



THE WESTERN FRONT ASSOCIATION

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UNIT ORGANISATION 1914 - 1918

**ROYAL HORSE ARTILLERY
ROYAL FIELD ARTILLERY
ROYAL GARRISON ARTILLERY**

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CHAPTER 1: THE INDIVIDUAL SOLDIER

CLOTHING

In the field, the standard dress for all ranks was the khaki clothing known as 'service dress'. This consisted of a peaked cap, jacket with patch pockets, and breeches with puttees (leather leggings for officers), ankle boots, and spurs for mounted men. Dismounted men had no spurs and wore trousers instead of breeches. A special Army Order dated 5 August 1914 ordered the wearing of service dress by all ranks for all purposes, with the exception of the Household Cavalry and Foot Guards in London, and from that date Full Dress became virtually obsolete.

A spare pair of boots, spare suit of service dress (excluding the cap) and spare set of underwear for each man was stored in his kitbag and left at the base in the care of the company, squadron or battery storeman. For officers these items were packed in a leather valise carried in the transport vehicles with the divisional train. The soldier also had with him a further spare pair of socks and a knitted woollen headdress known as a 'cap, comforter', and a greatcoat. For dismounted men this was normally carried in the pack: for mounted men, rolled behind the saddle.

Great emphasis was placed in the importance of clothing, especially boots, being properly fitted. The Clothing Regulations contained detailed instructions for measuring and fitting men with clothing, especially recruits whose clothes were ordered to be fitted with an allowance for future growth. Company commanders were responsible for inspecting their men personally to ensure that clothing and boots were correctly fitted. Care of the feet when on the march was also an important topic.

It will be noted that, unlike his French and German counterparts who wore their peacetime helmets with covers, the British soldier of 1914 had no protective headgear. The steel helmet was not introduced on any large scale until the first half of 1916, although some experimental patterns were tried during 1915.

ARMS AND PERSONAL EQUIPMENT

Officers were each armed with a sword (the pattern varying slightly with the arm of service) and a pistol. The choice of the latter was left to the officer, the only requirement being that it had to carry Government ammunition. The model recommended to officers was the Webley Mark IV.

The officers' equipment consisted of a 'Sam Browne' belt, with a haversack, water bottle and mess tin similar to those used by the men, a pair of wire cutters, and either binoculars or a telescope. Officers were also expected to carry a compass. For mounted officers, there was a standard pattern of saddlery and the wallets at the front of the saddle were used to store such items as cutlery and washing materials. For dismounted officers, these items would be carried in the baggage wagons when on the march.

Personal weapons carried by warrant officers, NCOs and men varied according to the arm of service, and are described in the following chapters.

The equipment for other ranks of infantry, and dismounted ranks of Royal Engineers, was the 1908 pattern web equipment, made by the Mills equipment company, which had been introduced to replace the bandolier pattern equipment 1903.

The standard pattern of equipment worn by troops of mounted arms was the brown leather bandolier pattern equipment introduced in 1903 for universal use, and incorporating some of

the lessons of the Boer War. It was superseded in the infantry, and for dismounted men of Royal Engineers, by the 1908 pattern web equipment, but mounted arms retained the 1903 pattern until just before the Second World War. The main feature was a leather bandolier worn over the left shoulder, with five cartridge pockets on the front part, each pocket carrying ten rounds. Those equipped with a pistol also wore a leather waist belt, with a pistol-case on one side and an ammunition pouch on the other.

Other personal equipment worn with the 1903 pattern bandolier and belt included a haversack containing food and cutlery, worn on a webbing strap over one shoulder, a water bottle, also with a form of strap carrier, and a mess-tin. The latter was one of two types standard throughout the Army: a flattish circular tin for mounted men (usually carried strapped to the rifle bucket on the saddle) and a deeper type with a D-shaped cross-section for dismounted men. All ranks also carried a ground sheet.

There was a single universal pattern of saddlery which was common to all ranks other than officers, and all branches of the service, although there were various distinctive full-dress embellishments provided on a regimental basis. Similarly there was a standard pattern of officers' saddlery, although here again regimental full-dress variations existed. Details of the items comprising each set, and those sets of harness worn by draught horses (which again were universal patterns) are given in Appendix XII of Equipment Regulations, Part 1, and explained in layman's terms in greater detail in Mike Chappell's book "British Cavalry Equipments 1800-1941" in the Men-at-Arms series (No.138).

UNIT EQUIPMENT

The Equipment Regulations for the Army were divided into three separate parts. Part 1 contained general regulations, part 2 was divided into several separate sections and sub-sections according to the arm of service, and part 3 covered the Territorial Force. As well as the arms and personal equipment of the men, these regulations detailed minutely the items with which a unit was equipped under both peace and war conditions, in respect of armaments, spare parts, transport, camp equipment, artificers' tools, signalling and telephone equipment, and even the butchers' implements used by the cooks. In addition, each GS wagon was supplied with a pickaxe, a felling axe, a billhook and two shovels.

Mobilization Store Tables (Army Form G 1098) were issued for each type of unit, detailing the equipment which was to be kept in readiness during peacetime. Battalions and other units were held responsible that this equipment was complete, and ready in all respects to be used immediately upon mobilization being ordered. Such items as leather harness had to be taken out, inspected and cleaned at regular intervals. During peace time, units were not allowed to use their mobilization equipment for ordinary duties, only for such instructional purposes as considered necessary.

Each branch of the Army also had a series of Field Service Manuals, containing details of the war establishment of men, horses and vehicles, the clothing and equipment required for active service and even detailed specifications as to which vehicles carried each piece of equipment. Regulations laid down that, from time to time, units should draw all their mobilization stores and equipment from peacetime custody for the express purpose of training the men of the unit in packing and unpacking it.

CHAPTER 2: THE ARTILLERY BRIGADE

During the First World War, most of the field artillery - those guns of lighter calibre which usually formed part of divisions - was organised into artillery brigades. The term 'brigade' is

somewhat misleading as it denotes a lieutenant-colonel's command of about 600-800 men, and is thus equivalent to an infantry battalion or a cavalry regiment. Each such brigade contained two, three or four batteries, each of four or six guns commanded by a major, the numbers varying with the type of gun and the period of the War. Generally speaking, regular batteries contained six guns and Territorial batteries four guns at the outbreak of war: a four-gun battery became standard in the New Armies early in 1915 and generally in April/May 1916, and the end of 1916 saw a return to the six-gun battery.

HISTORICAL DEVELOPMENT

The first two permanent companies of artillery were formed in 1716. The number had grown to twenty-four by 1757 when the Royal Regiment of Artillery was divided into two battalions. The number of companies continued to grow until by 1815 there were one hundred and twelve companies in eleven battalions, plus fourteen troops of horse artillery. However, the next five years saw the disbandment of over one-third of these units.

During the remainder of the nineteenth century there were several more reorganizations. As a general rule, the companies were regarded as autonomous and their organization into battalions, and later into brigades, was for mainly administrative purposes. The term 'company' was still generally used for the manpower of the unit, 'battery' being used to describe a company with its full complement of guns and equipment. By the end of the century, however, 'battery' had become standard for both horse and field artillery, whilst siege artillery and coastal and other fixed-position defensive artillery stuck to 'company'.

During the first decade of this century, the organization of field artillery in the Regular Army became standardized at two six-gun batteries to each horse artillery brigade, and three six-gun batteries to each field artillery brigade. Also at this time the guns themselves were replaced, the new equipments being the 13-pounder for horse artillery and the 18-pounder (which was similar) and the 4.5" howitzer for the field artillery with infantry divisions. The 13-pounder is familiar to us today as the gun used by the King's Troop RHA to fire Royal salutes, and in their annual Musical Ride at the Royal Tournament.

By 1914 there were thirteen brigades of Horse Artillery, of which seven served at home and six in India (less a battery in Egypt), and fifty-one brigades of Field Artillery, of which thirty-five, including six Reserve Brigades, served at home, one served in South Africa and the remaining fifteen served in India. The Royal Garrison Artillery, which for administrative purposes was a separate corps, had twelve heavy batteries, nine mountain batteries and eighty-six companies spread throughout the UK, India and the Colonies.

THE HORSE ARTILLERY BRIGADE: OFFICERS AND MEN

A brigade consisted of a small headquarters staff and two batteries, plus an ammunition column. The headquarters consisted of the lieutenant-colonel in command, the adjutant and the orderly officer, with a medical officer and veterinary officer attached; a sergeant-major; two corporals, two bombardiers, ten gunners, six drivers, ten batmen, two orderlies for the medical officer, a clerk, a trumpeter, an armament artificer attached from the AOC, and a corporal and two privates of the RAMC attached for water duties. The corporals, bombardiers and gunners were signallers, range-takers and members of the telephone detachment.

Each of the two batteries consisted of a major, a captain and three subalterns, the latter each commanding a section of two guns; a battery sergeant-major, a battery quartermaster-sergeant, a farrier-sergeant, six shoeing-smiths (one a corporal), two saddlers, two wheelers, two trumpeters, seven sergeants, seven corporals, eleven bombardiers, seventy-five gunners, seventy-five drivers and ten batmen.

The ammunition column consisted of a captain and three subalterns; a battery sergeant-major, a battery quartermaster-sergeant, a farrier-sergeant, seven shoeing-smiths (including a corporal), four saddlers, four wheelers, two trumpeters, eight sergeants, six corporals, seven bombardiers, forty-four gunners, one hundred and thirty-three drivers and five batmen. The ammunition column was divided into two sections, so that one section could accompany each battery in the event of the batteries being split. The establishment included twenty-seven acting bombardiers (the artillery equivalent of lance-corporals), namely one of the MO's orderlies, nine in each battery and eight in the ammunition column.

The total strength was therefore nineteen officers and 662 other ranks. In addition, a subaltern, two sergeants, thirty-five gunners and twenty-three drivers were left at the base as a first reinforcement, plus three storemen (one for each battery and one for the ammunition column). An artillery clerk (a sergeant) was also left as part of the records section of the Adjutant-General's Office at the base.

The peace establishments were somewhat smaller, the establishment of a battery on higher establishment (i.e. designated for the BEF, or serving abroad) being five officers and 159 other ranks. A battery on lower establishment consisted of four officers and 119 other ranks. Generally speaking, positions of officers and NCOs were filled in full, the missing numbers of gunners and drivers being made up at mobilization by the recall of reservists. Except in India there were no peacetime ammunition columns, and brigade headquarters consisted of the CO, the adjutant, a sergeant-major, a trumpeter, a shoeing-smith and a cook (who was either a corporal or a bombardier).

The cost of the basic pay of a battery on higher establishment was £5,908 8s 9d per year, and on lower establishment £4,259 17s 1d. These sums are equivalent to around £240,000 and £170,000 today.

THE FIELD ARTILLERY BRIGADE: OFFICERS AND MEN

The brigade consisted of a headquarters, three batteries and an ammunition column. Its composition was very similar to that of a horse artillery brigade with the following exceptions.

In the headquarters there were three fewer gunners, three more drivers, two fewer batmen and one more private RAMC. In each of the batteries there were two fewer shoeing-smiths and five fewer drivers. The ammunition column had a captain and two subalterns, a battery sergeant-major, a battery quartermaster-sergeant, a farrier-sergeant, four shoeing-smiths (including a corporal), two saddlers, two wheelers, four sergeants, a trumpeter, five corporals, five bombardiers, thirty gunners, ninety-six drivers and three batmen. The total strength of the brigade was therefore twenty-three officers and 772 other ranks. The establishment included thirty-four acting bombardiers, namely one of the MO's orderlies, nine in each battery and six in the ammunition column. The detachment left at the base was the same as for a horse artillery brigade, plus six more gunners, five more drivers and another storeman.

As in the case of the horse artillery, there were no peacetime ammunition columns except in India, and the same skeleton staff for each brigade. A battery on higher establishment contained five officers and 153 other ranks, and one on lower establishment five officers and 104 other ranks.

The cost of the basic pay of a battery on higher establishment was £4,891 0s 0d per year, and on lower establishment £3,802 1s 8d. These sums are equivalent to around £200,000 and £150,000 today.

THE FIELD HOWITZER BRIGADE: OFFICERS AND MEN

This, like the ordinary field artillery brigade, consisted of a headquarters, three batteries of six howitzers each, and an ammunition column. The latter was rather smaller as, unlike the ordinary brigades, it did

not carry any rifle and machine-gun ammunition. The headquarters was the same as for an ordinary field artillery brigade, the batteries the same but with one less gunner in each battery, and the ammunition column the same but with one less subaltern, one less corporal, one less bombardier, seven fewer gunners, twenty-six fewer drivers and one less batman. The total strength was therefore twenty-two officers and 733 other ranks. There were two fewer acting bombardiers in the ammunition column. The base detachment had two fewer gunners and two fewer drivers than in the case of an ordinary brigade, and peace establishments were the same as for an ordinary field brigade.

HORSES AND TRANSPORT

Whether serving 13 -pounder guns, 18-pounder guns or 4.5" howitzers, the establishment of horses and vehicles in an artillery battery was very similar. Each officer had two riding horses; sergeants and above, trumpeters and shoeing-smith-corporals had one each, and there were horses for twenty-one other members of the battery, namely six signallers, five scouts and patrollers, three range-takers, an orderly and six coverers (the corporals in charge of the ammunition wagons serving each gun). In a horse artillery battery there were two fewer mounted scouts, but forty-five of the gunners were mounted, as were all the shoeing-smiths.

Each battery contained six guns with limbers and twelve limbered ammunition wagons, all drawn by six-horse teams, plus a two-horsed water cart and a bicycle, although horse artillery batteries each had three bicycles. Horse batteries also had a four-horsed GS wagon to carry baggage: for field artillery, baggage was carried by the Divisional Train on a scale of two two-horsed GS wagons per battery. Spare horses were provided on a scale of 10%, so each battery had six spare riding horses (ten in the case of a horse battery) and twelve spare draught horses.

Brigade headquarters were allocated two horses for each officer except the medical and veterinary officers, who had one each, as did the sergeant-major and trumpeter. There were also horses for the NCO in charge of the telephone detachment, seven signallers, two range-takers, two orderlies, three horse-holders, and the acting bombardier who was the MO's orderly, plus a further two to be used by the interpreters who were to be supplied by the French authorities on mobilization. In the case of a horse brigade there were three fewer signallers but the CO, adjutant, MO and vet each had an extra horse.

Each headquarters had a two-horsed Maltese cart for the MO, driven by his other orderly, a four-horsed telephone wagon and a two-horsed GS wagon for the cooks. For a horse artillery brigade the cooks' wagon was four-horsed, and there was also a four-horsed baggage wagon. The baggage of field artillery brigade headquarters was carried by the divisional train, one two-horsed GS wagon being supplied for each brigade HQ. Bicycles were also provided for intercommunication: one for each field brigade HQ and three for each horse brigade HQ.

The ammunition columns forming part of each brigade had more varied establishments of horses and vehicles, reflecting their different compositions according to the type of guns they served. The allocation of riding horses was one for each officer and NCO of the rank of corporal and above, for each trumpeter, and for all but two of the bombardiers. In the case of a horse artillery ammunition column, all bombardiers and shoeing-smiths were mounted, plus the two gunners in the column headquarters; the captain in command had two horses and there were four spare riding horses.

A horse artillery ammunition column contained twelve limbered ammunition wagons and twenty GS wagons (twelve for gun ammunition and eight for rifle and machine gun ammunition), all six-horsed; a further six two-horsed GS wagons for rifle ammunition, two four-horsed baggage wagons, a two-horsed water cart and three bicycles. There were also twenty-two spare horses to provide a 10% reinforcement, as in the case of the batteries. As mentioned above, the column was split into two sections, each

supplying ammunition for one battery and one cavalry brigade.

The ammunition column of a field artillery brigade equipped with 18-pounders contained eighteen limbered ammunition wagons, plus three GS wagons for rifle ammunition, all six-horsed; a further three four-horsed GS wagons and seven two-horsed carts for rifle ammunition, a six-horsed GS wagon for technical stores, a two-horsed water cart, a bicycle and sixteen spare horses. Two two-horsed GS wagons for the column's baggage formed part of the divisional train. The column served its own three batteries plus one brigade of infantry.

Howitzer brigade ammunition columns were the same as those of the 18-pounder brigades less all the vehicles carrying rifle ammunition, and in consequence there were also four fewer spare horses.

The grand totals were therefore:

Horse artillery brigade	277 riding horses, 502 draught horses;
Field artillery brigade	198 riding horses, 550 draught horses;
Field howitzer brigade	195 riding horses, 502 draught horses.

ARMS AND PERSONAL EQUIPMENT

Warrant officers still carried a sword, which was of the 1899 cavalry pattern. This had been superseded in the cavalry itself by the 1908 pattern but the artillery did not adopt this new weapon. NCOs and men of the horse artillery, except drivers, also carried the 1899 sword in peace, but gave it up on mobilization.

All ranks of horse artillery carried a Webley pistol, and wore a brown leather waist belt with a pistol holster on one side and an ammunition pouch on the other, both also of brown leather. The waist belt was from the pattern 1903 bandolier equipment, described in Chapter 1.

Men of field artillery brigades did not all carry personal weapons. Five men in each headquarters, 36 in each battery and all the gunners and drivers in the ammunition column carried rifles, except that drivers of ammunition wagons had two rifles between three. These rifles were the same short Lee-Enfield pattern as was used by the infantry, but bayonets were not carried.

All NCOs and men of field artillery, whether armed with rifles or not, wore a bandolier of 1903 pattern. This was a broad brown leather belt worn over the left shoulder, carrying on the front part five leather pockets, each holding ten rounds of ammunition. No waist belt was worn. This equipment, with the other items which accompanied it, is described in Chapter 1.

GUN DETACHMENTS

When preparing for action, each gun would normally be accompanied by one of the battery's ammunition wagons, referred to as the battery wagon. The other six wagons in each battery, referred to as first line wagons, would normally be grouped in reserve under the battery captain, and would act as an intermediate point between the battery wagons and the brigade ammunition column for the supply of ammunition.

The detachment for a 13-pounder gun consisted of eleven men. No.1 would have been a sergeant, and he and Nos. 2 to 6 formed the detachment which actually manned the gun. No. 7, a corporal, was in charge of the battery wagon, and Nos. 8 and 9, who were dismounted and rode on the first line wagon, were reserve numbers to replace casualties and assist in the supply of ammunition. Nos. 10 and 11 were horse-holders, to look after the horses of the men manning the gun: the gun and wagon drivers also assisted in this task. Every alternate gun detachment also had a mounted No. 12, who was the section

subaltern's horse-holder.

The detachment for an 18-pounder or a 4.5" howitzer consisted of ten men. As in the case of the 13-pounder, Nos. 1 to 6 were the gun crew, Nos. 7 to 10 being reserves. Only Nos.1 (a sergeant) and 10 (a corporal) were mounted: 2 and 3 rode on the gun limber, 4, 5 and 6 on the battery wagon; and 7, 8 and 9 on the first line wagon.

BATTERY AND BRIGADE EQUIPMENT

The parts of the Equipment Regulations detailing the equipment for horse and field artillery were Sections XI(a), XI(b) and XI(c) of Part 2, covering units furnished respectively with the 13-pounder, the 18-pounder and the 4.5" howitzer. As well as the arms and personal equipment of the men, these regulations detailed minutely the items with which a battery or brigade, or ammunition column, was equipped under both peace and war conditions, in respect of armaments, spare parts, transport, camp equipment, artificers' tools, signalling and telephone equipment, and even the butchers' implements used by the cooks.

As regards tools and ammunition, details were given in the publication "War Establishments", which was revised annually. For 1914 this laid down the number of rounds per gun to be maintained in the field as follows:

	<u>13-pdr</u>	<u>18-pdr</u>	<u>4.5 howr</u>
With the battery	176	176	108
Brigade ammunition column	220	76	48
Divisional ammunition column	0	126	44
Divisional ammunition park	150	150	80
Reserves on lines of communication	<u>454</u>	<u>472</u>	<u>520</u>
Total maintained in the field	1000	1000	800

"War Establishments" also detailed the various entrenching and cutting tools carried by an artillery brigade. For an 18-pounder brigade these were one hundred and twenty-six shovels, eighteen spades, seventy-two pickaxes, twenty-seven felling axes, seventy-two billhooks, fifty-four hand saws, forty-six reaping hooks and a crowbar. A howitzer brigade carried a similar collection of tools although the details were slightly different, and a 13-pounder brigade, with only two batteries, carried about two-thirds of these numbers. In addition, each GS wagon was supplied with a pickaxe, a felling axe, a billhook and two shovels.

TERRITORIAL FORCE ARTILLERY

The establishments described above relate to the Regular Army, and also applied initially to the raising of the first three Kitchener "New Armies", The Territorial Force, however, had a differently constituted artillery arm.

The horse artillery of the TF consisted of fourteen independent batteries, each with its own ammunition column, one such battery being attached to each TF mounted brigade. The field artillery of a Territorial division consisted, like the Regular divisions, of three brigades of guns and a brigade of howitzers, but in this case the guns were 15-pounders, the brigades consisting of three four-gun batteries, and the howitzers were the 5-inch type, with two four-gun batteries in each brigade. The TF horse batteries were also equipped with 15-pounder guns, but of a different type.

These three types of gun had been replaced in the Regular Army by the newer models, the 13 and 18-pounders and the 4.5-inch, during the decade up to 1914. The Territorial batteries were also re-equipped

with the newer guns and howitzers, mostly between November 1915 and February 1916.

The establishments of a gun or howitzer brigade TF, on a peace footing, were consequently smaller, being twenty-three officers and 606 men for a gun brigade, sixteen officers and 377 men for a howitzer brigade, and eight officers and 216 men for a horse battery. These included the small permanent Regular staff which consisted of an adjutant and an acting sergeant-major for each brigade and two sergeant-instructors for each battery. Two of the horse batteries were formed from the Honourable Artillery Company, Britain's oldest volunteer unit.

It should be noted that, thanks to the far-sightedness of those who planned the Territorial Force in 1908, TF artillery units specifically included ammunition columns from the outset, unlike the Regular units where personnel to form the nucleus of the columns were included in peacetime battery establishments.

CHANGES DURING THE WAR

At the outbreak of war the establishment of cavalry divisional artillery was two horse artillery brigades, which gave each of the four cavalry brigades in the division one horse battery. There was a small artillery headquarters staff commanded by a colonel. However, shortly afterwards, the establishment of a cavalry division was reduced to three brigades of cavalry; the artillery was therefore reorganized into brigades of three horse batteries, and the artillery brigade headquarters also functioned as the HQ of divisional artillery. From this point onwards, too, the batteries were permanently attached to each cavalry brigade and formed part of their establishment.

The artillery of an ordinary infantry division consisted of three field artillery brigades and a field howitzer brigade, a total of fifty-four guns and eighteen howitzers (which in fact was identical with that of a German infantry division). There was originally also a single battery of four 60-pounder guns, but the heavy artillery, which was taken out of divisions and grouped under Corps and Army control from February 1915 onwards, is covered in Chapter 3.

Territorial Force divisions had only thirty-six guns and eight howitzers under the pre-war peace establishments, plus a heavy battery of four of the old 4.7-inch guns, which had been replaced in the Regular divisions by the 60-pounder.

The British Expeditionary Force originally mobilized six infantry divisions, of which four were initially sent to France, but a further five divisions were formed during the first six months of the War, from Regular troops withdrawn from overseas stations plus the very few remaining at home. In addition, India mobilized the 3rd Lahore and 7th Meerut divisions. All these divisions were complete as regards infantry and most other services, but were not fully equipped as regards artillery: their deficiency mainly stemmed from a lack of reserves of the 4.5" howitzer. During 1915 these divisions were given at least one battery of howitzers by stripping many of the other Regular and New Army divisions of single howitzer batteries.

The first three New Armies were formed with the authorised Regular establishments, but in January 1915 (War Office letter 20/Artillery/3818, A.G.6) it was decided that each of their artillery brigades, whether gun or howitzer, should consist of four four-gun batteries, reducing their strength to forty-eight guns and sixteen howitzers. In May 1916 there was a further reorganization of divisional artillery. Each division now consisted of forty-eight guns and twelve howitzers, but the artillery brigades were now mixed, three brigades in each division containing a single battery of four howitzers. This change was achieved by making single-battery swaps between the brigades in each division.

In a further reorganization at the same time, brigade ammunition columns were abolished, and divisional

ammunition columns were divided into A and B echelons, the first remaining with the division but the second normally withdrawn and grouped under Corps control.

A further change was made at the end of 1916, which was the final change of the War. Batteries were restored to a six-gun or six-howitzer establishment, normally by breaking up one of the artillery brigades in each division and using it to make two of the others up to the new strength: the fourth brigade was withdrawn and used to form similar brigades under the control of Corps and Armies. The purpose of this change was to provide a reserve with which to strengthen divisions in action, rather than using the artillery of a division whose infantry were being rested, as was formerly the case, and which gave the artillerymen virtually no rest.

After the changes, divisional artillery consisted of thirty-six guns and twelve howitzers, whether the division was Regular, Territorial or New Army. The impact of all these changes is summarised in the table on the following page. However, it should be noted that this applies to the Western Front in particular, and divisions elsewhere did not always make the same changes. Also, divisional artilleries were not always reorganized strictly along the lines indicated above. For those interested in the artillery of a particular division, the relevant volume of A F Becke's "Order of Battle of Divisions" should be consulted, as a very large proportion of the footnotes to his Order-of-Battle Tables relate to the restructuring of field artillery brigades and batteries. (It may not be irrelevant that Becke himself was a former Royal Field Artillery officer!)

As an example, the table for 42nd Division shows how 6th Lancashire Battery, the third battery of I East Lanes Field Artillery Brigade of the Territorial Force, metamorphosed into B Battery CCX Brigade RFA, or B/210 for short. The exploits of this, the Burnley Battery, will be familiar to many WFA members through Jack Horsfall's book "The Long March". The "Western Front 1914-1918" volume of Sir Martin Farndale's history of the RA during the First World War is also useful, and in particular Annex D which gives a fuller explanation of the wartime changes.

GUN ESTABLISHMENTS OF A DIVISION: NUMBERS OF BATTERIES

	<u>1st Bde</u>	<u>2nd Bde</u>	<u>3rd Bd</u>	<u>4th Bde</u>
Regular 1914	3x6 guns	3x6 guns	3x6 guns	3x6 howrs
Territorial 1914	3x4 guns	3x4 guns	3x4 guns	2x4 howrs
New Armies 1/15	4x4 guns	4x4 guns	4x4 guns	4x4 howrs
Regular 6/15	3x6 guns	3x6 guns	2x6 guns	2x6 howrs
New Armies 6/15*	4x4 guns	4x4 guns	4x4 guns	3x4 howrs
Regular 5/16	3x6gun, 1x4h	3x6gun, 1x4h	2x6gun, 1x4h	(none)
Territorial 5/16	3x4gun, 1x4h	3x4gun, 1x4h	3x4gun, 1x4h	3x4 guns
New Armies 5/16	3x4gun, 1x4h	3x4gun, 1x4h	3x4gun, 1x4h	3x4 guns
All types 1/17**	3x6gun, 1x6h	3x6gun, 1x6h	(none)	(none)

*: Some of the New Army howitzer brigades, mainly in the first three New Armies, had given up one battery to help make up some of the Canadian and late-formed Regular divisions.

** : Army Field Artillery brigades were formed at this time by withdrawing about one-quarter of the strength of divisional artilleries. These brigades, organized on the same basis as the new divisional brigades, were grouped under Army control and attached to Corps and Divisions as need arose.

It is an indication of the scale of warfare on the Western Front that, in the course of the War, some 100 million 18-pounder shells were fired, at an average cost of £2 17s 0d each, and around 25 million 4.5-inch howitzer shells at £3 19s 0d. At today's equivalent values, the total cost of this ammunition would be in the region of £13,000,000,000 and this does not, of course, include the shells for the heavier guns, or the ammunition expended at Gallipoli, Egypt and Palestine, Mesopotamia, Salonika or Italy, or the bullets for rifles and machine guns.

The total weight of ammunition shipped to France during the War was 5,253,338 tons. To give some idea of comparison, the total amount of food shipped for the men was 3,240,948 tons but the combined total of oats and hay for the horses was 5,438,602 tons.

CHAPTER 3: THE HEAVY BATTERY

In Chapter 2, we examined the Royal Horse Artillery and Royal Field Artillery units. These two together formed one branch of the Royal Artillery: the other branch, the Royal Garrison Artillery, manned the heavier guns and the fixed guns in coastal and other permanent defences, and also contained nine batteries of mule-carried mountain artillery. The latter were all employed in India except for one battery in Egypt, but in peacetime the RGA provided garrisons for the defences of virtually all the colonies as well as the UK. Australia, Canada, New Zealand and South Africa had artillery as part of their own forces.

In addition to the British mountain batteries, there were twelve mountain batteries in the Indian Army, plus one company of Frontier Garrison Artillery, but otherwise the Indian Army had no artillery arm - a legacy of the distrust which followed the suppression of the Indian Mutiny over half a century before.

THE PRE-WAR COMPOSITION OF THE RGA

The RGA was divided into separate companies, numbered from 1 to 108 (although there were some gaps in the numbers, and only ninety-eight companies in all) plus nine mountain batteries numbered in a separate sequence - the RGA Mountain Division regarded itself as a select body within the RGA, much as the Royal Horse Artillery jealously guarded its elite status from the Royal Field Artillery. The RGA also had a formal seniority list of all its batteries which bore no relation whatever to their numerical sequence: although No. 108 Heavy Battery, raised in 1904, was the junior unit, the senior, until its disbandment in 1907, had been No. 53 Company originally formed in 1779. For some reason No. 53 took precedence even though No. 37 Company was the direct descendant of one of the original two artillery companies raised in 1716, the first such units raised on a permanent footing.

Twelve of the RGA companies were designated as Heavy Batteries and intended to serve with field forces. Six of these were based in India and the remainder in Britain, where one was earmarked for each division of the BEF on mobilization. The latter had been re-armed with the 60-pounder gun by 1914, replacing the older 4.7-inch gun. Three of the RGA companies - Nos. 23, 39 and 107 - specialised in siege work and each of these companies provided two batteries of 6-inch howitzers with the original BEF. These batteries, Nos. 1 to 6 Siege Batteries, were in turn the forerunners of over four hundred other batteries raised during the War to man the heavier-calibre guns of all types.

The Territorial Force had fourteen heavy batteries, one for each Territorial Division, plus six more heavy batteries and seventy-six companies to man coastal and other fortifications in the UK. It also had a mountain artillery brigade of three batteries, which replaced one of the field artillery brigades in the Highland Division.

THE HEAVY BATTERY 1914: OFFICERS AND MEN

Each of the batteries forming part of the BEF - one per division - was commanded by a major, with a captain as second in command, and three subalterns, one as observation officer and one for each pair of guns. There was a battery sergeant-major, a battery quartermaster-sergeant, a farrier-sergeant, six other sergeants, two shoeing-smiths, two saddlers, a wheeler, a smith, two trumpeters, seven corporals, six bombardiers, seventy-four gunners, fifty-one drivers and six batmen (two for the major, one each for other officers). Two privates RAMC were attached to the battery.

Also forming part of the battery was a small ammunition column which consisted of a subaltern, a sergeant, a shoeing-smith, a saddler, a wheeler, a smith, a corporal, a bombardier, eight gunners, thirteen drivers and a batman. The total battery strength was therefore six officers and 192 other ranks. In addition, a detachment was left at the base consisting of seventeen gunners as a 10% first reinforcement, plus two storemen. Not included in these numbers were an artillery clerk for each battery who formed part of the records section of the Adjutant-General's Office at the base, and two ASC drivers who

formed part of the divisional train, and who drove the two two-horsed GS wagons allowed for the battery's baggage and supplies. The establishments also included twelve acting bombardiers: ten with the battery and two with the ammunition column.

The peace establishments were somewhat smaller, being five officers and 143 other ranks. The shortfall, which was made up on mobilization by the recall of reservists, mainly represented the members of the ammunition column. The annual basic pay of a peacetime battery, excluding various allowances, amounted to £4,564 15s 7 1/2d which, adjusting for inflation, is equivalent to about £180,000 today.

HORSES AND VEHICLES

There was a total of twenty-nine riding horses: two for the major in command and one each for every other officer, the BSM, the BQMS, the farrier-sergeant, four of the other six sergeants, the two trumpeters, nine of the rank and file (the observation party and the corporal of the telephone detachment) and two spare. As well as the officer, the sergeant and corporal of the ammunition column were also mounted. There were one hundred and fifteen draught horses, including fifteen spares, and all but six of these were of heavy draught type, normally Clydesdales or Shires.

The battery's most important vehicles were, of course, its four 60-pounder guns. Each gun, with its limber, constituted a load for eight horses. There were also twelve limbered ammunition wagons, eight with the battery and four with the ammunition column, all of which were four-horsed, as were the three GS wagons for technical stores, two with the battery and one with the ammunition column, and the telephone wagon. There was a two-horsed GS wagon for the cooks and a two-horsed water cart, making eighteen vehicles excluding the guns. The battery was also provided with one bicycle for internal communication purposes, its rider being detailed from the rank and file. The water cart and the telephone wagon were drawn by light draught horses of the same type as used by the ASC.

THE SIEGE BATTERY 1914: OFFICERS AND MEN

Siege batteries were included in "War Establishments" among those units which might or might not be required in the BEF according to circumstances. In the event, six batteries each of four 6-inch howitzers were sent to France in September 1914, and this weapon became in due course the most numerous of the medium and heavy guns used on the Western Front.

The establishment of a battery was similar to that of a 60-pounder battery, but with one more sergeant, one more shoeing-smith, another smith, one less corporal, two more bombardiers, sixteen more gunners and four fewer drivers. The BSM and BQMS were replaced by a CSM and CQMS, this being the normal RGA terminology. There were no RAMC personnel attached to the battery as such, and ammunition columns were provided on a basis of one for every two batteries. These columns consisted of a captain and two subalterns, a CSM, a CQMS, a farrier-sergeant, three other sergeants, two shoeing-smiths, two saddlers, two wheelers, two trumpeters, three corporals, three bombardiers, forty gunners, forty-one drivers and three batmen.

There were therefore five officers and 177 other ranks in a battery, and three officers and 104 other ranks in the ammunition column. These establishments included nine acting bombardiers in each battery, and four in each ammunition column. Batteries were grouped in fours originally, under an artillery brigade headquarters consisting of a lieutenant-colonel, an adjutant, a medical officer, a veterinary officer and thirty-three other ranks.

Each battery left a 10% first reinforcement at the base, consisting of a subaltern, two sergeants, two corporals, two bombardiers, fifty-five gunners and a batman. Each battery and each ammunition column

also left a storeman to look after the men's spare kit.

HORSES AND VEHICLES

There were two riding horses for the major commanding, and one each for the other officers, the CSM, the CQMS, the farrier-sergeant, the two trumpeters and six of the rank and file, namely the members of the observation party. In the ammunition column, all sergeants and above were mounted, as were the two trumpeters and two other NCOs.

The battery's four guns were each drawn by eight horses. There were eight GS wagons for ammunition and two for technical stores, all four-horsed, and three two-horsed carts, for water, telephone cable and the observing instruments. The latter were all drawn by light draught horses, the guns and GS wagons by heavy draught horses of which there were also eight spare in each battery, making a total of seventeen riding horses and eighty-six draught horses per battery. The ammunition column contained sixteen more four-horsed GS ammunition wagons, a two-horsed water cart and eight spare horses, making a total of thirteen riding horses and seventy-four draught horses.

ARMS AND PERSONAL EQUIPMENT

Men of heavy batteries did not all carry personal weapons. Thirty-six men in each battery and all the gunners and drivers in the ammunition column carried rifles, except that drivers of ammunition wagons had two rifles between three. These rifles were the same short Lee-Enfield pattern as was used by the infantry, and bayonets of 1903 pattern were also carried. All NCOs and men of heavy batteries, whether armed with rifles or not, wore a bandolier of 1903 pattern. No waist belt was worn.

In siege batteries, warrant officers and staff-sergeants still carried a sword which was of a special pattern. Trumpeters were armed with a sword-bayonet, and all other ranks carried both bayonet and rifle. All ranks wore a leather waist belt fitted, except for those armed with swords, with two fifteen-round leather cartridge pockets.

Other personal equipment included a haversack containing food and cutlery, worn on a webbing strap over one shoulder, a water bottle, also with a form of strap carrier, and a mess-tin. The latter was one of two types standard throughout the Army: a flattish circular tin for mounted men and a deeper type with a D-shaped cross-section for dismounted men, but in heavy batteries all ranks carried the mounted pattern and in siege batteries all ranks carried the dismounted pattern.

GUN DETACHMENTS

The crew of both the 60-pounder and the 6-inch howitzer consisted of ten men, of whom nos. 1 to 5 were the men who actually fired the gun and nos. 6 to 10 were reserves who were also responsible for keeping the gun supplied with ammunition. The larger guns used later in the war, such as the 6-inch gun and the 12-inch howitzer, had crews of thirteen or fourteen per gun.

REORGANIZATIONS OF THE HEAVY ARTILLERY

By February 1915 the 60-pounder guns and their older equivalents, the 4.7-inch guns, had been withdrawn from divisions and grouped, with the 6-inch howitzers and larger guns, under Corps or Army control. There were in due course two heavy artillery groups for each Corps (later increased to four) and two for each Army, the latter being the heaviest guns, including all guns on railway mountings. The groups normally contained five batteries, and the batteries consisted normally of four guns of medium types (60-pounders, 4.7-inch and 6-inch guns and 6-inch, 8-inch and 9.2-inch howitzers) or two guns of heavier types. Apart from the 60-pounders (and the 4.7-inch guns which they gradually displaced) which retained the title of heavy battery, other batteries of medium and heavy guns were all designated as siege batteries. For the transport of these guns, and their ammunition, one company of the Army Service Corps was attached to each Corps and Army.

The grouping and handling of heavy artillery, both tactically and administratively, was a frequent source of contention between the War Office, the General Staff in France and the artillery commanders. The latter were unhappy with the grouping arrangements, particularly as batteries were shifted between groups fairly often and thus lost a sense of being permanently part of a larger unit. Eventually the "powers that be" gave in, and the heavy artillery was grouped into brigades from mid-1917 onwards. Also in 1917, batteries of 60-pounders and 6-inch, 8-inch and 9.2-inch howitzers were increased from four to six guns, for the same reasons that the field artillery had made the same change - the shortage of good battery commanders, and the need to economise generally in men, horses and materials.

From 1917 there were five types of heavy artillery brigade:

- i) Mobile brigades, consisting of two batteries of 60-pounders and two batteries of 6-inch howitzers;
- ii) Mixed brigades, the same plus one battery each of 8-inch and 9.2-inch howitzers;
- iii) 8-inch howitzer brigades, of three batteries of 6-inch and one of 8-inch howitzers;
- iv) 9.2-inch howitzer brigades, of three batteries of 6-inch and one of 9.2-inch howitzers;
- v) Army brigades, which were administrative only, and looked after batteries of 6-inch, 9.2-inch, 12-inch and 14-inch guns, and 12-inch and 15-inch howitzers. These pieces, apart from the 6-inch guns and some of the 12-inch howitzers, were all on railway mountings.

There were still four 6-inch guns per battery, and two per battery for other types in this grouping, except for the 15-inch howitzer where one gun constituted a battery. (The six batteries of this calibre in France at the Armistice were all manned by the Royal Marine Artillery.) The 8-inch and 9.2-inch howitzers and the 6-inch guns were normally moved by means of caterpillar tractors, operated by the ASC company designated for the heavy artillery of the Army or Corps.

ALLOCATION OF HEAVY ARTILLERY DURING THE WAR

Published information on the detailed allocation of heavy artillery to brigades, and attachment to corps and armies, is scant. The final volume of A F Becke's "Orders of Battle" covering the higher formations omits the army and corps troops for reasons of space and economy, and very few heavy and siege batteries served with divisions after February 1915. A good summary of the reorganizations to which the heavy artillery was subjected may, however, be found in Annex E of Sir Martin Farndale's history of the RA, and Rev IBM Frederick's Lineage Book, whilst not including all allocations, gives the dates of raising of batteries and brigades and often their original compositions (see Sources, at the end of this Factsheet).

For those readers interested in the heavy artillery who are able to visit the Public Record Office at Kew, there is a particular file, reference WO95/5494, which consists of a series of folders. Folders A, B and C give the distributions, allocations and composition of the siege batteries, the Canadian siege batteries, and the heavy batteries respectively. Folder D gives similar information for the Army horse and field brigades, and the remainder of the set covers the ASC, RAMC and some other units.

The attached Table A, giving the heavy artillery distribution in France at the Armistice, is taken from the recently republished Order of Battle as at that date. There are minor discrepancies between the text and the index but the table represents a collation of both with the order given by Sir Martin Farndale. Similarly, Table B on page 19, giving the number of actual guns and howitzers at that date, is a collation between the Order of Battle and several tables given in "Statistics" as at dates close to the Armistice: although there are some discrepancies, they are small enough not to distort the general picture of the relative distribution of the different types of gun.

TABLE A: HEAVY ARTILLERY IN FRANCE, NOVEMBER 1918

At the Armistice, the heavy artillery in France and Flanders was distributed as follows:

	<u>First Army</u>	<u>Second Army</u>	<u>Third Army</u>	<u>Fourth Army</u>	<u>Fifth Army</u>	<u>L of C</u>
Mobile brigades	4	3	4	4	2	-
Mixed brigades	5	5	3	6	1	-
8" howr brigades	5	4	4	5	3	-
9.2" howr brigades	6	4	5	3	2	-
Army brigades	2	2	3	1	2	-
6" gun batteries	7	8	10	9	4	-
Heavier batteries	9	11	9	6	7	1
Half-batteries	5	1	2	3	3	1

CHAPTER 4: THE DIVISIONAL AMMUNITION COLUMN

The supply of ammunition in the field was kept entirely separate from the supply of food, fuel, clothing and so on, since the latter, which was handled by the ASC. took place on a more or less regular basis, irrespective of whether the units concerned were fighting, manning trenches, or - nominally at least - resting in rear areas. Ammunition supply, however, depended very heavily on whether or not fighting was in progress or planned, and the separation of responsibility ensured that the ASC supply services were not swamped by having to carry, at short notice, vast supplies of artillery shells and rifle and machine gun bullets.

Each infantry battalion carried a reserve of ammunition amounting to 100 rounds per man and 8,000 rounds per machine gun, and each field artillery brigade contained a brigade ammunition column which held reserves for its own unit, and also reserves of rifle ammunition for one infantry brigade. For details of these brigade ammunition columns, see Chapter 2.

The next echelon of ammunition supply was the divisional ammunition column. This was a unit of Royal Artillery, commanded by a lieutenant-colonel, and divided into four sections. Three of these sections supplied gun and rifle ammunition to one field artillery brigade and one infantry brigade, and the fourth supplied ammunition to the division's field howitzer brigade and heavy battery. Like the ordinary field artillery, the latter two units also contained smaller ammunition columns within their own establishments.

Divisional ammunition columns were not maintained in peacetime, for either the regular forces or the Territorial Force, but were formed as new units on mobilization.

OFFICERS AND MEN

The divisional ammunition column consisted of fifteen officers and 553 other ranks. The headquarters consisted of a lieutenant-colonel in command, an adjutant (captain or subaltern), a sergeant-major who was a warrant officer, a battery sergeant-major, a battery quartermaster-sergeant, two trumpeters, two orderlies for the medical officer, seven drivers and six batmen, with an officer, a corporal and three privates of the RAMC and a veterinary officer attached.

The four sections were commanded by captains except that the senior section commander was a major. Besides the section commander, each of the first three sections contained two subalterns, three sergeants, a farrier-sergeant, four shoeing-smiths, two saddlers, two fitters or wheelers, two corporals, five bombardiers, thirty-three gunners, ninety-three drivers and three batmen.

The fourth section handled ammunition for the howitzer brigade and the heavy battery. The howitzer portion consisted of the section commander, a sergeant, a farrier-sergeant, a shoeing-smith, a saddler, a fitter or wheeler, a corporal, a bombardier, ten gunners, forty-two drivers and a batman. The heavy portion consisted of a subaltern, a sergeant, a shoeing-smith, a corporal, a bombardier, six gunners, fourteen drivers and a batman.

There was a first reinforcement left at the base of four storemen (one for each section), a subaltern, two sergeants, thirty gunners and twenty drivers. There was also an artillery clerk for each column, forming part of the Adjutant-General's Office at the base. Also attached to the column, but not included in the totals above, were nine ASC drivers who drove the vehicles of the divisional train allocated to the column's baggage and supplies.

The above establishments included sixteen acting bombardiers: one of the MO's orderlies, four with each of the first three sections, two with the howitzer portion and one with the heavy portion of No. 4 Section.

ARMS AND PERSONAL EQUIPMENT

Men of divisional ammunition columns did not all carry personal weapons. Each gunner and driver carried a rifle, but warrant officers, NCOs, artificers and buglers were unarmed. The rifles were the same short Lee-Enfield pattern as was used by the infantry, but bayonets were not carried. All NCOs and men, whether armed with rifles or not, wore a bandolier of 1903 pattern as described in Chapter 1, without a waist belt.

HORSES AND VEHICLES

There were two horses each for the CO and adjutant and one each for the other officers, the sergeant-major, the BSM, the BQMS, the four farrier-sergeants, the two trumpeters, all the sergeants and corporals, three of the five bombardiers in each of the first three sections and the bombardier in No. 4 section howitzer portion, plus one for the interpreter provided by the French authorities, making a total of fifty-six with the column.

There were in all 653 draught horses with the column, including fifty-eight spares. Most of these were the normal light draught type but there were twenty-eight, including two spares, of the heavy draught type - Shires or Clydesdales. Two of these pulled the cooks' wagon with the column HQ and the remainder were with the heavy portion of No. 4 Section.

The headquarters had a one-horsed Maltese cart for the MO (driven by one of his orderlies), two two-horsed water carts, a two-horsed cooks' wagon, a six-horsed wagon for technical stores, and two bicycles for intercommunication, plus one spare horse. Each of the first three sections had twenty-one GS wagons carrying 18-pounder ammunition and six GS wagons carrying small-arm ammunition, all six-horsed, plus sixteen spare horses, and one bicycle. The howitzer portion of No. 4 section had twelve six-horsed GS wagons for 4.5-inch howitzer ammunition plus seven spare horses and a bicycle, and the heavy portion had six four-horsed GS wagons for 60-pounder ammunition and two spare horses.

Not included in the above totals were the vehicles of the divisional train which carried the column's baggage and supplies. There were nine of these, all two-horsed GS wagons: one for the supplies of the column HQ and one each for baggage and supplies of each of the sections. The baggage of the headquarters was carried by the section baggage wagons.

OTHER AMMUNITION SUPPLY UNITS

The L of C units included a divisional ammunition park for each infantry division, which received ammunition from the bases and special ammunition depots and conveyed it to rendezvous with the divisional ammunition columns. These divisional parks were ASC units equipped with motor transport, and each consisted of seven officers and 464 other ranks, including a small number of Royal Artillery personnel attached for the care and handling of the ammunition itself. The park was divided into four sections: two handled all 18-pounder ammunition for the field artillery, the third contained ammunition for the howitzers and heavy battery, and the fourth handled rifle and machine gun ammunition. There were similar ammunition parks for the cavalry divisions, which delivered supplies of ammunition direct to the horse artillery brigade ammunition columns.

THE REORGANISATION OF MAY 1916

As part of the overall review of the structure of the BEF and its units, prior to the Battles of the Somme, there was a reorganisation of the field artillery, which included the abolition of artillery brigade ammunition columns and the absorption of their functions by the divisional ammunition columns. The latter were divided into 'A' and 'B' echelons: 'A' echelon, consisting of three sections, would remain with the division at all times and each section would normally supply one field artillery brigade as before. 'B' echelons, whilst they formed part of their divisions, were normally withdrawn and grouped under Corps control.

At this time also the divisional ammunition parks, hitherto controlled by the lines of communication, were made GHQ troops. One park was normally attached to each corps, with a sub-park for each of its divisions. (Incidentally, this parallels the change, at the same time, in the normal supply arrangements for commodities such as food, fuel, clothing and animal fodder.)

This system was to be further amended with the creation of ordnance ammunition sections, under the control of field armies, of which there were 109 in France and Belgium at the Armistice, or not quite two sections per division.

Each army and corps also had a mechanical transport company ASC whose responsibility was to supply ammunition direct to the heavy artillery batteries and brigades attached to the army or corps.

TABLE B: GUNS AND HOWITZERS IN FRANCE, NOVEMBER 1918

13-pounder horse artillery guns	56
13-pounder AA guns	244
3-inch AA guns	106
18-pounder field guns	3144
4.5-inch field howitzers	984
60-pounder guns	456
6-inch guns	152
6-inch howitzers	1042
8-inch howitzers	240
9.2-inch howitzers	224
9.2-inch guns	16
12-inch howitzers	65
12-inch guns	5
14-inch guns	3
15-inch howitzers	6

SOURCES

(A) CONTEMPORARY OFFICIAL PUBLICATIONS (BY HMSO)

Army List August 1914
Army Orders 1914 (especially Army Orders 324, 382 and 388 of 1914)
War Establishments 1914 (Expeditionary Force) and 1915 (New Armies)
Peace Establishments 1913-14
Army Estimates 1914-15
Field Service Regulations 1909, Parts I and II
Field Service Pocket Book 1914 (reprinted by David & Charles, Newton Abbot, 1971)
Field Artillery Training 1914
Garrison Artillery Training 1914
Clothing Regulations 1914, Parts I and III
Equipment Regulations 1914, Part 2: Section XI (horse and field artillery), Section XII (garrison artillery)
Order of Battle, British Armies in France, 11 Nov 1918 (reprinted by Imperial War Museum, 1989)
Field Service Manuals: Horse Artillery Brigade 1908, Field Artillery Brigade 1908,
Field Artillery (Howitzer) Brigade 1908, Heavy Battery & Ammunition Column 1910

(B) OFFICIAL HISTORY OF THE GREAT WAR

Edmonds J E, Military Operations France and Flanders, 1914 Vol. 1
(reprinted by Shearer Publications, Woking, 1984)
Edmonds J E, Military Operations France and Flanders, 1916 Vol. 1
(reprinted by Shearer Publications, Woking, 1986), Chapter IV
Becke A F, Order of Battle of Divisions (HMSO 1934-1945)
reprinted by Sherwood Press, Nottingham (Part 1 1986, Part 2A 1987)
and Ray Westlake, Newport, Gwent (Part 2B 1988, Parts 3 A and 3B 1989, Part 4 1990)
Statistics of the Military Effort of the British Empire during the Great War 1914-1920
(reprinted by London Stamp Exchange, 1992)

(C) OTHER SUGGESTED READING

Barnes RM, The British Army of 1914 (Seeley Service, London, 1968)
Cave T, The Gunners (WFA Fact Sheet 4, 1989)
Chappell M, British Infantry Equipments 1908-1980 (Osprey Publishing, London, 1980:
No 108 in Men at Arms series)
Chappell M, British Cavalry Equipments 1808-1941 (Osprey Publishing, London, 1983:
No 138 in Men at Arms series)
Farndale M, History of the Royal Regiment of Artillery: Western Front 1914-1918
(Royal Artillery Institution, London 1986)
Frederick J B M, Lineage Book of British Land Forces 1660-1978
(Microform Academic Publishers, Wakefield, 1984)
Simkins P, Kitchener's Army: the Raising of Britain's New Armies, 1914-16
(Manchester University Press, 1988)