can produce its full effect, yet

they also take part in the attack like the rest of the Infantry, and are no longer excluded from the duty of charging the enemy like them, and have thus gained an increased tactical importance.

The term Light Infantry, as applied to the Fusiliers, in no way excludes these Regiments from taking their place in the general line of battle, and equally little does it imply that the rest of the Infantry is of a heavy character. With the exception of the Jäger Corps, the difference between Heavy and Light Infantry has been almost effaced by the exigencies of modern tactics. All the North German Regiments being exercised and instructed upon precisely the same principles, and their composition being essentially the same, every Battalion is fully capable, as far as the men are concerned, of acting as Light Infantry; that is to say, of manœuvring in the smallest fighting bodies of the arm (company columns), as well as of undertaking security and intelligence services (outposts, advanced-guards, reconnaissances, etc.). The difference between Heavy and Light Infantry is little more than nominal.

It is well known that the Infantry of North Germany is supplied with the Dreyse (breech-loading) needle-gun, of Prussian invention. It is very effective against columns at 800 paces, and allows 5 shots or more per minute. Adopted in the Prussian Infantry since the year 1849, it has brilliantly justified its reputation both in the Schleswig campaign and especially in that of 1866, so that all the previous prejudices against this arm disappeared, and all the Powers hastened to give their Infantry breech-loading rifles of various constructions. The French Chassepôt rifle, which excites especial interest at this moment, is grounded on Dreyse's system. Compared with its original—the needle-gun—it shows several essential defects, but nevertheless possesses the advantages of a somewhat quicker fire and a lower trajectory, which gives it accuracy of aim at a great distance. But, since the efficacy does not depend solely upon the implement, but also upon the man who carries it, in the

present war the needle-gun, in the hands of German marksmen, has always proved superior in its results to the Chassepôt as soon as the enemy came within range.

Moreover, it was intended by some improvements to give the needle-gun the advantages of the French rifle. (It is even assumed that the Emperor Napoleon hastened his attack against Prussia with a view of anticipating this change.)

The general adoption of breech-loading (rapid firing) arms, possessing at the same time greater precision of aim, has given a more important rôle to Infantry in the tactics of the present day, and an increased employment to skirmishing fighting.

II. CAVALRY.

The North German Cavalry comprises 76 Regiments of 5 Squadrons each, making altogether 380 Squadrons.

	Cuirassiers	Dragoons	Hussars	Uhlans	Reiters	Total
<i>Prussia</i> , including the Cavalry of the Garde (the Regiment of Garde-du-Corps, 1 Cuirassier Regiment, 2 Dragoon Regiments, 1 Hussar Regiment, and 3 Uhlans Regiments)	10	18	17	19	...	64
<i>Saxony</i> , including the Garde Reiter Regiment . . . . .	...	...	...	2	4	6
<i>Mecklenburg-Schwerin</i> . . . . .	...	2	...	...	...	2
<i>Oldenburg</i> . . . . .	...	1	...	...	...	1
<i>Brunswick</i> . . . . .	...	...	1	...	...	1
<i>Hesse</i> , including the Light Horse of the Garde . . . . .	...	...	...	...	2	2
	10	21	18	21	6	76

One of the five Squadrons of each Regiment does not take the field, but remains behind in garrison as the recruiting Squadron of its Regiment. It is also destined to exchange its own serviceable horses with those designed for casting, or which are still unbroken, belonging to the four Squadrons taking the field.

The formation of a fifth Squadron per Regiment, for this purpose, dates from the year 1866. In the campaign of that year our Cavalry learnt, by sad experience, that horses bought at the last moment to complete the Squadrons, being unable to bear the work and means of nourishment to which they were unaccustomed, for the most part soon became useless. This evil has been remedied by the formation of a fifth Squadron.

The strength of a Cavalry Regiment of five Squadrons, including the Staff—the colonel, 1 second field officer, and 1 aide-de-camp (adjutant)—is 25 officers and 697 men, with 672 troop horses, exclusive of the officers' chargers. It has 1 paymaster and from 2 to 5 doctors, according to the number of its garrisons.

The Cavalry Regiments are numbered in the same way as the Infantry, but separately, according to the different categories (Cuirassiers, Dragoons, Reiters, etc.), and they are provided with provincial denominations.

The men selected for Cavalry service, as well as the volunteers, from those States of the Confederation which do not furnish a contingent of that arm, fulfil their term of service in the Prussian Regiments occupying the nearest garrisons.

In the Cavalry there is a more decided distinction between heavy and light (each according to its vocation), than in the Infantry, and the recruiting is carried out conformably both in a physical and, as much as possible, in an intellectual point of view; the horses are also selected with the same object. Heavy Cavalry are equipped especially for fighting in close ranks, and for the overpowering pressure of the masses; and although Light Cavalry is also fit for, and even employed in this kind of fighting, yet it is by preference entrusted with those duties which require especially expert horsemanship, quickness, and intelligence; thus all the branches of security and intelligence service, inroads, etc. They are armed with rifled, breech-loading carbines, which not only serve for signalling and for mounted fire-action (*Flankiren*)

against the enemy's Cavalry, but, in the absence of Infantry, render them capable of taking their place, although certainly only as a provisional means. In the present war, a Squadron of Hussars, having dismounted, took a village by assault with the carbine and at the point of the sword, though it was occupied by a numerically superior detachment of the enemy's Infantry.

The Cuirassiers are decidedly Heavy Cavalry. To classify the Uhlans positively under the same category, as is sometimes done, appears quite incorrect. They are rather an intervening step between the two kinds of Cavalry, for this arm (though in fact really heavier) is abundantly employed in Light Cavalry duties. Some Ulan Regiments, in the present war, which penetrated into France at the head of our Army columns, had opportunities of rendering themselves most useful in this kind of service, and caused the whole race of Uhlans to be specially feared by the enemy. The Dragoons and Hussars are decidedly Light Cavalry, only distinguished from one another by their name and uniform, whilst there is no difference in their equipment or duties. The Saxon and Hessian Reiter Regiments also belong to this category.

It has yet to be remarked that our Cavalry is excellently mounted, thanks to the influence which, for nearly a century, the State studs and numerous private ones (especially in East Prussia, Mecklenburg, and Hanover) have had upon the breed of horses, by crossing the Arabian with English blood. The cavalry horse of North Germany has breeding; is good-looking, active, fast, and enduring, and is perfectly broken. The Prussian Cavalry, as far as the horses are concerned, proved itself superior to the Austrian and even to the Hungarian Cavalry in 1866; and the French Cavalry—with the exception of the Garde and Algerian regiments, which are mounted on Arabian blood—cannot bear the remotest comparison with our German Cavalry in regard to their troopers and horsemanship.

III. ARTILLERY.

Although the cannon is the arm of all Artillery, yet the diversity of object and manner of employment, as well as the different kinds of guns dependent thereon, and the various modes of serving them, have necessitated a different instruction for the men, and a division of all into two categories: Siege-artillery and Field-artillery, which last is again divided into Foot and Horse-artillery, the latter provided with mounted gunners. This division, however, only concerns the men of the corps, and not the officers. The Artillery officer is not destined for one only of the categories mentioned above, but rather for employment in either of them, and is educated accordingly. He is, as it were, a universal Artilleryman (*artilleristisch-universell*).

Field-artillery, as its name indicates, is destined for contest in the open field. Siege-artillery is appointed for the artillery defence and bombardment of fortresses.

Field-artillery.

The Field-artillery of the Army of the Confederation is armed throughout with 6 and 4-pounder rifled breech-loading ordnance. Their oblong shells with oval points contain a bursting charge, and explode on striking in the midst of the enemy; their principal effect lies in the scattered splinters. They also fire case-shot and shrapnel. The latter likewise contain a bursting charge. But their effect does not depend so much on the scattered splinters as it does on the small bullets enclosed in them, which are showered upon the enemy at the moment of bursting. The shrapnel has, therefore, the advantage of producing the effect of case-shot at a great distance.

In time of peace, for the sake of economy, the Field-artillery battery has only four guns horsed; and in time of war six. The 4-pounder batteries are intended more for action where mobility is required; the somewhat heavier 6-pounders (whose material efficacy is greater), for stationary fighting (positions) and those artillery tasks in the field which demand a greater exhibition of

strength, such as subduing redoubts, the destruction of barricades, buildings, etc. The difference of calibre in the two, both as regards mobility and material efficacy, is not so great but that each is completely fit for employment in any of the objects indicated. The 6-pounders can also undertake the bombardment of small fortresses ; this, however, is quite an exceptional case.

A mobilized battery has, in addition to the guns, six ammunition waggons, one or two provision waggons, one field forge, etc.

Foot-artillery, considered generally, is destined to support the action of Infantry ; Horse-artillery, which only carries 4-pounder guns, to support that of Cavalry ; or it is allotted to the Artillery Reserve, because its greater rapidity enables it to reach, in the shortest time, such points of the battle-field, where, in the course of the fight, guns or reinforcements are needed.

The North German Field-artillery, including the Prussian Guard and Saxon Field-artillery, consists of 13 Regiments, which, in accordance with the Army Corps to which they belong, bear numbers consecutively from 1 to 12, and also like them a provincial denomination. In addition to this there is one division of Hessian Field-artillery.

	6-pounder Batteries, Foot-artillery	4-pounder Batteries, Foot-artillery	4-pounder Batteries, Horse-artillery	Total of Batteries	Number of Guns.
The Prussian Field-artillery Regiment numbers 3 Foot Divisions, each of which contains two 6-pounder Batteries and two 4-pounder Batteries, and one Horse Division with three 4-pounder Batteries. The Regiment has therefore fifteen Batteries, and the whole Prussian Artillery .	72	72	30	180	720
The Saxon Field-artillery Regiment contains four Foot Divisions, with a total of eight 6-pounder Batteries, six 4-pounder Batteries, as well as a Horse Division with two 4-pounder Batteries	8	6	2	16	64
The Hessian Field-artillery Division	2	3	1	6	24
Strength of the North German Field-artillery	82	81	39	202	808

The Battery being made up in war to 6 guns, the North German Army is able to bring 202 Batteries with 1,212 guns and 29,000 gunners into the field.

The Artillery Contingents of the two Mecklenburgs (one Foot division complete), of Oldenburg (one 6-pounder and one 4-pounder Foot Battery), of Brunswick (one 6-pounder Foot Battery) are incorporated in the Prussian Regiments, and comprised in the effective state given above. The men selected for the Artillery in the other States of the Confederation, are placed in Prussian Regiments.

The *personnel* of a Regiment of Field-artillery, with its regimental and divisional Staff, consists of 85 officers, 8 surgeons, 2 or 3 veterinary surgeons, 1 paymaster, and 1,655 men, with 696 draught and riding horses. The Saxon Field-artillery Regiment, which has one more Battery (in peace time), is somewhat stronger.

Siege-artillery.

The Siege-artillery comprises 1 Regiment of Guards, 8 others of 2 divisions each and 3 single divisions; these are all Prussian, and bear numbers and names analogous to the Field-artillery. There is further 1 Saxon Division (No. 12). Consequently, as the Division consists of 4 companies, the North German Siege-artillery has 88 companies. The strength of a Division with the Staff is 19 officers, 2 surgeons, and 400 men; that of a Regiment including the Staff, 45 officers and 800 men. To the regimental and divisional Staff belong also the *personnel* of the Laboratory department, upon whom is imposed the duty of fabricating ammunition for the Field and Siege-artillery Regiments belonging to the same Brigade.

Whilst the principal objective of Field-artillery is the enemy's troops, the vocation of Siege-artillery, especially in the attack of fortresses, necessitates an incomparably greater material display of strength. Although it has sometimes to be employed against troops, yet its principal task is a concentrated fire upon solid

masonry and strong ramparts, and the destruction of bomb-proof places, blockhouses, batteries, &c. It is therefore natural that Siege-artillery should be provided with more powerful ordnance. We will only here instance the 6, 12, and 24-pounder rifled guns, the 6 and 12-pounder smooth-bored guns, and smooth-bored mortars from 7 to 70-pound in calibre. Mortars throw hollow round shot filled with a bursting charge (bombs) at a high trajectory, which act destructively both by their penetrating power in falling, and by the force of the explosion. Heavy mortars, therefore, endanger stone-covered powder magazines.

Until the present time, no Army had applied the system of rifling to mortars. The initiative of this progress, which gives an exceeding increase of precision to the fire, and will, it is foreseen, gradually cause the smooth-bored mortars to be completely superseded, rests with the Prussian Artillery. Although this recent invention is for the moment still in a trial stage, yet, in the siege of Strasburg, there have already been some instances of the employment of rifled mortars of heavy calibre with excellent results. These mortars, loading at the breach, could throw their heavy shells to a height, occasionally, of 3,000 feet. One can therefore imagine what the effect of the striking power would be.

The North German Confederation possesses a Prussian siege train for siege operations, composed of the ordnance and *matériel* necessary for attacking the strongest fortress. It is divided into three sections, which are quartered, in peace time, in Magdeburg, Wesel, and Coblentz. The whole collection of guns, etc., required for a siege, taken from the effective of the train, is called the siege park.

The Marine-artillery is nearly allied to Siege-artillery. It may be appropriate to remark here, that this is not intended, as some might be led to suppose, for ships of war, but rather for the service of coast batteries and other fortifications constructed for the defence of ports and maritime establishments, against

an attack from the sea front. The service of ships' guns, which especially requires a nautically practical eye, is the affair of the navy. Marine-artillery, therefore, does not belong to land warfare; its field of action is the sea.

For the higher concerns of Artillery organization, such as dealing with technical questions, improvements, etc., there are permanent institutions composed entirely of officers of that arm, namely, the *General Artillery Committee* and the *Artillery Experimental Commission*.

We have still to mention the *Laboratory section*—which does not belong to any of the above-quoted bodies of Artillery, but rather to the whole arm—and the officers of the arsenal, who are also taken from the Artillery. The first—2 companies strong, and stationed at Spandau—manufactures those artillery stores which demand special care in their fabrication; light and explosive rockets, fuses for shrapnel shells, fuses for infantry cartridges, etc. The arsenal officers who are stationed in the fortresses, under the artillery officer of the place, are charged with the care of the guns and other arms stored in the arsenals.

For the information of the reader, space may be found for the following remarks:

The Artillery term *battery* has a twofold signification, one of which is of an organic character.

The smallest subdivision of Field-artillery, consisting of a certain number of guns and waggons for ammunition, etc., with the men and horses belonging to them, is called a battery—like the squadron and company of the other arms. Also in the field, a line of guns formed up for action is generally designated by this name. In siege operations, a battery means a breastwork constructed of earth gabions and fascines, and in general furnished with embrasures, to protect the guns placed behind it, and the serving troops from the enemy's fire, especially that of his Artillery. These batteries, however, must not be confused with *entrenchments (redoubts)*, which belong to field fortification. The latter are earthworks of the same kind, but

strengthened by ditches, palisades, and other obstacles to a near approach, which should not only secure the Artillery and Infantry occupying them from the effect of the enemy's fire, but should also be able to resist an attack by assault. The Artillery construct their own batteries. Entrenchments, which in the field enable important points to be held with advantage, or weak ones to be strengthened, are constructed by the Pioneers with the assistance of Infantry, under the direction of engineer officers.

The term *calibre* also requires explanation. By this is understood the measure of the transverse section of the hollow space inside the barrel of the gun, through which the shot passes, and which is called by gunners the *soul* (*Seele*). The terms 4-pounder, 6-pounder, etc., as applied to batteries, is not however to be understood as signifying the weight of the shot in pounds. These terms have been used from the earliest times, when solid round shot of the corresponding weights were placed in the (smooth-bored) guns thus designated, and have been incorrectly continued in the artillery nomenclature of the present day. The long projectiles of modern rifled ordnance are somewhat more than double the weight which the calibre named indicates. It may be assumed that these incorrect appellations have occasioned the royal order for the 4 and 6-pounder batteries to be no longer designated by these names, but to be distinguished as light and heavy batteries, and the calibre of the guns to be, in general, indicated by metric measurement. According to this, the calibre of the 4-pounder would amount to 8 centimètres, that of the 6-pounder to 9-centimètres, and so on. In this work the old denominations will be retained, as being for the moment more popular.

And now still a few words on the introduction of the rifled breech-loading system into our Artillery.

Besides the material efficacy of rifled ordnance, the explosion of their projectiles exercises a great moral effect upon the enemy. Their aim is more exact, and they carry their shot incomparably

further than the smooth-bored guns (now withdrawn from all Field Artillery) carried their solid shot. The Prussian 4 and 6-pounders carry nearly 5,000 paces. At such remoteness, which renders it impossible to judge the distance correctly, they are, however, only used against large objects; whilst their accuracy of aim (even up to 2,500 paces) and capability of striking small columns of troops, is excellent. It is just the same with the larger calibres. A rifled 24-pounder throws its heavy projectile 8,000 paces and more, and is therefore especially appropriate for the bombardment of fortified places—certainly very large objects of aim.

The accuracy of aim of our rifled guns is essentially increased by loading at the breech, which obviates all windage in the barrel. To this is added an excellent system of fuses; *i.e.* the contrivance for igniting the bursting charge in the shell, by which its explosion at the striking of the shot is almost completely insured. It is from these advantages that the German Artillery has displayed such decisive superiority over the French in the present war, which superiority has been acknowledged even by the enemy himself. The French guns are muzzle-loaders; their aim is less exact, and their system of fuses leaves much to be desired. The French shells explode at appointed distances (time-fuses), so that, unless the enemy happens to be at one of the distances at which only they can be regulated, they burst either before or behind him. The furthest exploding point is at 3,000 mètres.

Smooth-bored guns are more efficacious for case-shot than rifled guns; but they do not carry so far. In spite of this, a certain number of these pieces (12 and 6-pounders) have been retained in the fortresses, to rake the short lines of the rampart ditch with case-shot, but especially for the defence of a breach against an assault.

In the campaign of 1866—so glorious for the Army—the Prussian Field-artillery did not attain in all cases that efficacy which was in full conformity with its intrinsic value. The

reason for this was partly its having to appear with two-fifths of the guns as yet smooth-bored against the excellent Austrian Artillery, already composed, without exception, of rifled guns, and partly owing to unfavourable conditions of the fight as well as to local difficulties of movement, the removal of which did not lay within the power of the arm. All the greater, then, is the satisfaction which our Field-artillery, in concert with the sister arm of our German Allies, can feel in the results attained in the present war. It has contributed, in a high degree, to the grandiose successes already obtained, and has proved that it stands completely at the summit of the Artillery vocation. In the same way German Siege-artillery has had the opportunity of displaying its formidable power,—especially, alas! owing to the severe but inexorable laws of war, against a place with a German population.

IV. THE ENGINEER CORPS AND PIONEERS.

The Corps of Engineer officers has a twofold mission; the whole service of fortifications, which comprehends the inspection, maintenance, and new construction of works, as well as the command and instruction of the Pioneer Battalions, placed under its command for siege and field operations. The last-mentioned duties are administered by the engineer of the place, assisted by a certain number of officers; he has also, in case of a siege, to conduct the technical works. In an attack upon a fortress, the senior engineer officer, who happens to be present with the Army, performs the same duties.

The special Prussian Corps of Engineers is divided into the Staff, to which the higher offices belong, and into Inspections, which comprehend the subalterns. These two categories furnish the inspectors and officers required for the different duties indicated above, in which these officers are changed about.

The Pioneers—the officers of which are taken from the Engineer Corps—are not properly a tactical body but a technical

one, *i.e.* a body of troops appointed for the execution of such building and numerous other technical works, as become indispensably necessary in war. Although they are not organized for combat, yet their rôle in war is none the less important, and is one also of no less danger than that of other troops. They are very frequently obliged to execute their works, exposed to the efficacious fire of the enemy, and with passive endurance. They are also charged with mining operations, the most terrible warfare of its kind.

Since the Pioneers may find themselves in situations where they must make use of arms to defend themselves, they carry the Infantry rifle besides their technical implements. In the campaign of 1866, some companies of Pioneers joined to the columns of troops had an opportunity of taking an active part in the Infantry action.

In a technical point of view, the men of each Pioneer Battalion are divided into pontoniers (for the construction of bridges), and Sappers and Miners (for siege operations above and below ground). The Pioneers are, moreover, charged with the construction of field fortifications (redoubts) and the placing of villages, etc. in a state of defence, by erecting barricades, piercing loopholes in the walls of the houses and gardens, etc. They also render essential assistance to the Infantry, under opposite circumstances, at the capture of such localities, by the removal of any barricades and the destruction of walls: all under the enemy's fire. A brilliant example of this took place at the storming of Le Bourget (30th of October, 1870). Their duties also include the formation of obstacles to impede the enemy's march, such as abbatis, the destruction of bridges and roads, etc.; and, in antagonistic circumstances, the removal of the same obstacles in favour of their own troops. Finally, they furnish the men required for the technical service of the field-telegraph and field-railway. The rôle of the Pioneers is therefore very comprehensive.

The Army of the North German Confederation has 13

Pioneer Battalions of four companies each, 12 of which (1 of Guards and Nos. 1 to 11) are Prussian, and 1 Saxon (No. 12). These are distributed among the 13 Army Corps, and bear the numbers corresponding to their Corps with the familiar provincial denomination. In addition to these is the Hessian Pioneer Company. The strength of a Pioneer Battalion including the Staff, is 18 officers and, in round numbers, 500 men. The Pioneers are recruited preferably from trades corresponding to their technical vocation, such as carpenters, miners, boatmen, etc.

In the present war (notably during the difficult siege of Strasburg) the Prussian and German Engineer officers and Pioneers have exhibited in the fullest measure their efficiency in their departments. According to abstract calculations, based upon the knowledge of the duration of sieges, the attack of a large, strong fortress, like Strasburg—armed with numerous pieces of all descriptions, and surrounded by wet ditches—which is also firmly defended, is reckoned to last from six to eight weeks from the opening of the first parallel to the formation of the breach. At the siege of Strasburg two breaches were laid, and both were practicable in little more than four weeks. The other arms, especially the Artillery, naturally had their due share in this brilliant result. But the chief merit belongs to the engineer, who has to determine, in such a war problem, the basis of the whole attack, namely, the choice of the attacking front, and the laying out of the parallels and works generally. The siege of Strasburg will hold a prominent position in the history of siege operations.

The labours of the Pioneers before Metz were equally important, and demanded as great efforts. Here they had to throw up entrenchments in front of our lines, and to construct extensive hut-barracks for the troops.

It may be remarked at the same time, that there are also sections of Pioneers in the Infantry Battalions formed from the men who, in default of regular Pioneers, execute the more simple

works with the tools which the troops always carry with them—hatchets, axes, picks, and shovels—so-called trenching tools.

The permanent committee of Engineers, composed of the chief and superior officers of the Corps, which meets daily at Berlin under the orders of the inspector-general of Engineers, is of great importance. It decides the necessity of new works of fortification, orders their construction, and examines and publishes new technical inventions and improvements.

5. THE TRAIN.

The Train comprises all the transport service of the Army under military organization, for columns of ammunition, pontoons, provisions, field-telegraph, field-railway, field-hospital, etc., and thus provides for the indispensable necessities of an army in the field. It further provides drivers for baggage-waggons, cart-ridge-waggons, and other conveyances for mobilized troops. The men who groom the horses of mounted officers of all ranks are taken from the Cavalry Reserves. The Train soldiers are armed for their defence in the same way as the Cavalry.

The Army of the Confederation numbers 13 Battalions of Train, corresponding with the 13 Army Corps, and bearing the same numbers, etc. Every Battalion consists of 2 Companies, each of which has 12 officers and 225 men, 121 saddle and draught horses, and 24 waggons. To this must further be added the Hessian Train detachment.

B. THE LANDWEHR.

The States belonging to the North German Confederation, as well as the whole of the Grand Duchy of Hesse which is joined to it in its military system, are divided into Landwehr battalion districts, with a small paid *depôt* to each: the commander of the district, the adjutant, the other office *personnel*, the district sergeant-major, the captain of arms, etc. The district is

named after the quarters of the depôt. The duties of the commander are, in short—

1. To keep in a fit state, in case of mobilization, the whole of the clothing, armament, and military equipments, stored in the Landwehr arsenal, which are for the Landwehr Battalion of the district.

2. To carry out the levy of recruits for the Land forces and Marines under the presidency of the brigade commander concerned, and in combination with the civil officials appointed for the purpose ; also to keep the lists for the control of all the men of the district on furlough, according to their different categories (Guards, Line, and the different arms).

3. To serve as the organ for calling in the men of the district to their Divisions of troops ; also for procuring the requisite service horses at a mobilization, and to conduct the formation of the Landwehr Battalion belonging to it. The district command is not mobilized, but remains behind at the permanent quarters for the purpose of continuing these functions, as far as they are necessary during the war.

The Corps of Landwehr officers is supplied from those officers who are withdrawn from the standing Army, but are still under the age liable for service, and are not invalided ; and such one-year Volunteers as are selected and nominated as officers after passing the examination. The Reserve officers, who are likewise borne on the strength of the Landwehr, form a special category. At a mobilization they are intended to complete the Officers' Corps of the Regiments of the standing Army, in place of those active officers who are ordered off to the Landwehr, and usually in those Regiments in which they have fulfilled their service liability as one-year Volunteers, and by which they are selected and proposed for this destination. These Reserve officers are called out nearly every year for some weeks' service with the troops to which they belong. In case of special need the other Landwehr officers can also be ordered into the line at

a mobilization. In peace they only take practical service when the Battalion is collected for manœuvres, which generally take place once in three or four years.

As a rule, the post of district commander and adjutant are held by Staff officers and subalterns of the standing Army who are still disposable.

With a view to recruitment, a Landwehr Regiment of 2 Battalions, or a Landwehr Reserve Battalion, corresponds with each Line and Fusilier Regiment of the Army of the Confederation, and bears the same number and the same provincial denomination. The Grand Duchy of Hesse forms an exception to this rule, having at present only the *cadres* of 2 Landwehr Battalions. The 4 Prussian Guard Landwehr Regiments, which recruit in a similar manner to the Guard Corps, have no special territorial districts, but each consisting of 3 Battalions is provided with men from the whole of the Landwehr force, who have fulfilled their active service in the Guards. This amounts in Infantry to

	Batts.
4 Landwehr Regiments of Guards of 3 Battalions	12
93 Provincial Landwehr Regiments of 2 Battalions	186
12 Reserve Landwehr Battalions	12
2 Hessian Landwehr Battalions	2
Total	212

The Landwehr Cavalry is formed into 1 or 2 Regiments for each of the 12 Army Corps of the Line, as it appears to be necessary. It thus amounts to 12 or 24 Regiments, according to circumstances. The Guards Corps forms no Landwehr Cavalry. The men of this arm who have passed into the Landwehr enter into the category of the provincial Landwehr troops of their district.

There is no Landwehr Artillery formed into Corps. The artillerymen who have passed into the Landwehr serve, at a

mobilization, for the augmentation of Siege-artillery, and furnish gunners for the formation of Reserve Foot Batteries.

The same conditions apply to the Landwehr Pioneers, from whom Siege Pioneer Companies are formed.

Likewise, in case of war, the Jäger and Riflemen in the Landwehr are formed into companies called Landwehr Jäger, or Rifle Companies.