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Colonel v. Lobell's Annual Reports upon the Changes and Progress in Military Matters during 1884

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COLONEL v. LOBELL'S¹ ANNUAL REPORTS UPON THE
CHANGES AND PROGRESS IN MILITARY MATTERS DURING
1884.

By Lieutenant-Colonel H. HILDYARD, Highland Light Infantry..

THE eleventh annual number of Colonel v. Löbell's valuable publication is not behind its predecessors in the variety or interest of its contents. As was the case with the Reports for the year 1883, there have been few important changes to chronicle in the organization of the armies belonging to the greater military Powers.

Germany.

It would almost seem, indeed, if we are to judge by the small space given to the subject by v. Löbell, that the German Empire has arrived at so high a stage of perfection in the matter of military organization and administration, as to admit of little improvement. Several of the few pages devoted to the German Army are occupied with a record of the numerous changes which took place last year in the higher commands, the losses of distinguished Officers by death, and the changes in the distribution of troops in garrison.

In the obituary may be noticed General Herwarth von Bittenfeld, who distinguished himself in 1864 by the capture of Alsen, and two years later commanded the Elbe Army in the campaign in Bohemia. With the sole exception of the Emperor, he could boast of having the longest service of any Officer in the German Army, his commission as Lieutenant dating two years prior to that in which the battle of Waterloo was fought. The services of General v. Wittich, whose death is also recorded, were of a more recent date. As commander of the 22nd Infantry Division in October, 1870, he played a most important part in connection with the attempted relief of Paris by the French Army of the Loire. In that war, of constant marching and frequent engagements, few Generals had the opportunity of acting independently in the manner that fell to the lot of v. Wittich, and by his capacity and energy he succeeded in influencing notably this portion of the campaign.

Seeking perfection in other subjects than organization, the Prussian War Office has determined to modify the existing patterns of helmet, knapsack, and minor details of equipment, with a view of lightening the burden which has to be carried by the soldier in time of war. The importance of this consideration was clearly shown in the war of 1870—71; and that the introduction of any change has been postponed so long, may probably be attributed to an objection on the part of the army to any change in the uniform and equipment that had been identified with so many hardly contested fields.

Competition in design for the several articles is sought for by the offer of substantial prizes varying from 1,000 to 300 marks, which are to be awarded to the patterns fulfilling the combined conditions of lightness, comfort, superior design, and durability. The competition is strictly confined to those belonging to the army and its reserves. With a view to ensuring the attainment of one of the principal objects in the contemplated changes, it is notified

¹ Jahresberichte über die Veränderungen und Fortschritte im Militärwesen. 11 Jahrgang, 1884, herausgegeben von H. v. Löbell, Oberst z. Disp.—Berlin, Ernst Siegfried Mittler und Sohn. 1884. Pp. 533; size, 9.5" x 6.5" x 1"; weight, 1 lb. 14 oz. Price 8s. 6d.

that any patterns submitted of the helmet, knapsack, water-bottle, or 1 boots (a second pair, not for marching) which are not appreciably lighter than the existing ones will not be considered at all.

It is not without interest to note the measures taken in the German Army for the training of the Landwehr and Reserve troops; for to the regularity with which this is carried out is to be attributed the efficiency of the army on mobilization. Such efficiency cannot possibly be attained to, and cannot be expected in an army in which the system of a small peace effect and a numerous reserve force is adopted without any provision being made for the regular periodical training of the latter.

The Landwehr and Reserve were called up for a period of twelve days including the day of joining and departure; but it is in the power of the General commanding or other superior Officer to retain men of the reserve for twenty days where it appears desirable. The Ersatz Reserve is retained on the first occasion of being called up for ten weeks, on the second for four weeks, and on the third for a fortnight only.

The numbers of the several arms and branches of the Landwehr and Reserve called up, including non-commissioned officers and hospital attendants, were as follows:—

	Prussia.	Bavaria.
Infantry	93,450	} 13,800
Rifles	2,700	
Field artillery	6,300	900
Garrison artillery	6,100	900
Pioneers	2,500	} 360
Railway regiment	450	
Train	5,046	720
Total	116,546	16,680
Grand total	133,226	

The following table gives the numbers of the Ersatz Reserve trained:—

Specification.	1st Exercise.	2nd Exercise.	3rd Exercise.
Infantry	13,338	8,320	7,520
Rifles	360	280	220
Garrison artillery	1,100	900	760
Pioneers	700	500	—
Total, Prussia	15,498	10,000	8,500
Total, Bavaria	2,500	1,500	1,200
Total, Germany	17,998	11,500	9,700
Grand total	39,198		

Belgium.

The necessity for reorganizing the existing system of militia service has been long recognized. By the law in force the contingents of eight years, numbering each 12,000 men, form the active army. But in support of this, no reserve is available, and it has been the effort of successive governments to inaugurate such a scheme as would meet the requirements from a military point of view, and be at the same time acceptable to the country. The task has not been found to be an easy one, and it has led to the settlement of the question being constantly postponed, to the detriment of military efficiency.

Since the striking events of 1870 the "Attack Formation" has had a remarkable fascination for the compilers of drill-books, which has not been even yet exhausted, simple and well known as the principles would seem to be upon which such formations must be based. The system adopted for a battalion by Belgium, and contained in a Provisional Instruction, issued in February last year, may be briefly described as follows:—

Upon the battalion first coming under artillery fire at a maximum range of 4,000 m., it is to be formed in a line of company columns. Each company has a small flag of a different colour, to facilitate marching and serve as a rallying point. The battalion has also a flag which is placed in the centre and serves to keep the direction towards the object of attack.

On entering the dangerous zone of the enemy's artillery fire, which in open ground will be 3,000 m. at the utmost, the battalion forms for attack. The two companies destined for the advanced line form a line of subdivision columns, three to each company. The remaining two companies form the reserve of the battalion.

The subdivision columns of the advanced line deploy, so as to cover the whole front, and after advancing 400 paces they will be disposed in the following manner:—

1st. A first echelon, composed of eight scouts per company, forming two patrols, each led by a non-commissioned officer.

2nd. 200 m. behind these the advanced line formed by the subdivision columns.

Upon reaching the zone of effective musketry fire, at about 1,400 m. from the enemy's position, the following attack formation is adopted:—

1st. The chain of scouts formed as above.

2nd. The advanced line embracing—

(a.) At a distance of 200 m. four sections of skirmishers, being the advanced sections of each of the subdivision columns with the company and battalion flags.

(b.) At 200 m. interval, the line of supports composed of the four rear sections.

(c.) 200 m. in rear the line of company reserves, consisting of the two subdivision columns not included above.

3rd. 400 m. further back are the two remaining companies which form the battalion reserve.

In covered ground these intervals may be so far reduced that the depth of the formation does not exceed 500 m. The battalion moves forward in this formation until the enemy's musketry fire becomes serious, which will be at about 700 m. The line of scouts is now reinforced successively by the chain of skirmishers and the supports moving into it, care being taken not to mix up the subdivisions.

The further advance is then conducted by means of the alternate rushes of companies or, exceptionally, of subdivisions. This advance is continued until the firing line arrives within 300 m. of the enemy's position, the reserve com-

panies closing on it in the meanwhile, so that when halted the right company will be 150 m., the left 300 m. from it. Rapid independent fire then for a few minutes, the right reserve company moves up into the firing and the left is kept in hand to act as required ready to meet a counter attack to hold the position taken or to cover an eventual retreat.

The principle here adopted of keeping the companies and subdivisions as far as possible unmixed is no doubt the correct one. But it is open to doubt whether the numerous successive lines is a wise arrangement; for the more sure to fire from the depth of the formation will be greater than in a single one with a less number of lines having more men in them.

Brazil.

The course of events during the last few years has brought into prominence the military forces and organization of numerous States, regarding which little had been previously known. This was notably the case in the case between Chili and Peru, and though at the present moment there does not seem to be any prospect of the armed forces of Brazil being called into requisition, the account of them given by von Löbell for the first time may possibly come to be of considerable value.

By the law of 1875 universal obligatory service was inaugurated, comprising a period of six years with the colours and three in the reserve.

The men required are taken by lot, but substitutes are allowed, and, in fact, of late years a sufficient number have been forthcoming voluntarily for the annual requirements.

The strength of the army in time of peace is 13,528, exclusive of Officers and it is in course of being raised to 15,000.

On a war footing this number is about doubled, and is distributed among the several arms as follows:—

30 battalions infantry of 4 companies.....	18,360
10 regiments cavalry of 4 squadrons	5,920
4 regiments field artillery of 4 batteries	2,024
4 battalions of 6 batteries	2,280
1 battalion pioneers of 8 companies	465
6 sections train.....	600
1 company sanitary troops	51
Total.....	29,700

The infantry is armed with the improved Comblain rifle; the cavalry the Winchester carbine and Lefauchaux revolver; the artillery with Krupp and Whitworth guns.

The law further makes service in the National Guard obligatory up to the age of 40; but beyond the Officers this force has at present no actual existence.

The first ban of the National Guard, as organized on paper, is composed as follows:—

Infantry.....278 battalions; 14 half-battalions; 97 companies.

Cavalry114 corps; 10 companies.

Artillery 11 battalions; 9 half-battalions; 15 companies; 1 section.

The reserve consists of 79 battalions; 114 half-battalions; 97 companies and 57 sections.

Besides the regular forces of Brazil there are a number of military colonies established on the frontier, and providing for a cordon, as a protection against the raids of the adjacent Indian tribes.

Bulgaria.

The national movement continues to be in the ascendant, and notwithstanding the presence of a Russian prince as War Minister, the influence of Russia is still on the decline. This has not prevented General Prince Kantakuzen from helping forward by every means in his power the development of the newly-formed army, which has undergone an extensive reorganization, so far as the infantry is concerned.

The formation of this arm was until last year that of independent *Druschinen* (or battalions), of which there were twenty-four. These have now, by order of October last, been formed into eight regiments, each of three battalions:—

1	Regiment (Prince Alexander), Headquarters, Sofia.	
2	„ (Stramsky)	„ Küstendil.
3	„ (Bdinsky)	„ Widdin.
4	„ (Plevna)	„ Lovtscha.
5	„ (Danube)	„ Rustchuk.
6	„ (Tirnova)	„ Tirnova.
7	„ (Preslau)	„ Schumla.
8	„ (Primorsky)	„ Varna.

The peace establishment of the battalion has been raised to 700 men, and the war establishment fixed at 1,000, which gives a total infantry force of 16,800 and 24,000 respectively. To provide for the increase on the peace establishment, 1,000 men have been added to the contingent of recruits.

Sufficient men have further been provided for twenty-four reserve battalions by shortening the term of service with the colours in the years preceding 1884, by which means an abnormally large number have been passed to the reserve.

When the formation of a Bulgarian army was first undertaken by Russia, the whole of the Officers from company commanders upwards were Russians. A movement has now been set on foot for providing the company commanders from Bulgarian Officers, and nearly half of those serving at the beginning of this year were of that nationality.

The approximate strength of the armed forces was on that date as follows:—

Distribution.	Peace.	War.
Infantry	16,800	24,000
Cavalry	1,400	1,400
Artillery	1,560	2,160
	(4 guns per battery)	(8 guns per battery)
Field artillery company	180	180
Engineer battalion	880	880
Train column .....	..	2,000
Total	20,820	30,620
Reserve formations .....	..	24,000
Landsturm .....	..	6,000
Total .....	..	30,000
Grand total of forces available in time of war .....	..	60,620

Chili.

The experiences of the war with Peru in 1879 created in Europe a special interest and sympathy with the Chilean Army, which was shown to possess many soldierly qualities. Recruited from the original Indian population, the men composing it display in action much native pluck and dash, though they are not found easy to deal with in the matter of discipline.

The active army is maintained by means of voluntary enlistment with a bounty of 20 dollars. The National Guard is based upon obligatory service.

The infantry is composed of 10 battalions, having a total strength of 9,040 men, armed with Belgian Comblain rifles, and in the Valparaíso arsenal arms are available for a force of 60,000 men.

The artillery consists of 2 regiments, one of which has 3 brigades of 2 companies, and the other 5 brigades, 4 of field artillery and the fifth of coast artillery for employment in the forts, each brigade consisting of 2 batteries. The total strength is 2,202 men. It is armed partly with Krupp and partly with Armstrong guns.

The cavalry is limited to three regiments, one of Grenadiers, one of Rifles and the third of Carbineers, with a total strength of 1,500 men. The number is small considering the facilities offered for the formation of this arm by abundance and high quality of the native horses, and the skill in horsemanship of the natives themselves, which admit of cavalry being utilized to the utmost. It would consequently be simple to increase the strength of the arm considerably.

The regular army numbers on its normal establishment—

Infantry	9,040
Artillery	2,202
Cavalry.....	1,500

Total..... 12,742, exclusive of train and other departmental services.

The National Guard has been reorganized since the war, and is composed as follows:—

1. Infantry.—36 battalions each of 833 men, with the exception of 1 in Santiago and 1 in Valparaíso, each of 1,246 men. Besides these, there are 25 infantry brigades of 419 men and 7 companies of 207 men, formed for the defence of certain territories in Arauco.

The battalions are each formed in 4 companies except the stronger ones which are of 6 companies. The brigades are each of 2 companies.

The total strength of the infantry is 43,151.

2. Artillery.—This arm is composed of 1 regiment of 937 men in Valparaíso, and 14 artillery brigades of 419, each of 2 companies.

The total strength is 6,599 men.

3. Cavalry.—12 squadrons each of 173 men, the whole of which are drawn from the province of Arauco, numbering in all 2,076.

The total strength of the National Guard is 51,826.

During the war with Peru and Bolivia, a considerable number of infantry battalions, brigades of artillery, and squadrons were mobilized, and took the field in all respects under the same conditions as regular troops, and as early as May, 1883, twenty-nine corps were still embodied and in garrison in Peru and on the frontier of Bolivia, and in Arauco.

France.

A large share of space in the "Reports" is devoted to the French Army

which besides being, as is natural, a subject of pre-eminent interest to the military world in Germany, claims, from the numerous and often radical changes effected in it each year, no ordinary share of general attention.

Some progress has been made with the development of the scheme for the formation of a colonial army and the amalgamation of the African troops, adverted to last year.¹ The Bill, as then drafted, has been modified in some particulars as regards the African forces for the occupation of Algeria and Tunis. For instance, the 4 rifle battalions find no place in the formation; the Algerian tirailleur regiments are to be each of 6 battalions in place of 4; only 4 disciplinary companies are included, in place of 5; a tenth section has been added to the departmental troops, and some companies of gendarmerie are provided for. The reserve to this force is to be composed, as originally intended, of 8 newly-formed Zouave battalions and 4 batteries, which are to be augmented in case of need by native troops and by the foreign legion.

Colonial Army.

The special colonial force which it has been decided to create under the same scheme for the occupation and defence of other French colonial possessions has been fixed as follows:—

8 regiments of marine infantry, each of 4 battalions and 2 dépôt companies.

1 regiment of Annamite tirailleurs of 4 battalions of 4 companies.

2 regiments of Tonquin tirailleurs, each of 4 battalions.

1 regiment of Senegal tirailleurs of 2 battalions and 2 dépôt companies.

2 companies of Indian sepoys.

2 companies of colonial disciplinary troops.

2 regiments of artillery, each of 14 batteries—3 horse and 11 foot—1 company of artificers, and 1 company of Senegal drivers per regiment.

The colonial troops and their reserves are recruited from volunteers out of the yearly contingent who are engaged for the purpose, and re-engaged men. The whole of the non-commissioned officers and men receive a bounty of from 200 to 300 francs, a rate of pay double the ordinary amount, and after fifteen years' service they are entitled to civil maintenance and a grant of land in the Colonies.

The great advantage of such an organization lies in the fact that it is intended to obviate in the future, when the system shall have been brought into working order, the necessity of employing any of the home troops upon minor expeditions beyond the seas, the serious inconvenience of which has been so frequently experienced by France of late years.

Recruiting.

The number attaining the legal age for the 1883 class was 312,924, being 3,235 more than in the previous year. Of these 139,269 were taken. The remainder were accounted for as follows:—

Dispensation granted on account of being the sole support of family.....	49,428
Dispensation granted provisionally.....	31,292
Fitted for military auxiliary services.....	15,561
Postponed	38,589
Physically unfit	38,784
Not reported at the proper time	7,997

¹ No. CXXVI of the Journal R.U.S. Inst., page 813 *et seq.*

There were besides 17,398 voluntary engagements, of which 5,795 were the navy, and there were also 5,152 volunteers for the foreign legion, Algé tirailleurs, Spahis, and Tunisian mixed companies.

The number of re-engagements was 3,391, being an increase of 672 that of the previous year.

The contingent was divided as follows :—

	1st Portion.	2nd Portion.	Total.
Class of 1883	92,835	38,481	131,316
Put back in 1882....	8,507	2,627	11,134
„ 1881....	3,993	792	4,785
	<hr/> 105,335	<hr/> 41,900	<hr/> 147,235

These were allotted to the several arms and formations as follows :—

	1st Category.	2nd Category.	Total.
Line regiments	57,959	28,945	86,904
Rifle battalions.....	4,903	862	5,765
Zouave regiments.....	1,359	....	1,359
Algerian tirailleurs	100	....	100
African light infantry	3	....	3
Paris sapeurs-pompiers	—	—	—
Foreign legion	2	....	2
	<hr/> Total	<hr/> Total	<hr/> Total
	64,328	29,807	94,135

Cavalry—1st Category only.

Cuirassiers	2,221
Dragoons	4,756
Chasseurs	3,637
Chasseurs d'Afrique.....	535
Hussars	2,144
5 Remount companies	7
Cavalry schools.....	6
	<hr/> Total
	13,306

	1st Category.	2nd Category.	Total.
Artillery—			
Artillery regiments.....	9,367	6,472	15,839
Pontonniers	746	....	746
Foot artillery battalions.....	2,325	2,932	5,257
Artificers and laboratory companies.....	103	....	103
	<hr/> Total.....	<hr/> Total.....	<hr/> Total.....
	12,541	9,404	21,945

Engineers—			
Engineer regiments.....	2,007	612	2,619
20th Engineer Battalion	96	....	96
Railway company	80	....	80
	<hr/> Total.....	<hr/> Total.....	<hr/> Total.....
	2,183	612	2,795
Train.....	1,902	501	2,403
Administrative branches	2,502	400	2,902

Railways and Etappen Stations.

A General Direction for the entire etappen and railway services in the field was created by a Decree of the 7th July, 1884, and will supply what had previously been a serious omission in the organization of the communications for a mobilized army.

At the head of this service, under the Chief of the Staff, is placed a General Officer, with the title of "Director-General of Railways and Etappen," to whom is attached a special staff, a delegation from the superior Military Railway Committee, and a Director of Field Railways. In his hands is placed the direction of the entire etappen and railway services in the territory between the base of operations and the armies.

The base of operations is decided upon by the Minister of War at the commencement of a campaign, in concert with the General commanding the armies. The troops not belonging to the operating armies remain on French territory, and, so far as they are within the sphere of the General Direction, are under the orders of the Director-General, who gives his orders to the Territorial Commanders, and not direct to the troops except under pressing circumstances.

It is the duty of the Chief of the Staff to keep the Director-General informed of every operation undertaken or contemplated; but the latter is given complete independence as to the consequent measures to be taken by him. An important part of the Director-General's duties is to ensure complete co-operation of the railway and etappen officials of the several armies with general headquarters, and with the War Office Railway Committee, and also to keep in communication with the heads of the artillery, engineer, and administrative services, so as to be able to meet their requirements in the arrangement of the railway service. He has also the special duty of regulating the relation of the several railway and etappen officials to one another, the allotment of the lines to the several armies, the selection of the principal etappen stations, and the limitation of the territory in rear of the several operating armies from which they shall respectively draw their supplies.

To each army is appointed a General as Director of Etappen, who is under the Chief of the Staff of that army, and has attached to him an Officer of the General Staff, of artillery, and of engineers; a detachment of military police, and officials of the intendance, civil administration, and etappen troops. His place is with the Army Headquarters, or a day's march in rear, but without interfering with the functions of the communications.

Where an army is operating independently, a General Officer acts as Director of Railways and Etappen, and has attached to him a delegate from the superior Military Railway Committee, and a Direction of field railways in addition to the staff specified above.

The publication of the foregoing Decree, and the experiences gained of late years regarding the subject of military transport, led in October, 1884, to the substitution of new regulations for the transport of troops by rail in place of those of July, 1874. The first part of these relates to ordinary movements by rail, and the entraining and detraining of men and horses in time of peace. The second part is divided into three sections, treating of the arrangements for military railway transport in time of war.

It is stated in "*La France Militaire*," No. 336, that it has been calculated at the War Office that, on a double line of rail, an infantry division, with its trains, can be despatched in $1\frac{1}{2}$ days, and that a similar time is required for a cavalry division. An army corps without train would occupy $4\frac{1}{2}$ days, and with train $7\frac{1}{2}$ days. Reckoning the rate of locomotion at 25 kilom. an hour, an army corps could be entrained, moved 90 kilom., and detrained, in nine days.

The provisional Instructions of 1878, regarding the *etappen* service, replaced in August, 1884, by new ministerial regulations. The task of *etappen* service is to secure the communications with the base, to carry the transport by road and water, and to prepare for all the requirements of the army in the zones lying behind the sphere of operations.

The *etappen* lines run sometimes together with the railway lines, and close co-operation between the officials of the two branches is consequently indispensable. The *etappen* lines leading from the advanced stations of railway lines to the army are under the undivided control of the *etappen* Directions acting under the Director-General of Railway and *Etappen* L. There is one of these allotted to each army, the duties of which are to regulate the transport by road and waterways; the defence, occupation, maintenance, construction, and in case of necessity the destruction of the lines and of the postal and telegraph lines; the distribution, employment, supply of the troops allotted to the lines; the situation and supply of magazines, and the control of the civil administration in the territory occupied by the *etappen* Directions. To each of these is allotted the *etappen* Staff, the *etappen* command, the civil officials, the artillery command—a head of which is the Director of the Army Artillery Park; the engineering command of which the Director of the Army Engineer Park acts as commander; the intendance with its attached columns, field bakeries, and *depôts*; the Direction of the sanitary service; the *gendarmérie*; the postal and telegraph services for the *etappen*.

The duties and sphere of action of each of these officials and formations are carefully defined in the regulations, to which are attached a table giving details of the *personnel*, which seems amply sufficient in number.

Telegraphs.

A Decree of the 23rd July, 1884, introduced a new organization of military telegraphs in war and peace. The entire technical *personnel* placed at the disposal of the War Office by the Ministry of Posts and Telegraphs is to receive a military organization, and to enjoy in time of war all the rights of regular troops. After the mobilization has been commenced, none of the officials of these services may resign without the permission of the Minister of War.

The *personnel* will be divided into two portions:—

1st. For the telegraph service with the army who will be allotted to divisions with the Directions, the sections with the first line, the telegraph parks, *etappen*, railway and fortress sections.

2nd. For the territorial service. The telegraph service with the army, independent army corps or divisions, is placed under the Chief of the *etappen*. The *personnel* is recruited from that of the Ministry of Posts and Telegraphs, whether they have already satisfied the obligation of military service or not, or from such officials of the above as have already done three years' service in the military telegraphs, and to these are added such as may be attached to the army.

From the commencement of the mobilization they form an integral part of the army, to the laws and regulations of which they are in every respect subject.

The several grades and posts allotted to them are as follows:—

Director of Telegraphs	ranking as	Lieutenant-Colonel.
Sub-Director	„	Major.
Head of sections	„	Captain.
Assistant do. of sections	„	Lieutenant.

Head of posts	ranking as	Sub-Lieutenant.
Telegraphist	"	Adjutant.
Head of equipment	"	Maréchal des logis.
Head workman	"	Brigadier.
Workman	"	Private.

With a view to the organization of the telegraph service in time of war, a superior official of the Department of Posts and Telegraphs is accredited to the General commanding each military region. The whole service has its point of centralization with the General Staff of the War Minister, to which is attached a committee composed of superior officials and Officers of all arms, for the purpose of advising on questions connected with military telegraphy.

The several branches of the military telegraphs are inspected annually by a General Officer; but the Minister of Posts and Telegraphs is responsible for seeing by periodical surveys that the *personnel* as well as the *matériel* is maintained in proper working order. The whole of the *personnel* receives during peace time military instruction and such technical training as may be required. The War Office provides the officials and formations with the necessary transport, and arranges with the Postal Department regarding the furnishing and maintenance of the *matériel* and equipment. All the necessary measures for a rapid mobilization of the Directions, sections, and parks, as well as for the practice in the telegraph service, are to be arranged beforehand in each region by the Chief of the Staff and the superior telegraph officials attached to the command.

The uniform of the artillery is worn with a distinguishing badge consisting of a star surrounded by lightning rays, which is worn by all on the képi, and by those officials belonging to the Directions on the collar.

The establishments of the several formations are as follows:—

	1 Section in 1st line.	1 Section in 2nd line.	A telegraph park.
Technical personnel—			
Heads of section.....	1	1	—
Assistant ditto	1	1	1
Heads of posts	2	2	—
Telegraphists	10	25	8
Clerks	6	4	2
Head workmen	6	2	3
Workmen	20	8	9
Orderlies .....	...	6	—
Detachment of train—			
Maréchal des logis.....	1	1	1
Brigadiers	2	2	1
Men	27	13	10
Vehicles	12	5	7
Horses	48	23	37

In time of war the *personnel* of the sections in the 1st line and of the parks may be increased by five telegraphists and ten workmen. Only the superior officials, including the heads of posts, are mounted.

The *personnel* of the General Direction and the Directions is distributed as follows:—

	General Direction.	Directions.
Technical personnel—		
Director.....	1	1
Sub-director.....	1	2
Heads of sections or posts.....	3	2
Telegraphists and clerks.....	21	2
Head workmen and workmen	10	—
Orderlies	2	3
Detachment of train—		
Officer .....	....	1
Non-commissioned officers and men	12	4
Vehicles.....	5	2
Horses	21	16

Pigeon Post.

Orders have been given for the establishment of central pigeon stations at Paris and Langres. These are to be formed on a basis for securing the communication for a period of six months between the more important fortresses. Paris is to be in communication with Mézières, Verdun, and Langres; and the latter place also with Belfort, Besançon, and Liège. None of these are at a greater distance from the place it is to communicate with than 285 kilometres, which should be covered by a pigeon in five hours.

Recruits for the working of these establishments are to be taken exclusively from men who before joining have belonged to a carrier-pigeon association, and they are to be posted to the 1st Regiment of Engineers at Versailles.

Infantry Annual Training.

A War Office circular of November, 1884, promulgated new regulations regarding the training of the annual contingent and the exercise of regiments after their incorporation in the ranks. The training year, which dates from the joining of the contingent to the close of the autumn manoeuvre, is divided for this purpose into five periods.

1st Period. 3½ months. Individual instruction of the recruit, drill squads and half sections; completion of the instruction of the old soldiers.

The training of the recruit embraces the individual instruction, guard duty, and preparatory exercises in musketry and gymnastics. The soldiers are formed into one or more drill companies, according to the strength of the battalion, and exercised in drill and field duties under the command of the commander, and are also practised in individual firing, the construction of field works, and in marching. The cadres are given special instruction during this period in firing, field duties, and company drill.

2nd Period. 1½ to 2 months. Section and half-company drill.

The recruits and old soldiers are drilled together during this period. During this training in gymnastics, musketry, and field duties is continued. To the subjects is newly added exercises in judging distance and in entraining heavy and loaded wagons, so that the men may have some acquaintance with the subject in the event of a mobilization taking place in the spring.

3rd Period. 1½ months. Company training.

The company is instructed in all branches of its duties. When the strength admits of it, each company is trained independently under its own commander.

der ; but where this is not the case, one or two companies are formed in each battalion, and trained under the direction of the battalion commander. Every week a march is to be executed, combined with field manœuvres.

4th Period. 1½ months. Battalion and regimental exercises.

The company is exercised in varied ground, battalion drill practised, and field duties by night. In case of necessity the several battalions of the regiment are formed into one. More than three days are not to be occupied in drilling the regiment in close order, and this is not to be done at all unless two battalions of at least 300 men each can be formed. Musketry is to be continued ; the attack and defence of fortified positions and field duties practised.

5th Period. One month, from the end of August to the end of September. Training of reserve men and manœuvres.

The company, battalion, and regimental exercises are repeated with reserve men in the ranks. Brigade manœuvres are practised in the field, and are followed by the manœuvres of larger bodies.

Supply of Ammunition in the Field.

Important instructions were issued on this subject in February, 1884. The supply of ammunition is treated under three heads, viz., the 1st line, the army corps, and the army reserves.

Ammunition with the 1st Line.

In the infantry each man carries 78 rounds, of which 36 in 6 packets are carried on the person, and the remainder in 7 packets in the pack. Non-commissioned officers carry only 36 rounds, on the person.

The artillery carry with the battery 150 rounds per gun.

A further supply is carried with the ammunition sections, of which there are 6 per army corps, viz., 4 for artillery and 2 for infantry, which immediately follow the troops and belong to the fighting train. These carry 142 rounds per man for the infantry and 200 rounds per gun.

One infantry and one artillery section is allotted to each infantry division, and the remaining two artillery sections to the corps artillery.

In addition to this supply, 16 rounds per man are carried with the baggage and ammunition wagons of the troops.

Total with 1st line 236 rounds per man.

 " " 350 " gun.

Army Corps Park.

With this are carried 33 rounds per man and 72 per gun. The park is divided into four sections, of which the first three are equally laden with small-arm and gun ammunition. The fourth carries the residue of the latter, also tools and material for repairs.

Army Park.

The formation is in five echelons, of similar composition, under a Colonel or Lieutenant-Colonel of artillery. The ammunition is packed in cases, and a portion of the 1st echelon is in wagons forming the transport division of the park. The 1st echelon is kept at the chief etappen stations ready for immediate use ; the 2nd and 3rd placed along the line of railway ; the 4th and 5th are kept in the first instance in the arsenals in the interior until it becomes necessary to push them forward.

The supply of ammunition to infantry in action is arranged in the following manner:—

The first reserve for the men engaged is drawn from the battalion ammunition wagon; but before recourse is had to this, the ammunition of the placed *hors de combat* should be distributed and used up. The wagon is replenished from the ammunition sections.

In action the wagons are grouped by regiments, the *dépôt* being marked by a yellow flag by day, and a lantern showing the same colour by night. The maximum distance from the front is not to exceed 1,100 metres, but in circumstances individual wagons may be pushed right up to the skirmish line.

Every favourable opportunity is to be utilized for completing the supply, which is effected in the following manner. Men are detailed from each company in reserve to carry the ammunition into the firing line by means of bags, twelve of which are part of the equipment of each wagon. Each of these holds sixty packets of cartridges. As a rule, one wagon is emptied before recourse is had to the other, and is then sent back to the rear to be replaced by a full one.

The supply of gun ammunition to batteries engaged is effected as follows:—

Each battery is divided into two portions; the fighting unit, composed of the six guns and a similar number of ammunition wagons, and the reserve, composed of the remaining three wagons and other vehicles.

As a battery approaches the position it is to take up, it leaves the three wagons in as sheltered a position as can be found, at a distance of more than 300 metres from it. These three wagons form the 1st echelon of the reserve; the rest of the reserve wagons form the 2nd echelon, and are placed 500 to 800 metres further back. The three wagons remaining with the guns follow them into the position, one of them being allotted to the section. As they are emptied they retire, and are replaced by full wagons from the reserve.

In the normal order of march of an army corps the ammunition sections follow immediately after the engineer park. On the field they take up a position 1,500 metres in rear of the troops they have to supply, the spot being distinguished in the same manner as that occupied by the regimental wagon. In case of an unexpected engagement the sections have to move up without awaiting orders, their arrival on the field being reported to the command of the divisions and of the army corps to which they are allotted.

As a rule, the corps park remains at a day's march in rear of the army corps. On the troops becoming engaged it is to be moved forward without awaiting orders. The four park sections move together, and the empty wagons are sent back to be refilled from the 1st echelon of the army corps situated from one to two days' march in rear.

Japan.

Under the instruction of German Officers the Japanese army has made very material progress of late years, and it has arrived at a condition which promises to make an important factor in the future destinies of the East.

Following the general development of the country in European ways and ideas, the military forces have been organized in an active, a territorial and a national army. The standing army is composed of 16 regiments of infantry (46 battalions), 10 divisions of artillery, each of 2 batteries (20 batteries and 1 foot artillery detachment, 10 companies of engineers, 1 train company, 3 half-companies and the bearer train, the telegraph corps, the gendarmes and Yesso militia, formed from the colonists of that island.

The following is the strength of a peace establishment:—

Guard.....	3,884 of all ranks
Line	37,107 „
Special corps	2,470
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Total	43,461
Adding Staff, &c.	45,879

In time of peace it is not organized in the larger formations; but in time of war it forms two army corps of two or three divisions each. To allow of this, on mobilization two battalions of the Guard and twelve of the line have to be formed from the reserve.

The reserve consists at present of 15,000 trained men; but in 1883 the duration of service in it was prolonged from three to four years, and when it has attained its full development it is intended to number 60,000. Of these, 16,000 are required to complete the existing formations, and 14,000 for the creation of the additional battalions.

After serving three years with the colours and four in the reserve of the active army, the men are passed into the territorial army, the duration of service in which is five years. It answers to the German *Landwehr*, and is intended to supply a second force equal in strength to the active army. At the present time not a half of this number is in the territorial army, and it must take some years before the system is so far developed as to allow of the five annual classes being available. In time of peace only weak cadres, numbering about 1,000 of all ranks, are maintained.

The national army forms at present a scheme, and can only be a reality when a sufficient number of annual classes have completed their service in the reserve. Up to the present time the force consists of all men between seventeen and forty years of age, who have been exempted from service on legal or other grounds, and they are consequently of little military value.

When the territorial army shall have attained its full dimensions, and the annual classes have reached the normal strength of 15,000 men, Japan will be able to mobilize an army of from 150,000 to 160,000 men.

Active army completed to a war strength ....	...	59,000
Territorial army	59,000
Depôt troops	10,000 to	20,000
National army	22,000 to	32,000
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		150,000 to 170,000

The organization is strictly on the territorial system, for which purpose the country is divided into six military districts, which are again subdivided into fourteen sub-districts, to each of which a regiment is allotted. The Guard is an exception, being recruited from the young soldiers of the whole army after completing six months' service.

Austria.

The reforms introduced in 1882 have been completed by new detailed regulations fixing the composition and strength of the component parts of an army in the field. The tables relating to this are published in the Reports, and show the following results:—

Distribution.	Battalions.	Squads.	Batteries.	Officers and men.	Horses.	W
Infantry division.	14½	3½	3	16,061	2,478	
Cavalry division..	½	2½	2	5,637	5,653	
Army corps	28½ (& 3 companies)	6½	11	35,361	7,076	1

This includes the train and other non-combatant services, deducting the fighting strength is as follows:—

Distribution.	Bayonets.	Sabres.	Guns.
Infantry division.....	12,844	452	24
Cavalry division.....	—	3,742	12
Army corps	26,347	904	88

The "army in the field" embraces all the mobilized troops and formations, and numbers 800,000 men with 1,712 guns. Adding to the formations not forming part of the field army, the reserve troops, a two Landwehr organizations, the entire strength of the land forces is 1,100,000, exclusive of the Landsturm, the formation of which has not been carried out.

The cavalry division is composed only of two arms, cavalry and artillery, with the necessary provision and sanitary formations attached.

The infantry division includes the Staff; 2 infantry brigades, composed of 14 to 15 battalions of infantry or rifles; 3 to 4 squadrons of cavalry; 1 division of artillery of 3 heavy batteries; technical troops according to circumstances; 1 train squadron of 3 subdivisions, one of which is for the baggage office and provisions of the Divisional Staff, and the horsing of the field and sanitary wagons, the other two to carry on the provisions of the field columns; the divisional ammunition park, consisting of an ammunition column of the artillery division; the divisional sanitary column, with a field sanitary column of the German Red Cross Society; 2 field parks; 2 columns; and the Divisional Staff troops, consisting of a company of infantry and a troop of cavalry.

The army corps is composed of the Staff; 2 or exceptionally 3 infantry divisions; the corps artillery, consisting as a rule of 2 divisions of artillery regiment, viz, 3 heavy and 2 light batteries; the necessary divisions of engineers and pioneer troops, field bridging equipment, advanced guard bridge trains, field telegraph divisions, and intrenching columns; 1 train squadron; the corps train park, destined to provide necessary supply of horses, train material, and men; the corps ammunition park, consisting as a rule of the 3rd column of a field artillery regiment; the Corps Staff troops, viz., one Landwehr company and a troop of cavalry, and the treasure chest for supply to the several formations.

The Army is formed of a number of army corps, which varies according to circumstances. It is divided into the Staff; the army corps or divisions, fixed by the *ordre de bataille*; the requisite number of field railway

engineer and pioneer divisions, and bridge equipages; the necessary proportion of reserve formations of the 2nd line.

There are specially attached to the Army Staff 1 train squadron; the Staff troops, consisting of 1 Landwehr battalion and 3 troops of cavalry; and the treasure chest.

The reserve establishments of an army in the field provide for the completion of the war material of the imobile army corps, to afford first assistance to the sick and wounded, and further to serve as feeders to the establishments of a similar nature in the front. Those regularly allotted to the divisions and army corps form the first line, and the remainder the second line of the reserve establishments.

The whole of these 2nd line establishments are at the disposition of the Commander of the Army, who allots such as he considers necessary to the several army corps according to their strength and the object they have in view, and relegates the remainder for employment on the line of communications.

The artillery reserve establishments provide for the replenishment of small-arm and gun ammunition, men, horses, and material. The following proportion of ammunition is carried by the troops themselves. In the infantry and rifles each non-commissioned officer carries 20 rounds, each lance-corporal, leader of a patrol, and private, 70 rounds. The two wagons attached to each battalion carry 52 rounds more per man for a strength of 800. The cavalry carry 50 rounds of carbine and 30 of revolver ammunition, and 9 more of each per man is carried in the wagon attached to the cavalry division.

The artillery carries 128 rounds per heavy battery, 152 per light and horse battery, in the limbers and battery wagons.

The reserve establishments provide a further supply by means of the divisional corps and army ammunition parks. The divisional park, composed of ammunition columns 1, 2, or 5 of a field artillery regiment, carries with it the reserve of small-arm and gun ammunition, men, horses, and partly also of material for the division. The proportion of rounds carried is 22 per man for 14 battalions of 800 men, and 82 per gun of the divisional artillery.

The corps ammunition park is formed by column No. 3 of a field artillery regiment, and carries a reserve for the whole corps artillery, besides cavalry and special troops, also explosives, tools, &c. The proportion of ammunition is 20 rounds for the special corps troops, 18 rounds per carbine and revolver, 74 per gun of light batteries, and 82 per gun of heavy batteries.

The army ammunition park provides for completion of ammunition, artillery, material, men, and horses with the divisional and corps parks and for the artillery of the cavalry division. It provides for the repair of all the artillery material and deals with captured material. It is formed from columns Nos. 4 and 6 of the field artillery regiments.

When it is considered necessary a reserve army ammunition park is also formed; an army ammunition field depôt is established at a spot fitted for the formation of depôts and workshops, and affording good communication with the front; and a siege artillery park with the necessary material for the siege of a fortress.

It is noteworthy that during the past year the lance was altogether set aside, and the whole of the Austrian cavalry is now uniformly armed with sword and carbine.

Eastern Roumelia.

3. The nomination of Drigalski Pasha, a German by birth, to the post of War Minister has had the effect of introducing a more practical element into the small army of which this province can now boast. The organization of the active force is on the smallest scale, numbering only twelve companies,

allotted respectively to the same number of military districts into which the province is divided.

The actual number of companies is at present six in excess of this, are to be reduced when the condition of the country will admit of it. The companies form the cadres for the formation on mobilization of three legions in each district. Of these the first is formed from the first levy Militia, the second from the second levy, and the third from the Reserve.

The total number of men, including all these, is as follows :—

Active companies....	130	Officers.	3,391	non-com. officers and	r
First levy	40	"	18,224	"	"
Second levy	"	19,187	"	"
Reserve	"	23,197	"	"
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Total..	170	"	63,999	"	"

Of the contingent of 3,873 men who were taken in 1884-85, 84.5 per cent. were Bulgarians, and only 7.5 per cent. were of Turkish nationality.

Portugal.

The reorganization of the Portuguese Army was inaugurated by means of a Decree in October last. The object in view is to raise the strength of the forces on mobilization to 120,000 from 75,000, at which figure it was previously fixed, making a gain of no less than 45,000 men.

This is not to be effected by any alteration in the recruiting law, but by the extension of the previously existing term of service from eight to ten years, with a view to the formation of a second class reserve.

In accordance with this three years are passed with the colours, five in the first reserve and four years in the second. The peace strength is increased annually by the Budget, and is as follows for 1885-86 :—

Infantry.....	24 line regiments.....	} 15,680
	12 rifle "	
Cavalry	10 regiments.....	3,700
Artillery.....	3 field artillery regiments,	} 3,580
	2 garrison do., 4 garrison	
	companies, 1 mountain	
	brigade	
Engineers	600
Administrative branches.....	440
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Total.....		24,000

But to arrive at the actual numbers with the colours 3,000 men who are on unlimited furlough without pay must be deducted, which leaves 21,000 as the correct number with the colours.

The annual contingent from which the number required is taken is at present 10,000.

The kingdom is divided into four territorial divisions for military purposes, having their headquarters at Lisbon, Vizeu, Oporto, and Evora respectively. These are divided again into a varying number of administrative districts. The islands of Madeira and the Azores are treated separately.

The infantry and rifle regiments are composed of two active and one reserve battalion, each consisting of four companies.

On mobilization the active battalions are completed from the following

1. The men on furlough belonging to the active army.
2. The men of the first reserve.
3. The trained men of the second reserve.

The reserve battalions include—

1. The trained men of the second reserve, beginning with the oldest classes, so far as these are not required for the active battalions.

2. The untrained men of the second reserve, commencing with the youngest classes.

In time of peace the reserve battalions have no cadres; only 1 Officer and a 2nd sergeant are borne as effectives.

The cavalry regiments are composed of three active and one reserve squadrons, each of two companies. These are all completed on mobilization from the men of the active army on furlough, the first reserve and those of the contingent of the second reserve who have actually served three years, beginning with the youngest. The horses are to be obtained as far as possible by direct purchase, and completed by requisition.

The field artillery regiments are formed on mobilization in 10 active and 2 reserve batteries each of 6 guns. The mountain artillery brigade is developed into a regiment with 2 active and 4 reserve batteries of 8 guns. The garrison artillery regiments form 8 active and 4 reserve companies each.

The four independent companies belong to the Azores, Madeira, and San Julian de la Barra. The active and reserve batteries are completed, both as regards men and horses, as in the cavalry.

The engineer regiment forms 2 active and 1 reserve battalion. Of the former 1 battalion is composed of 4 companies of sappers, and the other of 1 railway company, 1 telegraph company, and 2 pontoon companies. They are completed in the same manner as the cavalry and artillery.

There is a separate torpedo company and staff.

The effective strength on a war footing according to the new organization is as follows:—

Distribution.	Officers.	N.-C. Officers and men.	Horses and mules.	Guns.	Wagons.
Headquarter staff ..	36	—	—	—	—
General staff	49	—	—	—	—
Infantry	2,286	97,344	360	—	—
Cavalry	416	6,400	5,800	—	—
Artillery	488	9,687	5,689	264	—
Engineers	49	2,023	588	..	52
Total	3,324	115,454	12,437	264	52

118,778

Russia.

No material changes were initiated in the organization of the several arms during 1884, but some progress was made in carrying out those already commenced, more especially in the conversion of the Guard cavalry regiments (with the exception of the Cuirassiers) and the 46 Dragoon regiments of the line from 4 to 6 squadrons. The combined Life Guard Don Cossack Regiment was divided into two, each of which will be organized in 4 squadrons in peace and 6 in time of war. The first of these regiments bears the original title, and the second is called the Life Guard Ataman Regiment. Some additional sotnias of the Orenburg Cossack Woisko were also embodied for permanent service.

Some additions were made to the garrison artillery, of which the number of battalions was increased from 42 to 44 by the formation of a 3rd battalion at Warsaw, and the organization in a battalion of the garrison at Gunib, in the Caucasus. The 2nd and 3rd Battalions at Brest Li and the 1st and 2nd at Ivangorod, were each increased by a fourth company.

By instructions issued in July, 1884, regarding the engineer formations the Caucasus Pontoon Company was done away with, and some interesting details published regarding the engineer field parks and the military graph parks.

The former form a movable reserve of tools and other technical material. Each park is divided into 2 sections, which is divided again into 4 divisions. Each subdivision carries tools, &c., for one field company and infantry division. In time of peace the parks are attached to the sapper brigades, of which there are five, and one of the Caucasus, a number after them. In war the subdivisions are allotted to the sapper and infantry divisions. The material and tools of the parks are stored in time of peace at the stations of the several sapper brigades, where they are mobilized.

The 16 military telegraph parks are composed each of two sections, divided into two stations. In peace they are also attached to the sapper brigades and in war they are under the Chief of the Staff of the body of troops to which they are allotted. The pontoon trains, of which there are besides one for the Caucasus, are intended to be attached to the sapper armies.

The organization of the train formations has at length been definitively settled, the nature of the carts and wagons for the several bodies of troops decided upon, and their proportions and order with the marching order fixed. The most noticeable point in connection with this is the lightness of the wagons adopted, which, though it has necessarily the effect of increasing their number, will render the Russian Army the most mobile of any in Europe. This is especially suitable to operations in Russia itself, where roads are generally wanting.

With the exception of the artillery ammunition wagons, six-horse teams are altogether dispensed with, and all the infantry, rifle, and cavalry small-arms ammunition carts are one-horsed, as are also the medical and veterinary carts.

The hospital wagons are partly two- and partly four-horsed; the provant wagons which accompany the troops are two-horsed, and those of the divisional train four-horsed. The formations are divided into regimental and special trains.

The regimental train is divided into—

1. Train of the 1st echelon.
2. " " " 2nd " "
3. Divisional train.

The 1st echelon is composed of a number of small-arm ammunition carts, the hospital wagons, some Officers' wagons, the ammunition and provant wagons. These follow immediately after the regiment, independent battery or battery.

The 2nd echelon includes the remainder of the small-arm ammunition carts; the two-horsed wagons with provisions, Officers' baggage, office and intrenching tools; and the veterinary carts, battery wagons, and engineer wagons. These follow the fighting troops at a distance, from $\frac{1}{2}$ to 8 kilometres. The small-arm ammunition carts are next

troops, to which they are moved up if an engagement is impending; the remainder are then kept back to the full distance in rear.

The divisional train is formed of those wagons belonging to the troops which are only required from time to time. These consist of the four-horsed provision wagons and those conveying the sick. They are kept a day's march in rear on the main road.

Some idea is given of the number of vehicles employed by the fact that an infantry regiment has 102, and a dragoon regiment 48.

The special trains include the following:—

1. Ammunition park.
2. Sanitary trains.
3. Intendance transport.
4. Engineer trains.
5. Horse depôts.

They march ordinarily separate from the troops.

The ammunition parks are composed of flying parks, movable parks, and local parks. Each army corps has a flying artillery park per infantry division, and a flying cavalry park per cavalry division. They are divided into two echelons on the march, of which the advanced one is 10 kilometres in rear of the troops, and the other a day's march behind it. To each army or independent army corps, one movable artillery park and one local artillery park is attached for every two divisions. The former are collected in brigades of three or four, under the Officer commanding the army artillery. The local parks are employed in completing the ammunition depôts.

The sanitary trains are composed of divisional infirmaries, movable and reserve field hospitals, military sanitary transport, movable divisional and field dispensaries. The whole of these formations are attached either to the infantry divisions or to armies, no part of them being allotted to cavalry divisions or army corps. Each infantry and field reserve division is provided with 1 divisional field infirmary, 2 movable field hospitals, and 1 divisional dispensary, all of which are directly under the divisional commander. Every army would be furnished with movable and reserve field hospitals as required. Of the former 120, and of the latter 240 are provided for on mobilization.

The Intendance columns are a combination of the German provision and park carriage columns and are each composed of 260 two-horsed wagons, carrying eight days' provisions for 8,500 men, and four days' oats for 1,500 horses. Every army has two such per infantry, and one per cavalry division, and additional transport can be allotted to it if considered necessary.

The Intendance columns are grouped into brigades, of which each army corps has one of 5 or 7 columns, according to the number of infantry divisions composing it.

Those columns which are actually with the armies are placed under the Commander of the Communications of the Army; those further back under the Commander of the Military District.

Generally speaking the supply of a Russian army in the field is provided for in the following manner. The Intendance columns form the supply reserve in the hands of the Army Commander. They complete and fill the provision wagons of the divisional train, and can also be employed in filling the magazines; they ensure an eight days' supply for the troops dependent on them.

The four-horsed wagons of the divisional train form the supply reserve at the disposal of the commander of the division, and carry a four days' supply for the troops composing it.

The two-horsed wagons of the regimental train carry one day's supply for the dismounted, and two and a half days' for the mounted troops, and four days' forage for the draft horses.

Lastly, the whole of the troops carry themselves preserved ration for infantry for three days, mounted men for two days, with oats for the period. Altogether sixteen days' provisions should be carried. Field establishments are not provided for, but men are detached to the magazines from the troops for the purpose of making bread.

A remount dépôt for 100 horses is formed for each infantry division and one for 60 horses for each cavalry division. In addition to these one is provided for each army of undefined strength.

By the new arrangement of the regimental train, the amount of ammunition to be carried has been slightly reduced. It is now fixed for the infantry, including the reserve divisions of the 1st line (12 divisions), 132 rounds per rifle. Of these, 84 are carried by the man, and the remainder 48 by the regimental train. Dragoons and Cossack troops have 72 rounds per carbine, of which 36 are carried by the men, and 36 by the train. Cavalry have 6 rounds per revolver, others carrying that arm 18 rounds. Non-commissioned officers carry 30 rounds per rifle, and none is provided for them in the regimental train.

The reserve divisions of the 2nd line (12) carry the same as the regular divisions have no train for a further supply.

The batteries are provided with ammunition in the following proportions:—

Heavy batteries per gun	106 rounds
Light " "	145 "
Horse " "	130 "
Mountain " "	96 "

Turkey.

The year 1884 witnessed little, if any, progress in military matters, but has been more or less at a standstill since 1881. As, however, the changes in the Turkish Empire have at the present time a special interest, a *résumé* of its armed strength, as contemplated by the reorganization of 1881, and described in Colonel von Löbell's pages, will not be out of place.

By this the forces of the Empire were divided into three portions: the field army, the garrison army, and the landsturm.

The field army is based on the territorial system, the seven regions into which the Empire is divided furnishing each an army of three army corps, with the exception of the first, embracing Arabia, which has only a local garrison force forming one army corps. Each of the six regions furnishes an army is subdivided again into 32 battalion recruiting districts.

The three army corps composing each army are formed respectively of the troops of the Nizam (active army) and the Redif (reserve) of the 1st and 2nd Class respectively. They are organized on a similar *ordre de bataille* comprising 26 battalions, 24 squadrons, 14 batteries, and 1 pioneer battalion, which gives 26,000 infantry, 3,600 cavalry, 84 guns, 1,000 pioneers, a total of 32,700 combatants.

The whole mobilized field army therefore amounts to 463 battalions, 432 squadrons, 252 batteries, and 72 pioneer companies, numbering 500,000 combatants, with 1,512 guns, organized in 6 armies each of 3 army corps of 2 infantry and 1 cavalry division.

The garrison army is composed—

1. Of the dépôt troops of the 18 field army corps, viz., 1 battalion

squadron per regiment, giving 144 battalions and 108 squadrons, or about 150,000 men.

2. The Nizam Army Corps of the 7th region (Arabia), which provides solely for the local requirements, has no reserve, and is recruited from the contingents of the other six regions. It is composed of 34 battalions, 6 batteries, and 1 pioneer battalion, and of the militia of Crete and Tripoli, 9 battalions and 3 squadrons strong. Total about 35,000 men.

3. The garrison artillery, not yet organized, but intended to be distributed throughout the kingdom, about 18,000 men and 1,800 guns.

The Landsturm comprises 6 yearly classes of men who have completed their 6 years in the Nizam and 4 years in each class of the Redif, estimated at about 300,000 men, and all the effective men between 20 and 40 years of age not serving in any of the above categories, some 40,000.

How far this organization will answer the expectations formed of it by providing the numbers estimated, it is as yet too early to judge. Up to the present, progress has been chiefly confined to the Nizam. The 1st Class Redif is altogether wanting in cavalry, in great part in artillery, and in infantry in a lesser degree; the 2nd Class Redif is as yet non-existent in peace time, while the Landsturm remains in the form of a project. The garrison army is present, with the exception of the depot troops for the Redif formation. Consequently, the Nizam army in time of peace has 4 battalions or 5 squadrons respectively per regiment of infantry and cavalry.

Inclusive of the Cretan and Tripoli Militia, the garrison artillery, and the Arabian Nizam Army Corps, the Turkish active army at the close of 1884 numbered 264 battalions, 189 squadrons, 140 batteries, 8 garrison artillery battalions, 19 engineer battalions and departmental troops, in all 158,959 men (with about 9,900 officers), 23,025 horses, and 3,202 guns.

Of these, 12 engineer battalions and one battery are under the orders of the chief of the artillery, and the remainder are distributed in the following manner :—

Distribution.	Headquarters.	Battalions.	Squadrons.	Batteries.	Garrison artillery batteries.	Engineer battalions.
1st Army Corps	Constantinople	35	30	30	8	—
2nd „	Adrianople ...	32	30	14	..	1
3rd „	Monastir	33	30	20	..	1
4th „	Eringan	34	30	24	..	1
5th „	Damascus	34	29	15	..	1
6th „	Bagdad	34	30	14	..	1
7th „	Sana	34	..	6	..	1
Militia	Tripoli	17	10	3	..	1
„	Crete	6	—	—	—	—
Total .....	.....	264	189	126	8	7

The reorganization of the army, according to the scheme of 1881, has been delayed during the past year by other causes besides Oriental procrastination. Local disturbances took place, which necessitated the concentration of troops and interfered materially with the development of the territorial system. The only one of these disturbances of any military importance was that in the Hedjaz, which necessitated the employment of 10,000 men to quell it.

Infantry Tactics.

The year 1884 was an active one for European armies in the matter of development of infantry tactics and musketry instruction and practice. The point of principal interest is still how to deliver the infantry attack in ground without such destructive losses as were experienced at St. Privat and Plevna. The progress in the perfection of arms which, as it was anticipated, would lead to a preponderating advantage for the defence, has not prevented the attack from being, as previously, the stronger.

It is held by the advocates for the adoption of a magazine rifle that the introduction of this could not continue to be the case. This conclusion is questioned, though it is fully admitted that, whether the present nature of arm remains unchanged or a repeater introduced, the form must be considerably modified, if the attack is to retain its superiority. It becomes possible without a disproportionate sacrifice of life.

The latest regulations, recent practice on the parade-ground and manœuvres, and the general literature on the subject, lead to the conclusion that certain principles which may be briefly summarized as follows:—

The decision in an infantry engagement can only be arrived at by concentrated fire at the most effective distance. Attack with the bayonet, unaccompanied by the previous shaking of the enemy, can lead to no successful result, and exposes the troops attacking to destruction.

Troops in close order can find no place in the front fighting line, and their rôle is to feed the skirmishing line of fire, replacing its losses, filling up and, by constant reinforcement, to strengthen it to the utmost. The skirmishing fire of the skirmishers commences at about 700 metres by volleys concentrated upon the decisive points. The advance up to effective distance from the defended position is carried out by alternate rushes, each followed by the fire of the latter portions of the line.

The resistance of the enemy must be broken by volley and rapid independent fire, at a distance of from 200 to 300 metres. The final advance is made by the steady, uninterrupted closing to the front of the reserves, being taken to avoid a premature advance consequent upon any success of the skirmishing line. The assault follows by order of the commander, when it becomes evident that the enemy is seriously shaken, and is carried out with all the available forces.

Attacks must always be executed as rapidly as the circumstances permit, for the losses of the assailants will be proportionally greater than those of the defenders, and the former cannot reckon upon the continuous supply of ammunition.

If successful, the enemy must be followed up with a hot fire. In the contrary case, the attacking troops must be promptly withdrawn behind the nearest available cover and there re-formed.

The absence of preparatory artillery fire robs the attack of its valuable preliminary, and can then only be justified by a great preponderance on the part of the attacking force.

The question of the introduction of a repeating rifle remains where it was in Switzerland alone has armed her infantry with it, and the other Powers maintain an expectant attitude regarding it. It is recognized on all sides that sufficient grounds do not at present exist for its adoption.

The most valuable quality in such an arm is, that the time employed in the ordinary rifle in loading can be devoted to taking more careful aim rather than the increased rapidity of fire to be obtained from it. To profit by this it must be in the hands of carefully trained and perfectly reliable troops, failing which its employment would be detrimental. The question, however, of the moral effect which must be produced by troops armed

the present rifle being opposed to an enemy armed with the repeater, has also to be considered. This must be a powerful incentive to lead other armies to adopt the latter should it be introduced by any one of the greater military Powers, and for this reason no pains are being spared to test the capabilities of the arm.

New and important regulations for the musketry instruction of the German Army were issued in September, 1884. The essential points in these are a more thorough instruction in individual firing and the development and adaptation to the conditions of real warfare of field-firing. The firing at moving objects forms a part of this, not only at targets travelling across the range, but also up and down it, so as to allow of greater variation of circumstances. Particular value is placed upon snap shooting, as is the case in the Austrian and Italian infantry.

Other conditions are introduced, such as targets representing infantry lying down, and also behind entrenchments. Practice assimilated to fortress warfare is also gone through, the men firing by day from trenches at disappearing targets, and by night by means of fixed rests.

Firing at longer ranges than 800 metres is, as a rule, only to take place in the field by order of the battalion commander or other superior Officer. In case of necessity, fire may be opened on batteries, columns, and other deep formations at a range of from 800 to 1,200 metres.

At the beginning of an engagement, line or group volleys are to be fired, provided the body firing has not itself already come under effective fire; also with strong skirmishing lines, when the aim is obscured by smoke.

It is laid down as a rule that pauses in the firing should take place when this is the case, and a signal for this is provided for by the whistle, with which the commanders of the several units are provided. Independent fire is restricted to exceptional cases.

Instructions are further given in the present regulations for judging distance practice, for the men up to 800 metres, for the Officers and non-commissioned officers up to 1,200 metres.

In France, new drill regulations were published in place of those of 1875, on which they are in many respects an improvement, though the same principles are adhered to. The attack formation for a battalion differs according as it is acting in brigade or independently. In the former case the battalion is formed as follows:—

1. Skirmishing line, the four leading sections of the two advanced companies.

2. Supports, the four remaining sections.

3. Reserve, two complete companies.

An independent battalion is formed differently in the following manner:—

1. Skirmishing line, the leading sections of the two half companies of the company forming the advanced guard.

2. Support, the remainder of this company.

3. Reserve, the three other companies, to be employed according to circumstances.

The deployment takes place at 1,500 metres from the position to be attacked. The direction is given by a flag-bearer, controlled by the Adjutant Major, by the aid in covered ground of a compass. At a distance of 400 metres all the supports are brought into the advanced line, which is strengthened by one company from the reserve, the remaining company moving up to 200 metres from it. On arriving within 200 metres of the position, the assault is given, supported by the remaining reserve company, which is kept intact.

The practical element introduced by Russia in the training of her troops, which has been so conspicuous in the exercises of the cavalry to which atten-

tion was directed in the Reports of 1883, has been given a further development in the direction of field-firing. This has been practised with a force, with the double object of training the men in the use of the under conditions assimilated as far as possible to actual warfare, and instructing the Officers and non-commissioned officers in the control of the fire under the same conditions.

At the camp of Krasnoe-Selo a force, consisting of a battalion at the strength, a squadron of cavalry and a battery of artillery, was formed for the purpose. The enemy were represented by targets as advancing against a position preceded by a skirmishing line.

An attack was made upon the enemy, who were supposed to open at 900 paces, which was answered, and the 1st line then advanced by firing to within 200 paces. The method of firing, whether slow, individual or rapid independent fire, was left to the discretion of the leaders.

The enemy's artillery was attacked by a company of the 2nd fighting during a supposed change of position, and five volleys fired at it. Fifty dismounted cavalry fired five volleys at a company column of the enemy 900 paces (23 hits). The 4th company manoeuvred on the enemy's flank, and two of its subdivisions fired four volleys indirect fire at the enemy under cover at 1,200 paces (23 hits). Two subdivisions of cavalry fired for 2½ minutes independent fire at the enemy's skirmishers (66 hits). The extended companies, reinforced by their third subdivisions, plied advancing columns at 800 paces with independent fire (200 hits), while the enemy's skirmishers, at a distance of only 400 paces, were held in check by a subdivision (312 hits).

After the cavalry had been firing at the enemy behind a shelter-trench at 1,200 paces for 1½ minutes (69 hits), the enemy's skirmishers being repulsed, were followed up by six subdivisions at distances from 500 to 150 paces with individual fire, then with independent fire, preparatory to a bayonet charge. The reserve company completed the exercise by volleys and independent firing, lasting two minutes.

The general result was that 13,187 cartridges were fired, of which 1,614 were expended by the cavalry, and that the percentage of hits was 10 for the infantry and 26 for the cavalry, which did not change their position. The weather was dull and rainy.

Officers of the Musketry School were attached to the company commander to instruct as to the sighting and control of the fire. To mark the loss of the attacking force, Officers and men, up to a quarter of the total number, were gradually taken from the ranks. The supply of ammunition was provided for by men from the reserve company, who, after bringing up, joined the ranks of the advanced line. The men were further enjoined to complete their ammunition from those retiring as supposed casualties.

A similar manoeuvre by four battalions, two squadrons, and four batteries was witnessed by the Czar.

Field Artillery Tactics.

No material changes are noted in the tactics of field artillery during the year, but a brief summary is given of the latest regulations on the subject introduced into the Italian Army, though these actually date back to 1882. It is pointed out in these that from the nature of artillery, the separation of the reserve is not called for, and that this arm should operate in masses.

The change of position is to be, as far as possible, avoided. A position at a greater distance from the objective, but from which the effect of the fire can be observed, may often be more favourable to effective fire than one

shorter range, but from which it is not possible to observe the result of the fire.

The artillery of an army corps is generally separated in action and has separate objects to attain, so that a single command of the whole of it can seldom be preserved. The commander of the artillery has, therefore, the direct command of it when the bulk of his batteries have a single object in view.

In action the artillery allotted to a body of troops must not be withdrawn from it without the special order of the Commanding General. The enemy's artillery should only be engaged within 2,400 metres, and at not less than 1,500 metres, beyond the effective range of rifle fire. To silence the enemy's artillery, a second position under 1,800 metres must be taken up, and when this cannot be maintained without endangering its own infantry by its fire, the artillery may take up a third position at a distance not under 1,000 metres from the enemy's infantry. Modifications of these normal conditions may become necessary. The circumstances of the ground may often prevent artillery leaving its first position.

Only the most exceptional conditions will justify a further position being taken up under 1,000 metres. For instance, should the course of the action prevent the guns participating in it without a further advance, they must be moved forward to suitable ground regardless of risk.

So soon as a position has been seized, the whole of the artillery must follow up the retiring enemy. It must depend upon circumstances whether the artillery takes position on the flanks or in the middle of the other troops. At the commencement of an action and during the artillery action, the other arms will regulate their movements chiefly with reference to the guns. Later on the movements of the artillery will be regulated by the infantry.

In the defence, the whole of the disposable artillery will be employed. Its position will be chosen without regard to the other arms; but will not be occupied too early, so as not to make the enemy aware of them. For the same reason fire will not be opened too early, nor should it be directed upon unimportant objects.

If the defending artillery is in danger of being silenced by the fire of the enemy's guns in the course of the artillery action, it should be withdrawn so as to be reserved intact for the decisive moments of the attack. The range of the defending guns should not exceed 2,400 metres. The effect of rifle-fire will be felt under 1,200 metres, and even over 1,500 metres by artillery. It is very important to get the guns into position unperceived, so as not to be exposed to the enemy's fire in the act of unlimbering, and also to secure the advantage of opening fire unexpectedly.

A new work by Lieutenant-Colonel v. Hoffbauer, entitled "*Applicatorische Studie über die Verwendung der Artillerie in Grösseren Truppenverbänden*," deals with the general principles upon which the artillery belonging to the larger bodies of troops should be handled. In the course of the study the artillery of two opposing army corps are dealt with, and the following general conclusions, arrived at by the author, are worthy of notice:—

1. In the decisive period of an attack the offensive has no chance of success if the defending artillery is able to maintain itself successfully in its positions.

2. After driving back the defending artillery, it is absolutely necessary for the attacking artillery to bombard the infantry positions of the defence systematically before the attacking infantry assaults them.

3. The defending artillery must, as a rule, engage the attacking guns when the chances are in favour of crushing them.

4. On the advance of the assaulting columns for the storming of a posi-

tion, the artillery must not be entirely left behind. A strong artillery must be available to move promptly into the captured position.

5. The defending artillery, when it has not been successful in its engagement with the attacking guns, or when it has not been in a position to engage these with any chance of success, must not on that account remain entirely passive. It should manœuvre, and endeavour to operate by surprise on unexpected points.

6. In the absence of clear instructions from the Officer in chief command the systematic employment of the artillery is impossible, or at least is excessively difficult.

7. For the employment of the artillery in a regular battle, it is immaterial whether all the army corps artillery is previously attached to the two divisions, or if one regiment is separated from them as corps artillery.

Defensive Works.

France, having nearly concluded the works decided upon for the defence of her other frontiers, has now turned her attention to the Pyrenees, to the fortification of which a considerable sum is to be devoted. The first point to be dealt with is in that portion of the frontier situated in the Département d'Arriège which is opposite the Spanish fortress of Puicerda. The road leading to this runs over the summit of the Pointe-Couronne, and it is at that spot that a fort is to be built to block the road, which should by now be in course of construction.

In Russia the progress of the Warsaw fortification works have come to a standstill. Already in 1883 all the preparations were ready for proceeding with the outer line of works, and the necessary material for the purpose had been collected. But in 1884 orders were issued to postpone all further work upon them.

Italy continues to make great efforts to complete her frontier and defences. A large sum was voted for the purpose in 1884, and a Commission reported how it should be applied and distributed between the four groups composed of the Alpine frontier, the sea-coast, the interior, and the islands of Sicily and Sardinia. Following the system recommended, considerable progress has been made with the works in connection with each of the groups, but more particularly at Spezzia and Rome, though these are far from completed.

Even Spain has not been idle during the past year, but has made a commencement towards the strengthening of Ceuta, which from a defensive point of view has hitherto been of little value.

In Belgium the tardy completion of the system of land defence decided upon as far back as 1859 has been proceeded with more rapidly by the construction in part of the citadel, the rebuilding of the older portion of the works, and the erection of detached forts. Of the latter, the first two are fairly complete; money has been voted for a third, and a fourth plan between these detached forts and the inundations fourteen redoubts are projected, and would be constructed on the necessity arising.

The forts, destined to receive an armament of seventy-four guns, have the form of five-sided redoubts with long faces, forming very obtuse angles and short broken flanks. The ditches are broad and deep. On the sea side they are strengthened by plated batteries and revolving cupolas.

In connection with the progress of permanent fortifications is to be noted the advance in scientific adjuncts for their defence. Of these may be noted the great development of electricity, balloons, torpedoes, and carrier-pigeons for purposes of communication.