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**NOTES FROM THE FRONT,
PART III.**

AND

**FURTHER NOTES ON FIELD
DEFENCES.**

COLLATED BY THE GENERAL STAFF,
FEBRUARY, 1915.

LONDON:
PRINTED UNDER THE AUTHORITY OF HIS MAJESTY'S
STATIONERY OFFICE
By HARRISON AND SONS, 45-47, ST. MARTIN'S LANE, W.C.,
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PREFACE.

A copy of these Notes should be issued to every officer. It is not intended that this pamphlet shall in any way take the place of the existing Training Manuals, and it should be read in conjunction with the official text books.

NOTES FROM THE FRONT, PART III., AND FURTHER NOTES ON FIELD DEFENCES.

I.—TRAINING IN ALL DUTIES AT NIGHT.

1. Units of all branches of the Army should practise carrying out all their duties after dark. It is frequently impossible to carry out the simplest manoeuvre or duty by daylight owing to the artillery fire. It is recorded that some units when in billets have suffered severely from shell fire owing to the ration wagons coming up in daylight and the men crowding round for the issue of rations.

Reliefs of the trenches and reliefs of all duties have to be carried out after dark, and certain units which had neglected to practise this work in peace time suffered from confusion, discomfort and delay.

2. The following task fell to an infantry brigade, and an exercise based on a similar task would afford useful brigade or battalion training.

At about 10 p.m. the brigade received orders to take over a frontage of about 3,000 yards of quite unknown ground which had been previously occupied by the cavalry. The position had to be taken up entirely from the map and it was necessary that the battalion and company officers concerned should be able to take up their positions in the dark by this means. A frontage of about a thousand yards was allotted to each of three battalions. The battalion commanders divided up their frontages between their company commanders, and owing to all officers of the brigade being fully trained the line was taken up without any noise or confusion, and it was found next day that there were no gaps in the line.

3. Training in removing and putting on equipment in the dark and in the supply of ammunition should also be practised.

II.—HOUSES AND VILLAGES.

1. When attacking a village, the street, which is usually swept by rifle and machine gun fire, should be avoided as far as possible.

2. Houses are difficult to hold when under shell fire, and it is better to remain in dug-outs or trenches in rear when shelling is in progress. When the enemy's infantry advances

our own infantry should return to the houses and open fire through the loop-holes or from behind other cover.

3. In an advance by day the scouts should be well in front so that they may have time to work. There may be a haystack or building in front with a machine gun behind it, and if a battalion advances before the scouts have made good the ground the battalion may suffer severely.

III.—OBSERVATION OF ARTILLERY FIRE BY OTHER ARMS.

1. Useful work can be done by other arms in locating targets for the artillery and in assisting the artillery in their fire. In some cases, however, the information given has not been sufficiently definite, and the co-operation has been correspondingly inadequate.

The following are two instances of this :—

(a.) An infantry non-commissioned officer brought the following message to the officer in charge of a battery—

“We are being worried by some guns about 10 o'clock from our trenches. Please silence them.”

The non-commissioned officer could not say where these trenches were.

(b.) The infantry stated exactly where the hostile shells were falling and added—

“We have not the least idea where they are coming from.”

2. Reports should always be explicit and free from vagueness.

The following points will assist the artillery :—

(a.) The point on the map, as near as possible, from which observation is made, and the range and bearing (magnetic or true) from that point to the target.

(b.) In correcting fire, the amount of alteration required should be given in yards. The terms “right” or “left” are apt to mislead, being dependent upon the relative position of the observer and the battery. The compass bearing is more valuable. For instance, “Shells are falling 250 yards south-east of the target (description).”

- (c.) Particulars of the target are important. Its nature, extent and situation should be described in exact terms whenever possible.
- (d.) In the case of guns, the position or probable position of the enemy's observing station.

IV.—PROTECTION OF TROOPS FROM HOSTILE ARTILLERY FIRE.

The experience already gained points to the conclusion that one of the most important considerations is the protection of our troops from the fire of the enemy's heavy artillery. Both on the Aisne and on the Lys our troops have remained for weeks in trenches in close proximity to those of the enemy, and have been subjected to bombardments which have caused them heavy casualties.

The methods of dealing with this problem are :—

- (a.) Subjection of the enemy's artillery.
- (b.) Reduction of the number of troops exposed to artillery fire.
- (c.) Improved entrenchments.
- (d.) Concealment.

(a.) As regards the subjection of the enemy's artillery, certain difficulties arise. The enemy's batteries are nearly always concealed from all but aeroplane observation. They usually refrain from firing while our aeroplanes are reconnoitring, which makes them difficult to locate even by this means. Moreover, there is a limit to the number of our aeroplanes available for observation, to the time they can spend in the air, and to the amount of ammunition that can be devoted to the task of engaging the artillery when it has been located.

(b.) The moral effect of the fire of heavy guns and howitzers is very considerable. Fire, however, usually ceases just before the hostile infantry advances. It is generally best to vacate the trenches, leaving only a couple of look-out men in them whilst the bombardment goes on, and as soon as it ceases to man what is left of the trenches. The barbed wire helps to reduce the chance of surprise. The Germans generally select for their bombardment a line

of trench not more than 100 or 150 yards long, and this they practically demolish.

On one occasion two battalions were allotted to a certain line. They had hardly reached their places when the enemy's artillery opened a bombardment. One battalion at once began entrenching, although it takes at least an hour's digging to obtain cover from artillery fire. The other battalion left two men on the flanks of their allotted position in order to mark the line, and the remainder retired a short distance into a field of heavy crops where the men laid down.

The battalion which had begun digging suffered severely from the artillery fire. The other battalion escaped observation, and was consequently not shelled, and when the hostile infantry pressed on, it was moved up to the selected position ready to meet the attack.

The moral of this incident is that unless really good cover from artillery fire can be obtained, it is best to try to escape notice.

It is, of course, necessary to man the fire trenches at night or during foggy weather with sufficient men to be able to beat off an attack. The actual number necessary must be decided by the commander of the section of defence, having regard to the length of his line and the troops available. But during the day it is not necessary to hold the front line of trenches strongly, provided reinforcements can be brought forward in sufficient time should an attack develop. The problem to be solved, therefore, is how best to provide suitable protection for the supporting troops, and how to bring the latter forward rapidly to the front line of trenches in case of necessity. This necessitates a careful choice of position for supports, and the construction of good communicating trenches from these positions to the front line. In this connection certain difficulties arise. If the troops be kept concentrated in support and their position be discovered they may suffer more seriously from shell fire than if they had remained in the front line of trenches. If they be distributed in small groups the exercise of command becomes difficult. Every case must therefore be carefully considered on its merits, and the losses from artillery fire will greatly depend on the manner in which the above factors are dealt with.

(c.) Notes on the construction and siting of entrenchments have already been dealt with in other memoranda (*see also* pages 43-59). The great point is to lose no time and to gain as much immunity as possible before the enemy opens fire.

(d.) The facility with which our aeronauts have been able to locate our own trenches in comparison with those of the enemy has sometimes been marked, and points to the necessity for the exercise of more careful precautions in this respect. This is especially the case as regards support trenches.

There are many conflicting considerations to be taken into account in deciding on the best means of reducing losses, viz., the risk of losing portions of the front line if it be held too lightly; the necessity for resting the men; the exercise of command; the loss of moral when exposed to shell fire, &c. The most skilful commander is he who is able to balance these considerations with judgment, and to arrive at a solution which will spare his men without incurring undue risk.

V.—MACHINE GUNS.

(a.) *Employment by the Germans.*—The German machine guns are used in the attack with boldness and cleverness; they are pushed up close to the hostile trenches, and in this manner sometimes prepare the way for the infantry attack.

They are often used in conjunction with snipers.

Machine guns are used in large numbers against one or both flanks of the portion of the position which it is intended to attack. They usually cross their fire, which makes them difficult to locate from the portion of the trenches opposite them.

One attack was carried out solely by machine guns. The trench was engaged from a flank by six or seven guns, while other machine guns succeeded in working round and enfilading the position.

The exact range is usually obtained by opening bursts of fire as soon as a suitable fire position has been occupied, after which the Germans satisfy themselves by preventing the defenders, as far as possible, from showing above the parapet, thus enabling their own troops to approach in security. The closer they can approach a trench, the more

oblique becomes their fire. The duration and volume of the fire depend on the ground over which the advance of their own infantry has to be made, but they are careful to husband their ammunition, as the ammunition supply is the chief difficulty with these guns.

When the advance of their own infantry has passed the machine guns, the Germans try to place the latter in positions whence they can assail the enemy as he retires from his trenches, or, alternatively, in the event of a counter attack, to open fire in such a way as to allow their own infantry to withdraw.

The Germans do not often make use of machine guns at night. On one occasion when a machine gun maintained fire longer than usual as it was getting dark, its flashes were soon observed and it was put out of action by rifle fire. Except when it is necessary to stop an infantry attack at short range, the heavy expenditure of ammunition coupled with the small results obtained render night firing with machine guns of doubtful value.

(b.) *Position in the trenches.*—It is essential to protect a machine gun from frontal fire by means of a traverse. A machine gun in this position should not disclose itself until the enemy is within 100 yards of the trenches. It is well to have spare sand bags at hand so that cover may quickly be improved. A machine gun will soon cut down a traverse made of ordinary earth, and a traverse specially meant to withstand machine-gun fire should consequently include gravel or a piece of iron in its composition.

VI.—IMMEDIATE REPLACEMENT OF CASUALTIES.

It is essential that platoon and section commanders should be trained to take up immediately any higher command which may suddenly become vacant, and to take charge of men who are leaderless. If an officer or N.C.O. leading a body of men is killed or wounded confusion prevails unless someone immediately takes his place and issues orders. A few seconds will often make a great difference. Troops must be thoroughly practised in being mixed up and in taking orders from the senior officer or N.C.O. of any group which finds itself together.

VII.—THE RIFLE AND THE BAYONET.

1. Rapid fire at short ranges is all-important, and the great attention which has been paid to training in rapid fire during recent years has been of the greatest value.

This training must be practised by all concerned to ensure the necessary degree of accuracy combined with rapidity. Rapid charging and recharging of magazines should be constantly practised at all times.

2. It is essential to teach men how to use the bayonet. Unless a man has confidence in his own power to use the bayonet he is unlikely to wish to come to close quarters.

VIII.—CARE OF RIFLES.

A large number of cases have occurred of rifles becoming unserviceable. The following are the principal causes :—

- (a.) Mud in the lock owing to the rifle being rested on a wet parapet, or dropped on wet ground.

The remedy for this is to cover the bolt with a cloth wrapper or an old sock whenever the rifle is not in use and to place canvas on the parapet. The protecting material can be pulled back when it is required to use the rifle.

- (b.) Muddy ammunition resulting in mud in the chamber.

The remedy for this is to prohibit ammunition being put on the ground and to provide boxes or tins in which to place the ammunition.

It is a good plan to rub over the ammunition with an oily rag.

- (c.) Mud in the muzzle owing to rifles being pushed into the sides of trenches.

The only remedy is to see that rifles are clear before firing.

- (d.) Sticking of cartridges owing to dirt in the chamber or magazine. If the chamber be not kept free from dirt the cartridge case may jam and extraction become difficult. Similarly the magazine must be kept clean and oiled, otherwise the platform will not work freely.

- (e.) Rust in the lock and insufficient oiling.

A man's life may depend on the care he has taken of his rifle. The bolt and magazine must be tested every day to make sure that they are working freely. If men are never allowed to keep a cartridge in the chamber many accidents will be avoided.

The first duty of a soldier is the care of his arms and no excuse should be accepted for allowing them to become unserviceable.

IX.—REMOVAL OF EQUIPMENT.

The following extract from an order is published for information :—

Men occupying trenches facing the enemy have been allowed to remove their equipment. Such a practice can only lead, and has already led, to serious consequences.

However trying the circumstances, men must never remove their equipment when in the presence of the enemy, and while on duty in the trenches in the firing line must remain fully equipped.

Packs and haversacks only may be removed at the discretion of commanding officers when the circumstances allow of it.

X.—SITUATION OF HEADQUARTERS.

1. Commanders of all formations must ensure that their headquarters or place to which reports are to be sent are known to all concerned.

This is especially the case where officers command forces composed of several arms.

It is of the highest importance that orders, reports, &c., should arrive promptly. On one occasion it took two officers, two sergeants and eight men three hours to locate an officer commanding a brigade.

2. The Germans make great efforts to locate the headquarters of various formations and as soon as they are located they are shelled. Every effort should therefore be made to reduce the numbers of motors and gallopers going up to headquarters, as its position may thereby be disclosed.

XI.—MAPS OF CAPTURED BRITISH OFFICERS.

Instructions have been issued by the Germans that whenever a British officer is captured, his maps are at once to be taken from him so that he may have no opportunity of destroying them. It has been found that these maps frequently have important information marked on them regarding the dispositions of the British troops. Officers must therefore use every possible means to prevent their maps falling into the hands of the enemy.

This also applies to copies of orders and similar documents likely to prove of value to the enemy.

XII.—AMMUNITION SUPPLY.

1. While the operations were of a mobile nature, as in the cases of the retirement from Mons, the advance up to the battle of the Aisne, or the operations east of Bethune, the normal method of supply as laid down proved satisfactory.

When, however, the operations were of a more stationary character, such as the occupation of the Aisne and the holding of entrenched positions near Ypres, special arrangements were sometimes necessary of which the following is a summary:—

2. A large amount of ammunition was deposited near brigade headquarters which were situated some 500 yards in rear of the centre of the line of trenches held by the brigade. A supply of small arm ammunition was also kept in the trenches of each battalion in boxes distributed among the several companies.

3. The expenditure of ammunition was often considerable, and the headquarters of the brigade were frequently requested to send further supplies to battalions during attacks. On receipt of such messages, men from the reserve carried boxes forward to the firing line, but occasionally small parties from the supports were sent back, and they carried up large numbers of full bandoliers.

4. It was frequently noted that whenever an attack began ammunition was at once demanded, notwithstanding the fact that ample supplies were still in the possession of the firing line.

Each night after dark the small arm ammunition carts brought up fresh supplies from the rear. By day the carts remained some two miles behind under cover.

5. Battalions invariably issued 50 additional rounds per man whenever an engagement appeared probable, and always in the trenches.

6. A brigade small arm ammunition reserve was always formed, and was kept supplied by the nearest brigade ammunition column, usually the brigade ammunition column of the Royal Field Artillery brigade, which formed part of the brigade convoys. This brigade reserve kept the battalion small arm ammunition carts fully supplied, usually refilling them each night.

XIII.—SUPPLY SYSTEM

The following system is reported to work well in the division in which it has been adopted.

For the purposes of supply the division is divided into 6 groups. The composition of the groups varies from time to time, but the following was the normal composition:—

(1) *Divisional troops* consisting of divisional headquarters, headquarters divisional artillery, headquarters divisional engineers, divisional mounted troops, army veterinary corps, headquarters supply section divisional train, howitzer brigade, heavy batteries, signal company.

(2) Divisional ammunition column.

(3) Divisional train (baggage section).

(4) 1st Infantry brigade	Each of these groups consists of infantry brigade headquarters, 4 battalions, 1 field company, 1 field ambulance, 1 brigade field artillery, 1 company divisional train (supply section).
group	
(5) 2nd Infantry brigade	
group	
(6) 3rd Infantry brigade	
group	

Groups (2) and (3) are dealt with by the divisional troops supply officer, but as they are usually from 8 to 12 miles away from the rest of the division their lorries are loaded at railhead and proceed direct to them.

PROCEDURE AT RAILHEAD, RENDEZVOUS AND REFILLING POINT.

1. *Railhead.*—The supply column is divided into 6 sections to correspond with the 6 groups. A non-commissioned officer is in charge of each section. The supply column supply officer gives to each of these a paper showing the supplies he has to load and this non-commissioned officer gives to the "checker" of each lorry a slip showing the quantity of each commodity that he has to load on to his lorry.

The lorries are then backed up to the railway trucks and loaded.

As soon as the lorries are loaded, and their loads checked, they proceed to the supply column billeting area for the night.

Next day at daylight the supply column proceeds, if the division is marching, to the rendezvous. Should the division be stationary, the groups of the supply column proceed direct to refilling points.

2. *Rendezvous.*—At the Rendezvous the column is met by the senior supply officer, who directs (2) and (3) groups to their units billeting areas, and guides the other four sections to their Refilling Points, which can usually be near to one another, to facilitate supervision.

3. *Refilling Points.*—At these points "dumping" is recommended, as it is found to have advantages over the "tail board to tail board" method, which delays the supply column vehicles unnecessarily.

Different commodities should be "dumped" in separate places, not less than a wagon's length apart, and checked by the supply officer as they are "dumped." The supplies of different groups should be kept far enough apart to prevent the wagons of one group getting in the way of those of another group.

The senior supply officer must satisfy himself that his supplies are correct before the supply column returns to Railhead.

As soon as the supply column has drawn off, the supply sections of the train load up by "groups," and proceed to follow their division if it be on the march, or to distribute to their groups if the division be halted.

The supplies thus loaded on to the supply sections of the train are for use on the following day.

XIV.—ORDNANCE SUPPLY—EQUIPMENT AND CLOTHING.

1. A divisional ordnance officer accompanies each division in the field. This officer sees that the wants of the troops are met as regards ordnance stores and clothing, and he is the medium through whom indents are submitted.

2. Units should keep in touch with this officer, and should keep him informed both as regards their immediate requirements and their probable future requirements.

3. Indents should be put forward at regular intervals, and not delayed until the unit requires a large amount of fresh equipment.

4. All units should be impressed with the necessity of economy as regards stores, and should be made to understand the difficulty of supplying an army in the field, even if nothing more than normal wastage occurs.

5. All surplus and repairable arms and equipment, also captured stores which are worth saving, should be collected by units and handed over to the divisional ordnance officer.

6. The work of divisional ordnance officers will be facilitated if units make their demands on the regulation indent form.

7. On no account should stores be accumulated in units as a provision against probable future wants.

8. Indents for ammunition are unnecessary in the case of units who obtain their supplies through the medium of an ammunition column.

9. Special arrangements exist for the supply of certain stores to army signal units.

10. To each brigade of infantry a warrant officer, Army Ordnance Corps, is attached, who will be found of much assistance to units in arranging for their wants to be met.

11. The system of delivery of stores is as follows :—

(i.) Stores for divisional units are conveyed by lorry by the Army Ordnance Department from Railhead to the Refilling points, where they are transferred to the supply wagons belonging to each unit with the divisional train, this transport being supplemented, if necessary, by the regimental baggage wagons.

- (ii.) Units should as far as possible arrange to provide sufficient transport daily to remove all stores from the Refilling point, and a representative of each unit should attend at this point to take over and give a receipt for the stores of his unit.
- (iii.) In the case of cavalry divisions, who have no Refilling point, the lorries deliver direct to units in billets, or, when men are in the trenches, to the first line transport vehicle.
- (iv.) Stores for corps troops are drawn direct from Rail-head by the corps troops supply column.

12. Prompt notice of all changes or pending changes in formations should be given to divisional ordnance officers. This applies more especially to the attachment of corps troops.

13. Units on joining a new formation should, as soon as possible, ascertain that the divisional ordnance officer of that formation is in possession of indents to cover all their outstanding requirements.

14. Any alteration in indents due to casualties or other causes should be at once notified to the divisional ordnance officer.

15. The obtaining of stores by purchase or requisitioning is the duty of the divisional ordnance officer, but when for some particular reason units find it necessary to carry out this duty themselves they must in every case furnish the divisional ordnance officer with a statement of the articles obtained and copies of the receipt notes, a receipt for amounts paid, and a certificate that the articles have been received and are fit for service.

16. Officers requiring equipment or clothing for their personal use, on payment, should send an indent to the ordnance officer of their formation. They will be asked to sign a form authorizing their army agents (or the paymaster paying them) to deduct the value of the articles from their pay.

17. Units should be very careful of entrenching tools in their charge, and this should be impressed on all concerned. It will probably be difficult to replace losses at short notice.

18. Instruction should be given in the assembling and fitting of service harness as early as possible, and in any case

before units are warned to prepare for service overseas. Much delay and confusion, both on mobilization and afterwards, will be avoided if this be carried out.

XV.—BILLETING.

The following arrangements have been found suitable, and are published as a guide:

1. The following are suitable compositions for billeting parties:—

(a.) *Divisional*—

Deputy-assistant quartermaster-general.

Aide-de-camp.

Staff officers, Royal Artillery and Royal Engineers.

An interpreter.

2 motor cyclists.

The assistant provost marshal and an officer of the Royal Army Medical Corps should proceed to the headquarters of the billeting area as soon as possible.

(b.) *Brigade*—

Staff Captain with 2 mounted assistants.

Military mounted police.

An interpreter.

An officer, Royal Artillery, with 2 mounted assistants, should accompany the staff captain of an infantry brigade if artillery units are to be billeted in an infantry brigade area. An officer of the Royal Army Medical Corps and the brigade requisitioning officer should join this party as soon as possible.

(c.) *Regimental*—

1 officer per battalion, an interpreter, and 1 non-commissioned officer per company, with 2 or 3 regimental police.

1 officer and non-commissioned officer per battery, field company, Royal Engineers, field ambulance or divisional mounted troops.

It depends on tactical conditions whether regimental billeting parties can be pushed forward in advance of the fighting troops. Whenever the tactical situation permits they should march in a formed body at the head of their brigades in readiness to move forward. Dismounted men should be mounted on bicycles.

2. (i.) The General Staff fixes generally, according to the tactical situation, the brigade areas, the distribution of troops to those areas, and the general line of protection.

(ii.) Brigade area commanders are responsible for the local protection of their respective areas.

(iii.) The deputy assistant quartermaster-general completes the distribution and fixes the boundaries between areas and units in such detail as may be required, issuing the necessary instructions to the brigade representatives, and, if necessary, assists those representatives to get in touch with the civil authorities.

(iv.) Brigade areas are then sub-divided among the units allotted to the respective areas.

(v.) Officers commanding units similarly distribute their companies, &c., in the sub-areas allotted to them.

(vi.) When the tactical situation permits, infantry should be billeted in villages and mounted troops in the surrounding farms.

(vii.) Sketches of areas should be made whenever possible and handed to units before they arrive in their areas.

3. (i.) The position of brigade area headquarters, and when necessary, of outpost headquarters, should usually be fixed by the divisional staff to ensure certainty of inter-communication.

(ii.) If troops arrive in the billeting area before the billeting arrangements are complete, it is important that the leading troops should clear the line of march so as not to block the movement of units who have to pass through to get to their areas.

(iii.) On arrival in their respective areas the troops will not be dismissed from their alarm posts until all measures for security have been taken and the necessary orders issued.

(iv.) All guards and police must be informed of the position of headquarters of their respective units, and must be prepared to direct any officer or messenger to them without hesitation.

(v.) At night representatives of all units in a brigade area must sleep at brigade headquarters and be prepared to deliver orders as required.

(vi.) In each brigade area a signal should be arranged to warn all ranks of the approach of hostile aeroplanes, when troops must take cover.

(vii.) Horses and vehicles must be concealed as far as possible; regular formations must be avoided when horses are picketed or vehicles parked in the open.

(viii.) All approaches to brigade areas should invariably be blocked by an obstacle at night (preferably by wire).

(ix.) If troops are likely to stay in a billeting area for any length of time, a medical officer should be appointed as sanitary officer for that area.

4. *Discipline and control of civil population.*—(i.) On arriving at a town or village sentries should be posted at all exits until arrangements for protection have been made by the units concerned. Control posts should be established to prevent inhabitants leaving the area or moving in the direction of the enemy.

A sentry who halts a person will not allow him to proceed until he is satisfied that the person is entitled to do so.

The officer or non-commissioned officer posting a sentry must ensure that the sentry understands what are the authorized passes.

(ii.) Divisional orders should be issued as to whether cafés, public houses, &c., are to be allowed to open, and between what hours. Pending the issue of such orders, police should be posted on all such houses.

(iii.) Troops are not to leave their billets without being fully armed and equipped, and only in rare cases (*e.g.*, cooks) should it be necessary for a man to move about even within his billeting area unarmed.

(iv.) A definite time should be laid down by which everyone not on duty is to be in his billet. The hour should, in any case, not be later than 7 p.m.

5. In allotting billets to companies, &c., the following principles should be observed:—

(i.) Headquarters of battalions, &c., must be in a central position and known to all ranks.

(ii.) Each company, &c., must occupy both sides of a street.

(iii.) Officers must be billeted near their men.

(iv.) In allotting accommodation large buildings should be used in preference to small, as supervision, control and food supply are easier; troops can turn out quicker in case of alarm, and chances of sickness or trouble with the inhabitants are minimized.

(v.) Arrangements for water must be notified to all concerned.

(vi.) First line transport should be billeted together.

(vii.) Troops must not use the latrines of the inhabitants. Latrines must, therefore, be dug in suitable places, which must be notified to all concerned.

(viii.) Special precautions must be taken against fire. This is particularly necessary where straw is used for bedding.

(ix.) Cover should be provided for horses whenever possible. It has been found that the average farm in Northern France and Belgium will accommodate at least a half-battery or half-brigade ammunition column.

(x.) Billeting parties should send guides to meet their units, and to conduct 1st line transport and the baggage wagons of the train to their areas.

(xi.) Roads must be kept clear and all transport be moved into yards or fields, or parked clear of traffic space.

(xii.) Before dismissal officers commanding companies, &c., must satisfy themselves that each non-commissioned officer and man under their command understands where his alarm post is, what are the orders in case the alarm is given, and any special orders affecting discipline and interior economy.

(xiii.) All refuse must be burnt or buried under supervision. Burning is preferable, but care should be taken to light fires only in places where the smoke will not disclose the position of troops.

6. The general line to be held by a body of troops and exact points of junction between adjacent units or formations must be clearly defined by the General Staff of the commander of the whole. Thus, in the case of a corps, the line to be held by the corps, and if two divisions are disposed side by side the frontage for which each division is responsible and the point of junction between them, are fixed by the corps headquarters. The same principle must be observed as between brigades in a division and between battalions in a brigade.

XVI.—SANITATION.

1. Strict general cleanliness must be observed in billets, camps, or trenches.

2. Before troops occupy rooms in billets, the latter should be cleared of all unnecessary articles of furniture, &c., and should be thoroughly cleaned.

When troops relieve one another in billets, it should be an established rule that the outgoing unit leaves the billets scrupulously clean and ready for occupation.

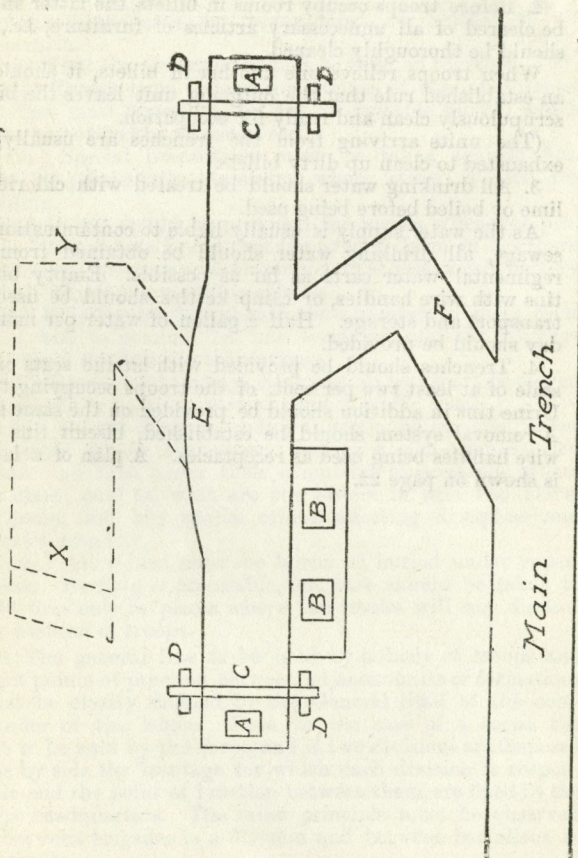
(The units arriving from the trenches are usually too exhausted to clean up dirty billets.)

3. All drinking water should be treated with chloride of lime or boiled before being used.

As the water supply is usually liable to contamination by sewage, all drinking water should be obtained from the regimental water carts as far as possible. Empty biscuit tins with wire handles, or camp kettles, should be used for transport and storage. Half a gallon of water per man per day should be provided.

4. Trenches should be provided with latrine seats on the scale of at least two per cent. of the troops occupying them. Urine tins in addition should be provided on the same scale. A removal system should be established, biscuit tins with wire handles being used as receptacles. A plan of a latrine is shown on page 22.

Suggested plan of latrine and urinal for trenches.
(Affords maximum protection for amount of accommodation.)



- A.—Latrine buckets (*i.e.*, biscuit tins).
 B.—Urine buckets (*i.e.*, biscuit tins) placed on undercut shelf in front wall.
 C.—Bar for seat (buried in wall and supported on buried cross-pieces of wood—D).
 E.—Back wall scooped out to permit crossing.
 F.—Communicating trench 2 feet wide.
 X.—Alternative method when removal system is impracticable. Extremity of latrine to be below level of trench, and filled in periodically with earth from Y which later on becomes fresh latrine.

XVII.—FROST-BITE.

1. Cold is likely to give rise to frost-bite when the circulation of the blood is impaired.

The feet are likely to be frost-bitten under the following circumstances:—

- (a.) When the boots and putties are too tight.
- (b.) When the general circulation throughout the body is less active than normally.
- (c.) When the socks, boots and putties are wet.

The following precautions should be observed:—

2. Boots should not fit tightly, but should be at least a size too large and loosely laced up. When large boots are worn it is well to wear two pairs of socks; but this is dangerous if the boots are small, as it leads to further pressure on the foot. Putties should never be put on tightly.

3. The best preventive for frost-bite is to take off the boots and dry and rub the feet well; circulation is also improved by moving the toes inside the boot. Greasing the feet or rubbing them with vaseline, after drying, is also a preventive.

Feet can be kept warmer by wrapping canvas, sacking or other material loosely round the outside of the boot and filling the interval with straw.

4. The general circulation can be kept up by keeping the body warm and dry. A waterproof sheet worn over the great coat is of assistance where no mackintosh is available.

5. A dry pair of socks should be carried in the pocket when available.

6. Officers should see that dry standing is provided in trenches whenever possible, by means of drainage, raising the foot level by fascines of brushwood or straw with boards on top, or by the use of pumps where these are available.

XVIII.—ENEMY'S RUSES.

The enemy makes use of stratagems some of which we should consider dishonourable. The following are instances :—

- (a.) A party of Germans dressed in French uniforms approached a British outpost and, speaking French, tried to engage them in conversation. At a given signal they attempted to seize the rifles of our men and to overpower them. The attempt was frustrated, but not without loss.
- (b.) The enemy advanced in the direction of a battalion under cover of a white flag. Instead of surrendering on being approached, they threw down the white flag and forced two companies of this battalion to surrender.
- (c.) About 20 Germans advanced holding up their hands. Our men came out to accept their surrender when the 20 suddenly lay flat and about 100 other Germans, who had advanced close up unperceived, opened a heavy fire and killed a considerable number of our men before the nature of their action was realized.
- (d.) The Germans use white armlets to distinguish their own troops in night attacks. Some French troops met German scouts one night with white armlets who represented that they were stretcher bearers searching for wounded. They were allowed to proceed and made a thorough reconnaissance of the French position, after which the enemy delivered a night attack in which the French lost heavily.
- (e.) Considerable use is made by the enemy of motor cars for reconnaissance. The occupants are dressed as French or English officers and drive boldly through our lines at a great pace. There is reason to believe that motor ambulances have been used for the same purpose.

XIX.—ESPIONAGE.

The following notes dealing with espionage were issued for the guidance of troops :—

1. At Rheims a case occurred where civilians were caught signalling to German troops on the high ground round the town by means of lights, coloured and otherwise, placed at night in windows.
2. Signals have also been sent by intermittent smoke from chimneys.
3. Near Rheims an underground telephone line which was used by a German spy was found connected with the enemy's lines.
4. Several women spies have been caught collecting information regarding names and numbers of regiments, numbers of officers, &c.
5. Spies have been caught at railhead observing entrainment and detrainment of troops.
6. The keeping of unregistered carrier pigeons is illegal, and they are a favourite method of communication by spies. On arrival in a village an order should be given to the Mayor that all cages are to be opened and cellars searched for pigeons. Civilians on the road should also be searched for pigeons, as these latter are sometimes carried in the pocket.
7. An easy means by which spies can approach our lines is in company with refugees. These latter should therefore be questioned by the police, and should not be allowed to enter the area occupied by the troops.
8. Labourers working in the fields between the armies have been detected giving information.
9. People in civilian clothes following our troops when retiring have acted as advanced scouts to German cavalry. A similar procedure may be expected when we are advancing.
10. It is known that German officers and men in plain clothes, or in French or English uniform, have remained in localities evacuated by their armies. French and British stragglers should therefore be handed over to the police.

XX.—PROCEDURE TO BE ADOPTED ON ENTERING A FRENCH TOWN OR VILLAGE.

1. The mayor or the official representing him should be ordered to post the proclamation restricting the movement of inhabitants, and informed that he is responsible that its tenour is known and that the risks run by non-compliance are understood.

2. The mayor should be ordered to make a house-to-house search for concealed pigeons, and to open pigeon cages.

3. Inquiries should be instituted amongst the inhabitants as to any suspicious characters, and it should be ascertained if there are any recent arrivals.

4. It should be ascertained if any inhabitants have been seen talking to Germans during the latter's occupation—this especially applies to women.

5. Inquiries should be made as to which hotels and cafés remained open and particular attention should be directed to these establishments.

6. Search should be made for any telephones working in the direction of the enemy.

Orders should be issued to the effect that all private telephone lines are to be disconnected.

7. Any suspicious lights or any intermittent smoke should be watched for.

8. Any person on whom the least suspicion rests should be handed over to the nearest French police, or failing them, to the nearest French troops.

It should be borne in mind that even if no conviction can be secured, a spy's information is rendered worthless if delayed. The moral effect of frequent arrests is the best safeguard against spies.

XXI.—DISTINGUISHING MARKS ON GERMAN OFFICERS.

German officers who have been taken prisoner state that the German regimental officer now usually carries a rifle in the attack and very often a bayonet, that the carrying of swords is forbidden, and that it is rare for an officer to carry

only a revolver. Officers are instructed to cover their shoulder straps with the inside lining of their uniforms so as to hide all gold or silver braid, and generally to render themselves as inconspicuous as possible.

XXII.—DISABLEMENT OF CAPTURED GUNS.

1. When explosives are available, *see* Field Service Pocket Book, page 109.

2. When no explosives and little time are available :—

(a.) Take the spades which are strapped behind the shield, or a pick-axe if available, and smash the sights and firing gear. Endeavour to dent or burr the corners of the breech closing wedge, and to damage the elevating gear.

(b.) Unscrew the striker plug which will be found at the back of the breech closing wedge, and take out the striker. Fire one or two rifle bullets into the opening.

(c.) Take out a bolt which will be found on the front of the cradle below the muzzle of the gun. (This bolt secures the piston rod which controls the recoil of the gun.) Load the gun and fire (at high elevation) in the direction of the enemy and the gun will dismount itself violently to the rear.

XXIII.—ARTILLERY.

1. At the beginning of the war operations took place in open, undulating country where methods learnt at practice camps were found suitable.

Lately however operations have taken place to a great extent in flat enclosed country where the view is always limited. This fact together with the advent of the German heavy howitzer has necessitated certain modifications not in principle but in practice.

METHOD OF OBSERVING FIRE.

2. The battery commander begins his reconnaissance by the selection of an observation post. In his search for a good view of the enemy's position he will probably advance towards our own firing line, and the post which he selects

will usually be close to the latter. On turning his attention to the selection of the battery position he will in most cases discover that, unless he is going to occupy an open or semi-covered position, which under existing conditions is seldom possible, he will have to retrace his steps for perhaps a mile or more before he can find a place for his guns.

The following alternative methods are thus necessitated :—

- (a.) Firing by the map ; or,
- (b.) The employment of a forward observing officer.

FIRING BY THE MAP.

3. Firing by the map has been extensively used. It has certain obvious disadvantages, of which the chief are inaccuracy, the possible danger to one's own infantry and the difficulty of observing fire.

An aiming point such as a church or windmill, which is marked on the map and which is visible from the battery director, is selected. The angle subtended at the director between the aiming point and the target is measured with a protractor and is given as the angle to the guns. The range is measured from the map.

Inaccuracies arise through the difficulty of marking on a map the exact position of either the battery director or the target, and of measuring the angle exactly on a small scale map.

A suitable aiming point is not always available, in which case the compass bearing measured from the map may be used.

If an aeroplane be available to correct the fire the method is suitable, but otherwise much sweeping and searching is required to make sure of finding the target, and this entails a heavy expenditure of ammunition. If the situation suddenly change this "firing without observing" is apt to be dangerous to our own troops.

EMPLOYMENT OF A FORWARD OBSERVING OFFICER.

4. The alternative method of employing a forward observing officer provides a means of accurate observation of fire, and he is a direct link for co-operation between the infantry and the guns behind them. Usually the best place

for this officer in a protracted engagement is in the infantry trench itself. Although a voice circuit is preferable, the buzzer has frequently to be resorted to on account of the noise due to gun and rifle fire.

The company commander in the trench is often in telephonic communication with the battalion commander, and if the artillery telephone be placed in the next "dug out" to the infantry telephone, messages can be sent direct from the battalion to the battery commander.

The main difficulty entailed by this method is the maintenance of communication with the battery. On rare occasions it is possible to signal back by lamp from a back window of a tower or windmill, but visual signalling is often impossible.

5. The laying of the wire is best done at night, and care should be taken to lay it as far as possible along a covered route even at the expense of using slightly more wire, so that in case of a breakdown it can be repaired in daylight. Various places along the wire should be prepared for "tapping in," and a spare reel should be kept near the observing officer in case he wishes to move forward or to a flank.

Sometimes the brigade telephone cart can run out a line from the forward observation post to an "exchange" near several batteries and the observing officer can range each of the batteries on their respective targets.

Wire is frequently broken by bursting shells. If the line be very exposed, and if enough wire be available, it is a good plan to lay an alternative line. A shell bursting even 20 or 30 yards away often removes bodily large portions of the line. Burying the wire at exposed points helps to obviate this, but if there be any flaw in the insulation the current is weakened by so doing. Care should be taken that wires do not cross as an induced current is sometimes set up which causes a breakdown in communication.

It is sometimes possible to utilize the telegraph wires along a road for part of the line, but as the Germans make a special point of persistently shelling the main roads the telegraph wires are seldom sufficiently intact to be of use.

6. As soon as the communications are working, the forward observing officer draws a rough panorama sketch in duplicate of the enemy's position or of that portion of the front allotted

to his battery or brigade as the case may be. On this he marks and letters all the points (roads, farms, trenches, &c.) against which fire may be required by day or night. He then decides how many guns are necessary for each objective and which guns would be most suitable for the purpose.

7. The observing officer must reserve his ammunition for targets worthy of his fire and should not be tempted into blowing down a three-storied house for the sake of evicting one perhaps rather mythical sniper.

8. Each gun is then ranged with as few rounds as possible on its objective.

The following is an example of the orders which might be given. The rough line to a centre point having been given by compass bearing or from the map:—

"No. 1 gun. 5 degrees more left, corrector 150, 3,500.
Report when ready."

Having received the word "ready," he waits till it is convenient for him to observe, then sends "Fire."

"2 degrees more left, drop 100 Fire."

"30 minutes more right, corrector 146 Fire."

This appears correct, and he then sends—

"Register and mark A.—Machine-gun emplacement."

The No. 1 of the gun then makes a careful note of the angle, angle of sight (if any), corrector and range, and the sergeant-major enters it on a tabular form.

When this has been done, if at any time the enemy bring a machine gun to this emplacement (for alternative emplacements are frequently used), accurate fire can be obtained on it at short notice by simply telephoning to the battery "Target A, 2 rounds gun fire." A similar procedure is followed with regard to the other points or areas.

9. In ranging, the observing officer is often on a flank, and as he is closer to the target than the guns, corrections for line are difficult.

The best method of overcoming this difficulty is to estimate the error in line in yards, and then make the corresponding correction in degrees according to the range. It is essential that the observing officer should be informed by telephone from the batteries as each gun is fired, for, owing to the noise of gun fire and shell bursts, an observer cannot tell when his own battery is firing.

10. When the tabulation is completed, the observing officer can return to the battery if urgently required, having first pointed out to the infantry company commander the various targets registered, and having handed over and explained to him the duplicate panorama sketch. The company can probably provide a signaller, and arrangements should be made for manning the telephone at each end in case of an alarm.

CONCEALMENT.

11.—(a.) *Observing Station.*—The Germans prepare every haystack within view of a position for use as an observing station by placing obvious dummies on the top of each. When an observer wishes to use one of these he shelters behind the dummy without exciting any suspicion. The remedy for this is to destroy every haystack, windmill and tower within view, but this involves lavish expenditure of ammunition. The Germans also use their observation limbers behind the bare walls of demolished houses, the periscope only being visible over the top.

12. Several battery commanders have used houses and haystacks from which to observe fire, a deep, narrow trench having been previously constructed some 5 yards in rear. If the enemy's artillery locate them, the battery headquarters retire into this trench. There they are safe, since shells which would fall into the trench hit the house or haystack and burst against it. Only enfilade fire can injure them, and when the bombardment is over they can often continue observing without molestation.

13. Usually one telephone operator or two men at most are sufficient to assist the observing officer. It is essential to prevent unnecessary persons approaching the observing station, as its position may thereby be disclosed, and to reduce the numbers there to a minimum.

14.—(b.) *Battery.*—A battery which can be actually located by the enemy will inevitably be fired on by heavy artillery. The bursting of large shells, besides causing casualties, has a numbing effect on the brain. Consequently a battery which has been located by the enemy cannot shoot with its maximum efficiency, and may even be silenced, owing to loss of men and material, and every possible precaution should therefore be taken to avoid being discovered.

15. It is necessary to avoid being seen from any portion of the enemy's position if possible, and to keep well behind any forward crest.

Firing should not take place after dusk, when flashes might be located, or when an hostile aeroplane is overhead, unless the tactical situation makes it imperative, *e.g.*, when either the enemy's or our own infantry are attacking, or when an exceptional target presents itself.

During the day one man should be kept on the watch for hostile aeroplanes. When an aeroplane is sighted, a shout "aeroplane over," or a whistle blown, should be the signal for all movement to cease.

All places which can easily be described on the map by an aviator, *e.g.*, a railway line, a large farm house, a road junction, or a row of high trees, should be avoided.

This also applies to any position on a forward slope. Even though a copse or hollow may conceal the actual position of a battery, supplies of ammunition can be brought up to such a position only by night, and if a daylight retirement be necessary, the operation will be attended with much difficulty.

16. The three things which are most likely to disclose the position of a battery to hostile aircraft are :—

- (a.) The gun wheels. The symmetrical shape of the gun wheels and the spokes often stand out even from beneath a covering of branches. This can be avoided by placing blankets over the wheels.
- (b.) The unpainted portion of the breech. The breech fittings shine in the sun and should be covered with a blanket.
- (c.) The intervals between the guns. If an aerial observer sees six otherwise guileless looking bushes or haystacks exactly 20 yards apart and in perfect dressing his suspicions are likely to be aroused ; it is worth while to fill up the intervals with bushes or heaps of straw.

17. Steps should be taken to deceive the enemy as to the actual positions of our guns by placing dummy guns in certain emplacements. A dummy gun can be improvised by taking a pair of large wheels from a farmyard and

placing a log of wood on them. Puffs can be arranged to represent the flashes.

18. If due precautions are taken for concealment batteries can remain for days right under German aeroplanes without being seen.

19.—(c.) *Wagon line.*—At first wagon lines were placed in or behind woods where cover from aeroplanes was available. Lately, however, the Germans have been making a thorough search with high explosive shell (firing presumably by the map) of all woods and chateaux grounds in the neighbourhood of battlefields, and several cases have occurred of teams being pinned down and damaged by fallen trees. It is best to draw up the wagon lines along the sides of hedges in fields, well away from roads and woods. The officer, or non-commissioned officer in charge should be instructed to move the teams some 300 or 400 yards if he has reason to believe that an aeroplane has located them, and has given a line to a German battery.

AMMUNITION.

20. Shrapnel are still sometimes burst too high. The safe rule is to adhere to a corrector which gives a considerable portion of grazes.

21. Fuzes should not be kept uncovered more than is absolutely necessary. Experience has shown that fuzes deteriorate rapidly in wet weather.

No rules can be laid down on this point, and the number to be uncovered must vary with the situation and the equipment, but commanding officers should pay particular attention to this matter as it affects not only the accuracy of our own fire, but also the safety of firing over our infantry.

REGISTRATION FORM FOR 4.5-INCH HOWITZER.
Aiming point : Church spire (description).

Targets.	Guns.	Day angle.	Angle of sight.	Corrector.	Charge.	Gun range.		Remarks.
						Lyddite.	Shrapnel.	
A. Infantry trenches (extent 4').	Whole battery.	79° R.	zero	148	III.	2,800	III. 2,875	Distribute 10 ft. from No. 6. (No. 6 is laid on M.G. emplacement in trench.) For forward trench drop 150 yards. 3rd charge is used for lyddite, 4th for shrapnel.
K. Farm with red roof.	No. 6	85° R.	zero	150	III.	4,000	IV. 3,100	Only lyddite for bombing village. Sweep 1°, search back 300 yards.
L. Village of L—	Centre section.	92° R.	zero	...	III.	4,300	...	Night aiming point makes angle 91° R. from day aiming point.

4

REGISTRATION FORM (18-PR. BATTERY).
Aiming Point : Umbrella-shaped tree (description).

Targets.	Guns.	Day angle.	Angle of sight.*	Corrector.	Range.	Remarks.
A. M.G. emplacement.	No. 1	92° R.	zero	148	2,125	This is range to just beyond crest, search back 200 yards. Supply carts suspected of coming to this point after dark. <i>Note.</i> —The angle of sight lamp (sight aiming point) from day aiming point is 86° R., therefore to obtain night line subtract 86° from day angle.
D. Section of guns (flashes visible)	No. 3 and 4	100° 30' R.	zero	154	2,400	
E. Road	No. 1	105° 20' R.	zero	150	2,400	

35

* As the angle of sight from Battery cannot be determined a false range and variable corrector are often used.

TELEPHONIC COMMUNICATIONS.

22. The most efficient means of communication between observing stations and battery is by telephone, and no time or trouble should be spared in laying the wire in such a way as to minimize the risk of damage by shell fire.

23. The following system may be found suitable in certain cases :—

O is the observer in one of our trenches ; the line is laid single along one of the communication trenches, at the end of which the double-line system commences.

D 1, D 2, D 3, are dug-outs occupied by linemen, whose duties are to pass orders or messages by visual signalling or by voice should the lines be cut in such a way that the current is interrupted and to repair the wire when cut.

At D 2 there is also a test office, consisting of an operator with a telephone. The earth terminal of this telephone is permanently connected to earth ; the operator connects his L terminal to the line from Z, then if he can hear B talking to O, he knows that the direct line from B to O is intact ; similarly by connecting his L terminal to X and Y he can hear if these lines respectively are intact. In this way the operator at D 2 can learn when one of the wires is cut, and can approximately localize the break ; he then makes a connection so as to leave B through to O by the line still intact, and takes steps to repair the break.

The establishment of the test office at D 2 greatly expedites repairs, and its position should be carefully selected.

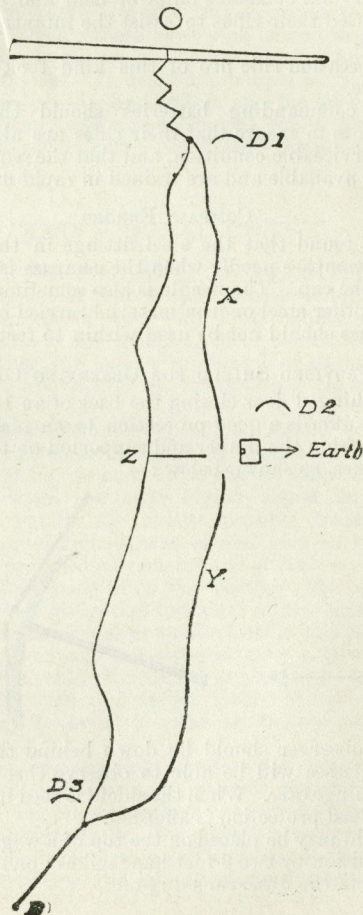
The two lines leading forward should not be less than 25, or more than 100 yards apart.

Additional cross connections can be added, but when there are more than those shown in the diagram, a break in any one of them cannot be discovered, and the first intimation of a break will probably be when all means of communication are severed.

When the lines are very exposed, and especially when they cannot be repaired by daylight, the number of these cross connections may be increased with advantage.

In laying out both main and cross wires the chance of damage by shell fire is greatly reduced if disused trenches, ditches, or any covered way be utilized, while in exposed

places the wire can sometimes be buried so as to protect it to a limited extent from artillery fire.



USE OF RIFLES.

24. On several occasions units of field and garrison artillery have used their rifles to assist the infantry in repelling an attack.

On one occasion rifle fire of this kind took place at 300 yards range.

Officers commanding batteries should therefore make arrangements to ensure that their rifles are always at hand and in a serviceable condition, and that the requisite number of men are available and are trained in rapid firing.

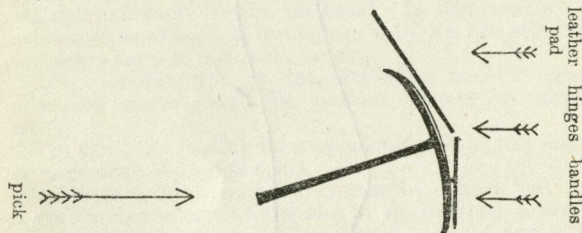
COMPASS ERRORS.

25. It is found that the steel fittings in the service cap affect the compass needle when the compass is within a few inches of the cap. The needle is also sometimes affected by a knife or other steel or iron material carried on the person.

A compass should not be used within 15 feet of a gun.

IMPROVISED SHIELD FOR OBSERVING OFFICER.

26. The hinged door closing the back of an 18-pr. or 13-pr. gun limber affords a good protection to an observing officer if removed from the limber and supported on the ground by two pick-axes, as shown below :—



27. The observer should lie down behind the shield, and with his glasses will be able to observe through the space where the hinges are. When the shield is used in this manner, good overhead protection is afforded.

The shield may be placed on the top of a wagon limber and kept in position by two 6-foot handspikes; or it may be fixed in position in the observer's dug-out.

28. The door can be removed by knocking out the pins of the hinge with a farrier's or fitter's punch, the split pins, 5 inch by $\frac{1}{4}$ inch carried in the tray of small stores being substituted for them; these split pins should be suspended from the limber by pieces of chain or string in order that they may not be lost. If desired, a temporary wooden door can be used to close the limber box, and the door which has been removed can be strapped on the top of any carriage which would be convenient to the battery commander.

XXIV.—SIGNAL UNITS.

1. *Duties of officers in charge of signals.*—The officer in charge of signals of a formation is responsible for maintaining communication with all units which are under the direct orders of his general officer commanding; and also for assisting the officer in charge of signals of the formation next above him in maintaining communication with him.

2. While the establishments provided should be sufficient for normal requirements, it should be understood that officers in charge of signals can and should ask for help in personnel and material from the next higher signal unit in case of need. This entails the closest possible touch between officers in charge of signals, who should give early and full information of proposed movements and alterations of circuits. This method of assisting in no way relieves officers in charge of signals of their obligation to indent on the signal park in good time to replace losses or unserviceable equipment.

3. The signal company has sufficient personnel and equipment to enable the divisional commander to provide adequate signal communications with all his units, and where necessary to instal a separate system for artillery fire control.

4. The officer commanding a divisional signal company should be the chief adviser and expert in the division in all telegraph and telephone matters, and if he uses tact his assistance will generally be welcomed by other arms. He should keep himself in close touch with the headquarters of the divisional artillery, and give them every assistance in his

power by opening offices on the divisional lines for the use of artillery units, by laying special lines, or by giving advice or instruction.

5. When infantry battalions receive wire and telephones, the divisional signal companies may be required to assist in the instruction of battalion personnel in their use and maintenance.

6. *Line work in general.*—At the present moment in France security of lines is more important than rapidity of construction. For airline this entails diminution in speed of construction, and especial attention to road crossings. These should be at least 18 feet high across those roads which motor omnibuses are likely to use. The motor omnibus now gets quite near the firing line.

7. All cable lines, including those of brigade sections, should be raised above the ground by being laid on hedges or fastened to trees or poles cut locally. Normally the lines will be laid in the usual way, and will be afterwards raised off the ground by strengthening parties.

Whenever possible, alternative channels of communication should be provided, either by means of duplicate wires, or by a transverse line connecting the terminals of two or more lines, this transverse line being put through whenever a line is broken. These duplicate or transverse lines, if not in use, should be tested at frequent intervals.

8. During protracted operations cable lines laid in the trenches are of little value as they are continually broken by the men passing along the trench; if a line is required along a trench it is best laid on the ground just in rear of the trench where it can be reached and repaired from under cover.

9. A cable along a communication trench should either be in the berm, within reach of a man in the trench, or else attached to the vertical side of the trench with wooden pegs. It has sometimes been found, however, that cables laid along communication trenches are frequently broken by reliefs moving up, who pass through the trench by day, and generally walk outside it at night; it has sometimes been found, in consequence, that lines running across country straight up to the trenches and erected on poles are more reliable than those placed in the communication trenches.

10. A line should be laid along the front fire trench

connecting the heads of those lines which lead back and offering alternative means of communication. This lateral line also enables a telephone to be inserted at any point in the trench. Possibly enamelled wire will be found to work well when buried, and in this case the lines near the trenches should, whenever possible, be buried so deep as to be secure against shrapnel and rifle fire.

11. *Training.*—In training the personnel of brigade sections, commanding officers should attach particular importance to the following points:—

- (a.) Morse work on the buzzer. All the men of a brigade section, except drivers, should be taught to send and read on the buzzer.
- (b.) The accurate and rapid transmission of written messages by speech on the telephone. The men must become accustomed to spelling out the messages.
- (c.) The procedure of dealing with messages, which includes counting of words, registration, noting time of despatch of despatch riders, time of R D, &c. If registration is slow it is worse than useless. The delays on most messages about which complaints are received can be traced to the time which elapses between the handing in of the message and its arrival at the instrument.

XXV.—CYCLIST ORDERLIES AND DESPATCH RIDERS.

1. More haste less speed.
2. The map should be thoroughly studied before starting, whereby much time may be saved on the road. The map is more reliable than wayside information.
3. It is often quicker in safe country to avoid roads on which troops are marching. In wet weather paved roads should be avoided. Tyres should be inflated extra hard when riding over such roads. When leaving a bicycle by the roadside, it should be placed where it is impossible for any traffic to disturb it.
4. Motor cyclists who wear glasses should see that they are provided with an ample supply.
5. Motor cyclists should be careful to see that the petrol tank is filled up when starting in the dark; and that they have a spare supply of carbide.

6. A very sharp look out should be kept at night for sentries, trenches across the road, barricades and shell holes, which are difficult to discern both by day and night.

7. No lights are carried by columns anywhere near the front.

8. Motor cyclists should be careful on returning from a ride to give full information both to the signal office and to other motor cyclists concerning :—

(a.) The exact position of the unit from which they have just returned.

(b.) The state of the roads, transport on road, &c.

9. Despatches should be counted and receipts delivered immediately on return. A receipt must always be obtained ; it is often as important as a message.

10. Whenever possible, a verbal message should be at once committed to writing, and the signature of the officer issuing the message obtained if it can be done without undue delay.

11. The most important things to practise are map-reading and identification of different units by their composition, *i.e.*, divisional trains consist of horse transport, supply columns of lorries.

XXVI. FURTHER NOTES ON FIELD DEFENCES.

The following further notes have been prepared as the result of the experience gained during the present conditions of trench fighting :—

SITING AND CONSTRUCTION OF FIELD DEFENCES.

1. *Siting of fire trenches.*—Fire trenches should be sited to fulfil as many of the following conditions as possible :—

- (i.) Concealment from the enemy's artillery observers.
- (ii.) Concealment from aircraft.
- (iii.) Screened communications from fire trench to rear.
- (iv.) Freedom from water in wet weather.
- (v.) No ground to be within 200 yards of the defence line which is not under effective rifle fire from *some* portion of the line.

The following methods are some of those adopted by which the above conditions have been complied with :—

- (i.) (a.) Siting on reverse slopes.
- (b.) Construction of advanced posts in front of main line, thereby keeping the enemy's snipers and observers at a distance.

These posts have been placed at 50 to 100 yards in front and held by 5 to 10 men. They must be carefully connected with the fire trenches by communication trenches.

- (c.) Construction of alternative lines of fire trenches.
- (d.) Construction of dummy trenches.
- (ii.) (a.) Construction of light cover of brushwood, &c., to hide newly excavated earth and the shadow thrown by the excavation.

(b.) Deception by means of dummy trenches, and by the arrangement of branches or bundles of straw arranged to give the idea that they hide trenches.

(c.) By utilizing features such as edges of existing quarries, &c.

(iii.) (a.) Intelligent use of folds in the ground and lines of hedges.

(b.) Construction of screens to resemble hedges.

2. *Design.*—Fire trenches should be wavy in plan and as deep and narrow as is consistent with—

(i.) Effective use of the rifle.

(ii.) Easy communication.

Sometimes when trenches are long it will not be necessary to prepare it for rifle fire throughout, *e.g.*, a series of strongly held points connected by communication trenches.

Figs. 1 and 2 show in section the development of a trench which may be considered as satisfying the present conditions of warfare, which gives the maximum of cover with a minimum of width. The firing step must be revetted.

Traverses, 6 feet wide, 12 to 15 feet apart, should be left in all trenches. The length of a traverse should overlap the width of a trench by 2 feet at least (Fig. 4 A.A.).

While it has been found advantageous to undercut trenches under favourable conditions in certain soils and in dry weather, it is usually impossible to do so with safety in winter.

Unless the undercut portion is well shored up and revetted, a process requiring much time and material, the trench is liable to fall in, especially if subjected to artillery fire. This form of protection should therefore be resorted to with great caution.

NARROW FIRE TRENCH IMPROVED.

FIG. 1.

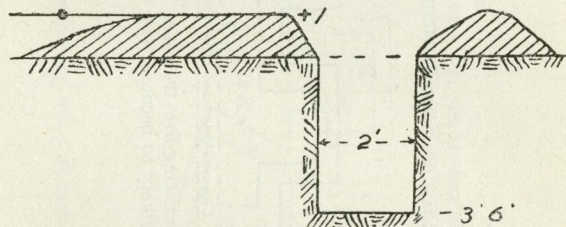


FIG. 2.

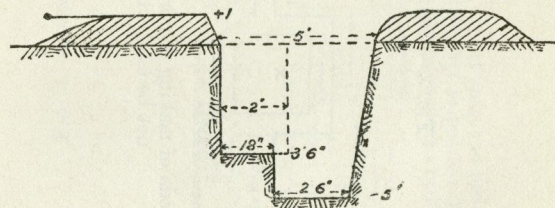
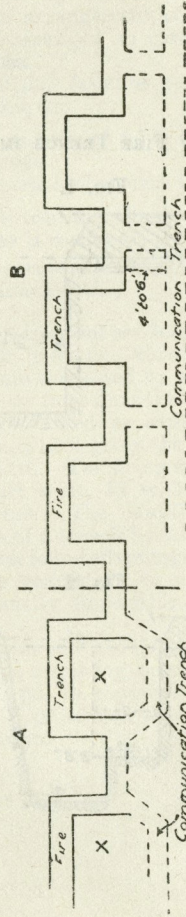


FIG. 3.—COMMUNICATIONS IN REAR OF FIRE TRENCHES.

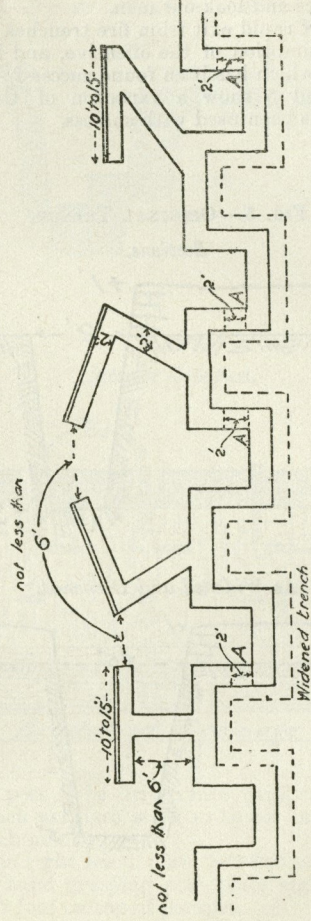
Plan.



Two methods of making communication behind existing fire trenches. Method A should not be used when the ground is likely to become very wet.

FIG. 4.—COMMUNICATIONS IN REAR OF FIRE TRENCHES.

Plan.



An existing fire trench can be widened into this form, or a trench can be dug of a suitable trace, traversed or zig-zag as a communication trench, and the T or L fire trenches dug or sapped out from it.

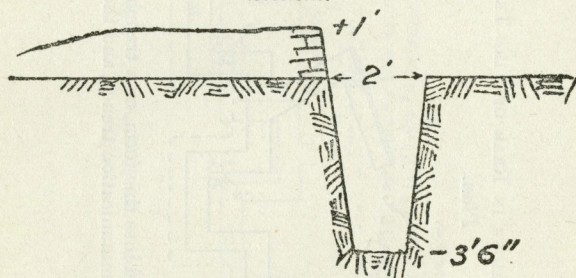
Head cover or loopholed plates should be provided for snipers, observers and look-out men.

Some means of rapid exit from fire trenches are necessary to allow the assumption of the offensive, and Figs. 6 and 7 show a method which has been found successful.

Figs. 3, 4 and 5 show a variation of the continuous trench which has been used with success.

FIG. 5.—ORIGINAL TRENCH.

Sections.



As Widened and Deepened.

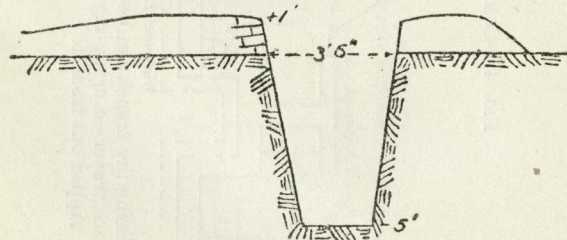


FIG. 6.—“SORTIE STEPS” IN FIRE TRENCHES.

Section.

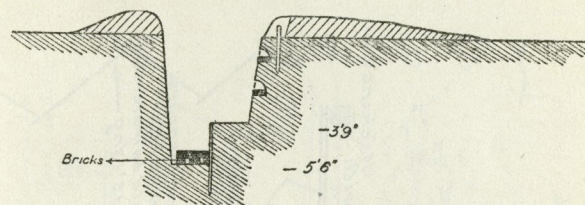
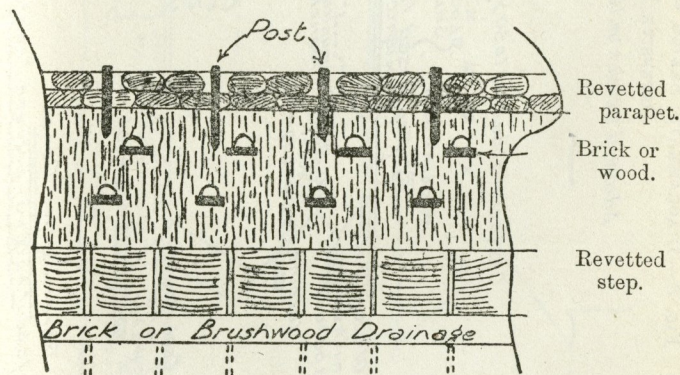


FIG. 7.

Interior elevation.

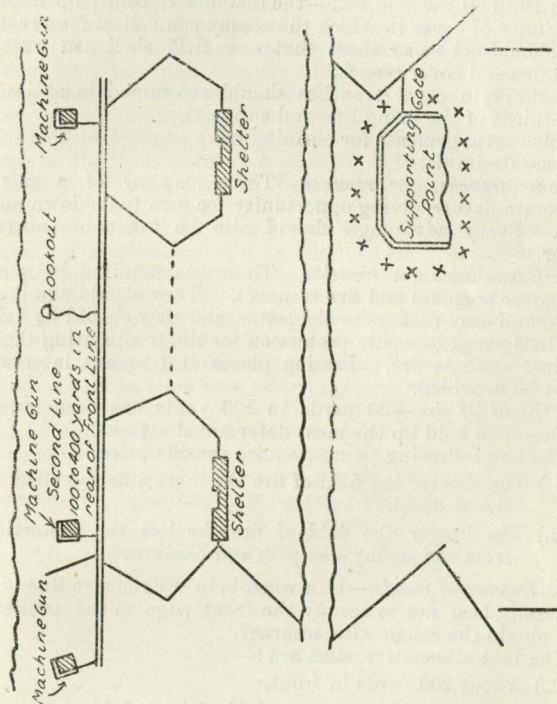
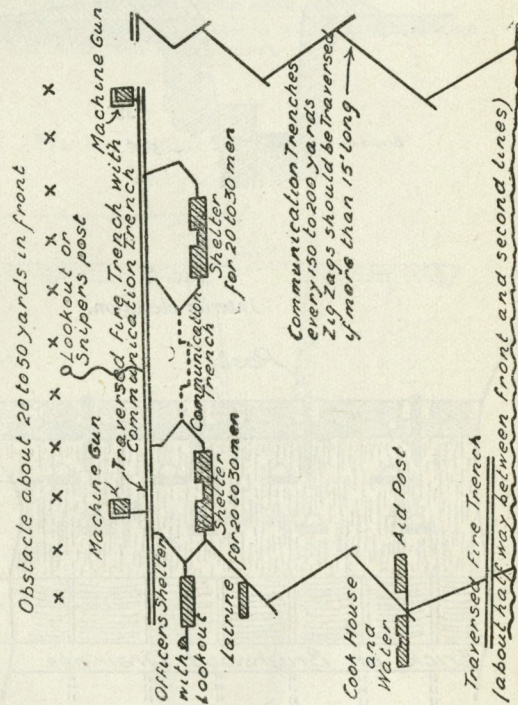


One stout post to be driven into parapet about 1 foot in front of trench and two steps to be cut in interior slope as shown for each man.

Hold rifle in right hand, place left foot in lower step, pull up with left hand grasping post, place right foot in upper step, then left foot on top of parapet.

FIG. 8.—DIAGRAMMATIC SKETCH OF THE ORGANIZATION OF A DEFENSIVE LINE.

Advanced trenches on lines of approach.



3. *Cover trenches.*—These should be considered under two heads, cover for the firing line and supports, and cover for the reserves.

Cover for firing line and supports may be provided by means of shelters actually in the fire trenches or in cover trenches from 15 to 50 yards in rear—the distance depends upon the proximity of cover in which the enemy can collect for a rush, but should not be so short that one H.E. shell can wreck both fire and cover trench.

Shelters in cover trenches should accommodate at least two-thirds of the firing line and supports.

Some arrangements for cleaning rifles, storage of rifle oil, &c., are desirable.

Cover trenches for reserves.—These may be of a more elaborate nature, giving opportunity for men to lie down and rest. Every advantage should also be taken of natural cover.

4. *Communication trenches.*—These are required between the cover trenches and fire trenches. They should admit of rapid and easy passage to the latter, and they should be laid out in zig-zags to secure protection for the troops using them against enfilade fire. Passing places at frequent intervals must be provided.

5. *Field of fire.*—30 yards to 100 yards has been found sufficient to hold up the most determined attacks.

The two following points require consideration :—

- (1.) The shorter the field of fire the more efficient must be the obstacle.
- (2.) The longer the field of fire the less the protection from the enemy's snipers and observers.

6. *Defence of woods.*—If a wood is in a defensive line it is generally best not to occupy the front edge as the artillery can obtain the range with accuracy.

The best alternative sites are :—

- (1.) About 200 yards in front.
- (2.) In the centre of the wood if a short field of fire can be cleared and the front is well wired.
- (3.) Behind the wood.

The two latter are the least favourable for the enemy's observers.

7. *Defence of buildings.*—The garrison of any buildings prepared for defence should be well provided with dug-outs for occupation during the day and periods of shelling.

Communications above ground through villages under fire are generally impossible. Efficient covered communications can, however, be made by tunnelling from cellar to cellar, or by the skilful adaptation of the débris of houses.

All buildings which command the trenches of a line, from the enemy's side, within a range of 600 yards, are a source of danger on account of the cover they give to the enemy's snipers and machine guns.

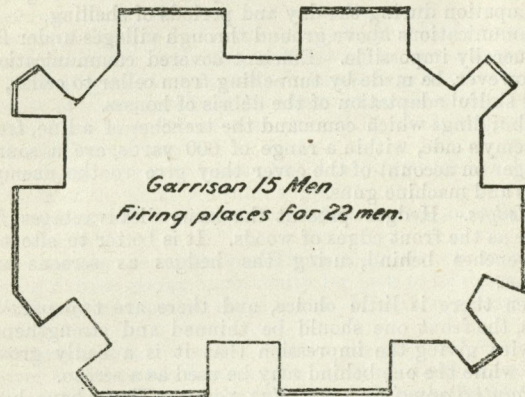
8. *Hedges.*—Hedges present the same disadvantages for defence as the front edges of woods. It is better to site the fire trenches behind, using the hedges as screens and obstacles.

When there is little choice, and there are two parallel hedges, the front one should be thinned and strengthened with wire, giving the impression that it is a badly grown hedge, while the one behind may be used as a screen.

9. *Points d'appui or supporting points.*—These have been found valuable in arresting an attack on the trenches which has been successful, and also in supporting the counter-attack.

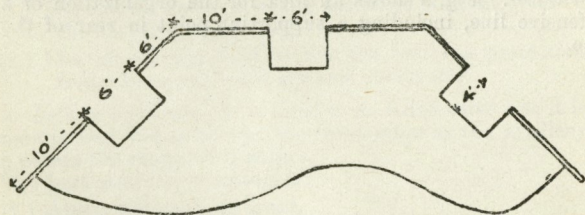
They should be sited in a well-concealed position from 50 to 100 yards in rear of the line, provided with a good obstacle, and designed for a garrison of 15 to 20 men for all-round defence and well provided with ammunition, food and water. Fig. 8 shows an idea for the organization of a defensive line, including a supporting point in rear of the line.

TRACE OF SUPPORTING WORKS ACTUALLY CONSTRUCTED—
SCREENED FROM ARTILLERY OBSERVATION.



Parapet 1 foot high. Parados everywhere 1 foot 6 inches high.
All trenches 3 feet 6 inches deep, 2 feet wide.
Traverses about 6 feet by 4 feet.
Completely enclosed by barbed wire 15 feet wide about
15 feet from parapet.

TRACE OF SUPPORTING WORK—AS ACTUALLY CONSTRUCTED.

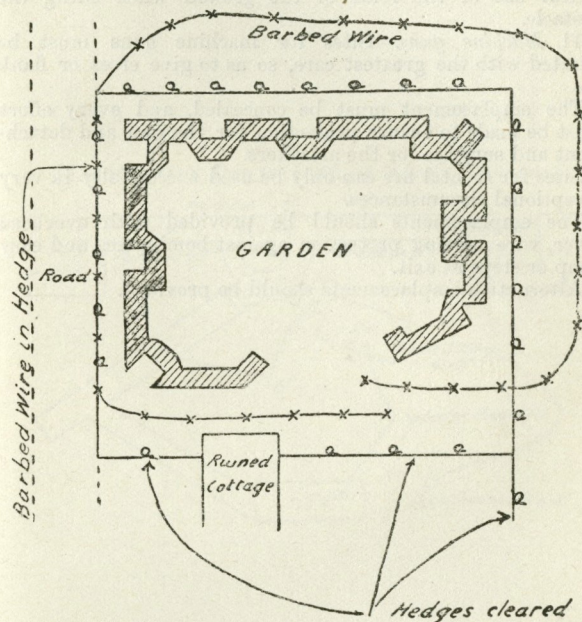


Fire trenches (shown double) 3 feet wide, 3 feet 9 inches deep. Parapet 9 inches high with earth heaped up to 15 inches between rifles.

Communication trenches 2 feet wide, 5 feet deep at least with earth thrown up on either side to about 1 foot.

Traverses 6 feet along, 4 feet back.

SKETCH PLAN OF SUPPORTING WORK WHICH SUCCESSFULLY
WITHSTOOD ATTACK OF PRUSSIAN GUARDS ON
11TH NOVEMBER, 1914.



The work was constructed behind the thick hedges of a garden, roughly about 20 yards by 12. Owing to the roadway the usual barbed wire ring had to be kept quite close to trenches on left side.

The garrison was about 40 men and parados was provided everywhere.

10. *Obstacles.*—Obstacles should be placed from 20 to 50 yards from the trenches. The destruction of wire entanglements by both hostile and friendly rifle and machine-gun fire is very rapid, but can sometimes be minimized by the skilful use of the folds of the ground when siting the obstacle.

11. *Machine guns.*—Sites for machine guns must be selected with the greatest care, so as to give cross or flank fire.

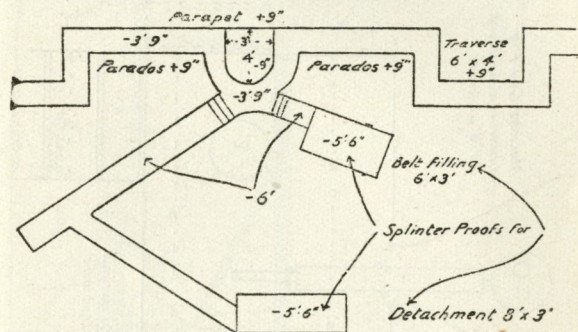
The emplacement must be concealed, and every effort must be made to ensure protection for the gun and detachment and surprise for the attackers.

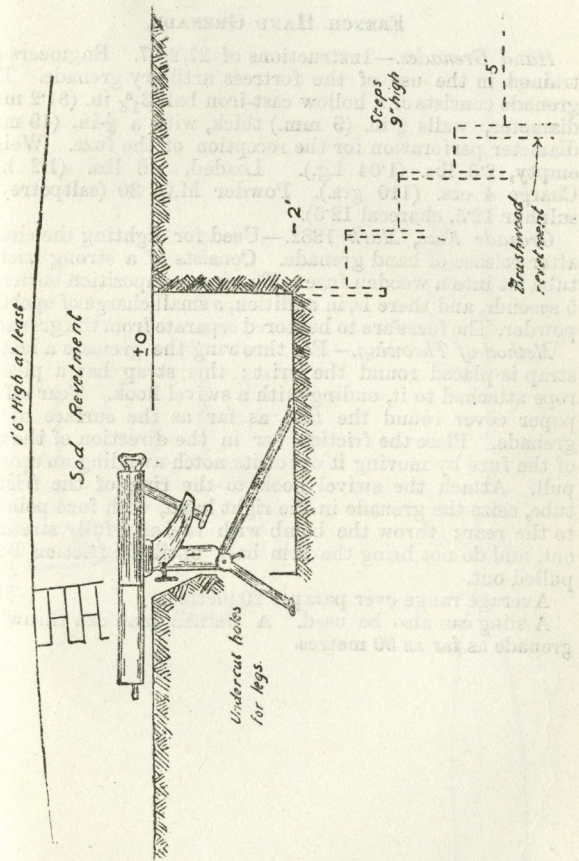
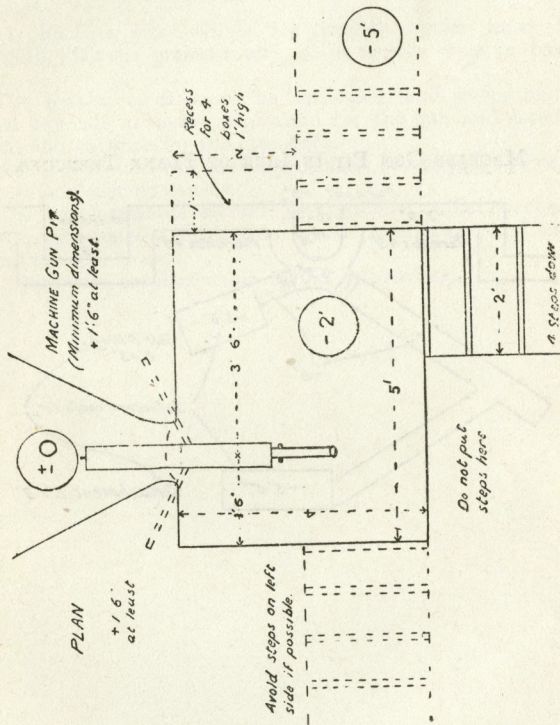
Sites for frontal fire can only be used successfully in very exceptional circumstances.

The emplacements should be provided with overhead cover, wire netting protection against bombs, &c., and easy ramp or steps as exit.

Alternative emplacements should be provided.

MACHINE GUN PIT IN LINE OF FLANK TRENCHES.





FRENCH HAND GRENADE.

Hand Grenades.—Instructions of 27/2/07. Engineers are trained in the use of the fortress artillery grenade. This grenade consists of a hollow cast-iron ball $3\frac{1}{8}$ in. (81.2 mm.) diameter, walls $\frac{3}{8}$ in. (9 mm.) thick, with a $\frac{3}{4}$ -in. (19 mm.) diameter perforation for the reception of the fuze. Weight empty, 2.3 lbs. (1.04 kg.). Loaded, 2.6 lbs. (1.2 kg.). Charge 4 ozs. (110 grs.). Powder M.C. 30 (saltpetre 75, sulphur 12.5, charcoal 12.5).

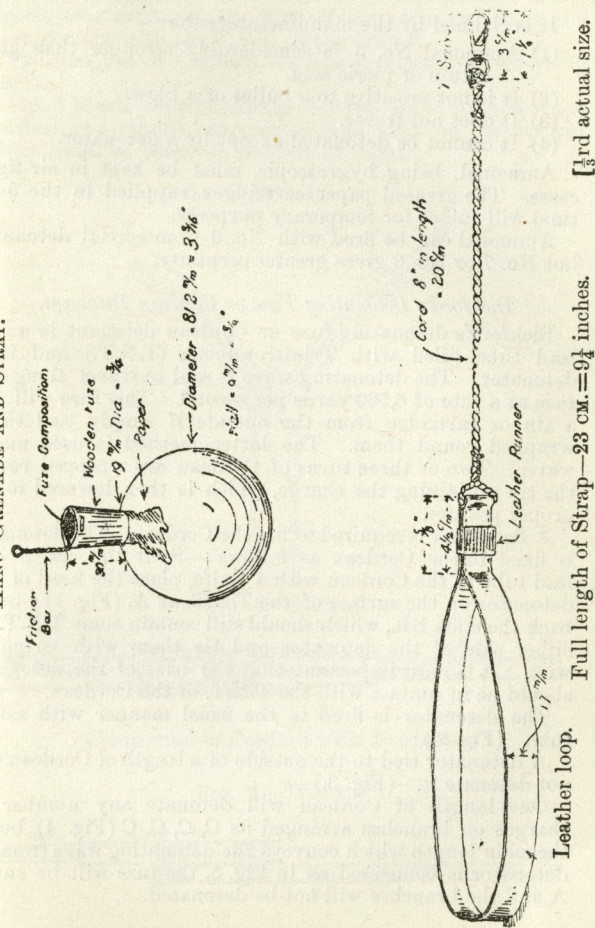
Grenade Fuze, Mark 1882.—Used for lighting the charge after release of hand grenade. Consists of a strong friction tube let into a wooden fuze. The fuze composition burns for 5 seconds, and there is, in addition, a small charge of sporting powder. The fuzes are to be stored separate from the grenades.

Method of Throwing.—For throwing the grenade a leather strap is placed round the wrist; this strap has a piece of rope attached to it, ending with a swivel hook. Tear off the paper cover round the fuze as far as the surface of the grenade. Place the friction bar in the direction of the axis of the fuze by moving it out of its notch avoiding an upward pull. Attach the swivel hook to the ring of the friction tube, seize the grenade in the right hand, with fuze pointing to the rear: throw the bomb with the arm fully stretched out, and do not bring the arm back until the friction bar is pulled out.

Average range over parapet 20 metres.

A sling can also be used. A trained man can throw the grenade as far as 50 metres.

HAND GRENADE AND STRAP.



[1/3]rd actual size.

Full length of Strap—23 cm. = 9 1/4 inches.

AMMONAL AND BICKFORD'S DETONATING FUZE.

It is claimed by the manufacturers that—

- (1) Ammonal No. 5 is considerably stronger than gun-cotton or picric acid.
- (2) It is not sensitive to a bullet or a blow.
- (3) It does not freeze.
- (4) It cannot be detonated except by a detonator.

Ammonal, being hygroscopic, must be kept in air-tight cases. The greased paper cartridges (supplied in the 5-lb. tins) will suffice for temporary purposes.

Ammonal can be fired with No. 6 Commercial detonator but No. 7 or No. 8 gives greater certainty.

Bickford's Detonating Fuze or Cordeau Détonant.

Bickford's detonating fuze or Cordeau détonant is a soft lead tube filled with Trinitrotoluene (T.N.T.) and is a detonator. The detonating wave is said to travel along the fuze at a rate of 6,560 yards per second. This fuze will fire a tin or cartridge from the outside if simply tied to or wrapped round them. The latter method is used under water. Two or three turns of Cordeau are wrapped round the tin containing the charge, which is then lowered to its proper position.

A detonator is required to fire the Cordeau. The detonator is fixed to the Cordeau as follows:—Split the end of the lead tube of the Cordeau with a knife, place the head of the detonator on the surface of the T.N.T. at A. (Fig. 1); bring back the ends BB., which should still contain some T.N.T. on either side of the detonator and tie them with string or wire. It is most important that the base of the detonator should be in contact with the T.N.T. of the Cordeau.

The detonator is fired in the usual manner with safety fuze. (Fig. 2.)

A detonator tied to the outside of a length of Cordeau will not detonate it. (Fig. 3.)

One length of Cordeau will detonate any number of charges on branches arranged as C, C, C, C (Fig. 4), but if the main length which conveys the detonating wave from the detonator is connected as in Fig. 5, the fuze will be cut at A and the branches will not be detonated.

The connection between the main length and the branches is made as in Fig. 6. Great care must be taken to secure a good joint at A, *i.e.*, the tube of the main length should be in contact with the T.N.T. in the branch.

Two lengths of Cordeau may be connected as shown in Fig. 7.

Fig. 8 illustrates a suggestion for the use of Ammonal and Cordeau in a rapidly constructed land mine on the surface, which could be placed in position at night.

FIG. 1.

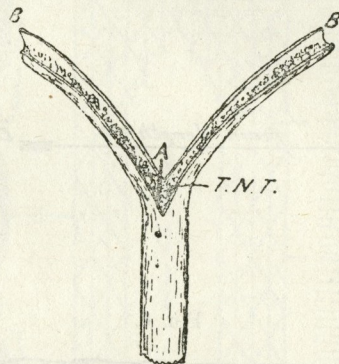


FIG. 2.—RIGHT.



Connection of Cordeau with Detonator.

FIG. 3.—WRONG.

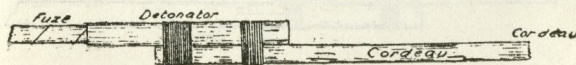


FIG. 4.—RIGHT.

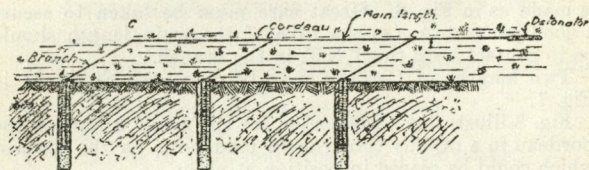


FIG. 5.—WRONG.

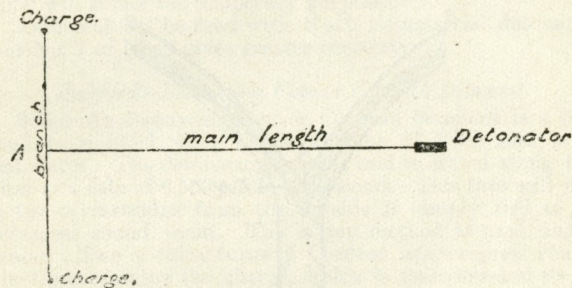


FIG. 6.

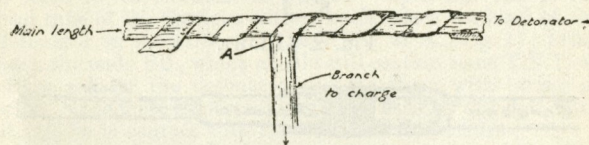


FIG. 7.

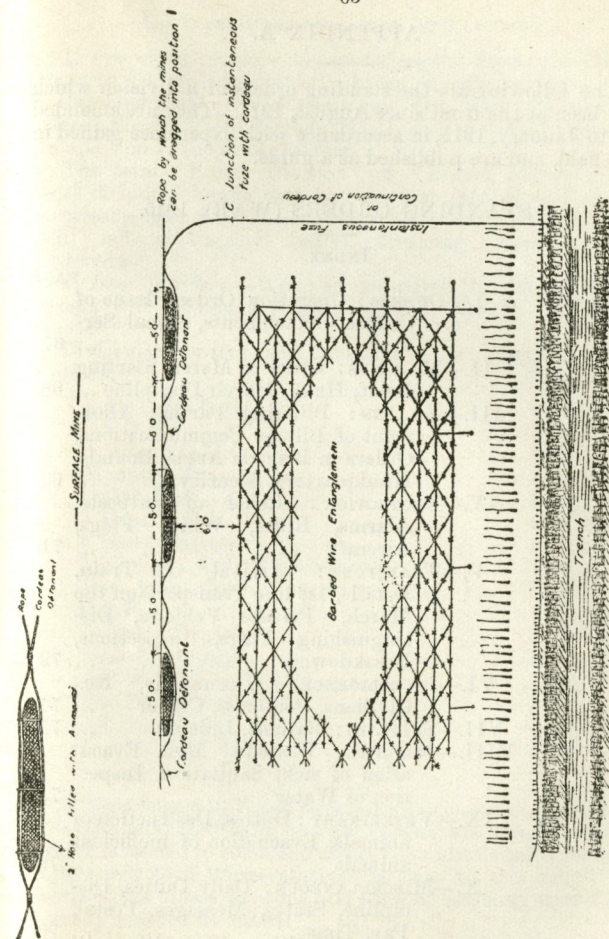
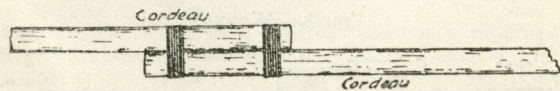


FIG. 8.

N.B.—The Cordeau should be in contact with the charge for its whole length.
For clearness it has been shown detached in the drawings.

APPENDIX A.

The following are the standing orders of a division which has been at the front since August, 1914. They are amended up to January, 1915, in accordance with experience gained in the field, and are published as a guide.

STANDING ORDERS (WAR), 1915.

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I.—INTER-COMMUNICATION AND ORDERS.

1. *Operation Orders.—Acknowledgment.*—Operation orders must be acknowledged at once by an officer's signature.

Interpretation of and terms in.—The term "Divisional Headquarters" will include No. 1 section signal company in addition to the headquarters.

The term "Bearer Division" or "Bearer Sub-division" will include a forage cart and a water cart as well as the necessary tent sub-division personnel. Ambulance wagons will not accompany bearer divisions unless specially ordered to.

2. *Issue of orders.*—When on the march the time at which orders will be issued will be notified through the signal service.

Divisional orders will normally be distributed as follows:—

A.D.C. (for G.O.C.)	...	...	...	1 copy.
G.S.O. 1	...	...	...	1 copy.
A.A. and Q.M.G.	...	...	...	1 copy.
Mounted Troops	...	...	...	1 copy.
G.O.C. R.A.	...	...	...	1 copy.
4 Bdes. R.F.A.	...	...	...	4 copies.
1 Heavy Battery	...	...	...	1 copy.
Div. Amm. Col. (if necessary)	...	...	...	1 copy.
Bde. Amm. Cols. (if necessary)	...	...	...	1 copy.
C.R.E.	...	...	...	1 copy.
Infantry Brigades	...	...	...	3 copies.
Signal Company	...	...	...	1 copy.
A.D.M.S. (if necessary)	...	...	...	1 copy.
Train (if necessary)	...	...	...	1 copy.

Total ... 19 copies.

3. *Detachments.*—When detachments (outposts, subsidiary columns, advanced flank or rear guards) are ordered and an officer is named to command them, the units detailed for such duties will send representatives at once to this officer for instructions unless the time and place of assembly have been already notified in orders.

The A.P.M. and an officer of the R.A.M.C. will proceed to the Headquarters billeting area as early as possible.

(b) *Brigade billeting parties* will follow the Divisional billeting party as closely as possible, and will consist of the staff captain with two mounted assistants.

An officer of the R.A. with two mounted assistants will accompany the staff captain of an infantry brigade if artillery units are to be billeted in an infantry brigade area.

The brigade requisitioning officer will join this party as soon as possible.

(c) *Regimental billeting parties* :—

- 1 Officer per battalion and 1 N.C.O. per company.
- 1 Officer and N.C.O. per battery.
- 1 Officer and N.C.O. per field company, R.E.
- 1 Officer and N.C.O. per field ambulance.
- 1 Officer and N.C.O. per divisional mounted troops.

It depends on tactical conditions whether regimental billeting parties can be pushed forward in advance of the fighting troops. Whenever the tactical situation permits they march in formed body at the head of their respective brigades in readiness to move forward. Dismounted men should be provided with bicycles.

10. *Allotment of billets*.—Officers will be allotted billets actually with their respective squadrons, batteries and companies, &c., which must be kept intact.

Bivouac shelters, when there is any risk of their being observed by the enemy, will not be erected until after it is dark. Horses and vehicles will be concealed as far as possible, and regular formations will be avoided when horses have to be picketed, or vehicles parked, in the open.

11. *Communications*.—On reaching new billets, a cyclist of the signal section will be sent from the headquarters of each brigade area to the officer commanding the signal company at divisional headquarters.

12. *Brigade Areas, Orders in*.—Officers commanding brigade areas will be responsible for issuing orders to troops in their areas so as to enable them to reach the starting point or to take their places in the column of march, in accordance with divisional orders, without any confusion.

At the starting point, or when units have taken up their

place in the line of march, the responsibility of the brigade area commander ceases.

13. *Bounds*.—Officers and soldiers are not to leave their brigade area without permission from the commander of the brigade area, and if permitted to leave must be fully armed unless otherwise ordered.

14. *Headquarters*.—Unless otherwise ordered, the positions of brigade area, and when necessary of outpost headquarters, will be fixed by the divisional staff in order to ensure certainty of intercommunication.

15. *Security*.—Officers commanding brigade areas are responsible for the local protection of their areas at all times.

On arrival in their respective areas the troops will not be dismissed from their alarm posts until all measures for security have been taken, the necessary orders have been issued, and a staff officer has reported to the area commander that the protective troops are in position.

All guards are to be informed of the position of the headquarters of their respective units and must be prepared to direct any officer or messenger to the houses occupied without any hesitation.

At night representatives of all units in a brigade area must sleep at brigade headquarters and be prepared to deliver orders as required.

In each area a signal will be arranged to warn all ranks of the approach of hostile aeroplanes, on which the troops will take cover.

All approaches to brigade areas will invariably be blocked by an obstacle at night (preferably by wire).

IV.—PROTECTION.

16. *Outposts, Relief of*.—When the division is about to continue its march, officers commanding outposts will never close or withdraw any of their command until the officers commanding advanced or flank guards have reported to them, either personally or in writing, that their troops are in position and ready to take up service of protection for the division.

The officers commanding advanced or flank guards will arrange to take over the duties of protection in sufficient time to enable the outposts to resume their places on the line of march as detailed in operation orders.

17. *Alarms.*—Except on sudden and urgent emergency, the "alarm" should be given through the ordinary channels of communication, *i.e.*, signal company and orderlies, without sounding bugles, and as quietly as possible. In cases of great urgency, when the alarm has to be sounded by bugles (*e.g.*, in scattered billets), the call will be taken up throughout the division, a report will be sent by the most rapid means to divisional headquarters, and an officer to confirm this report will be despatched immediately.

18. *Rifles.*—Unless otherwise ordered, all units on outpost, advanced flank or rear-guard duties, or when going into action, will march with their magazines charged.

19. *White flags.*—The display or hoisting of a white flag by the enemy is not a sign of surrender, but merely means that he has a communication to make.

If a white flag is displayed during an action firing will not be discontinued, but the appearance of the flag will be reported to divisional headquarters.

No white handkerchiefs or other white material are to be carried on the person.

20. *Aircraft.*—The circumstances in which fire is to be opened on aircraft will be defined, if necessary, by divisional headquarters. Aircraft will not be fired on unless instructions to do so have previously been issued by divisional headquarters.

In the event of friendly aeroplanes flying low, or attempting to land in their vicinity, troops will as far as possible give the aeroplanes a clear path in the direction in which they are travelling.

V.—TRANSPORT.

21. *Arrival of train.*—In order to guide the baggage sections of the train to the quarters of units, guides from each unit will be left at a suitable point or points on the road, and officers should be detailed for this duty when available.

22. *Details.*—All details accompanying the train will march in closed formations, except those men told off to attend to the brakes or drag shoes, who will march in rear of their respective vehicles.

23. *1st line transport on the march.*—The 1st line transport of infantry brigades, with the exception of two S.A.A. carts

and the pack animals in each battalion, is to be brigaded, and will march in rear of their respective brigades.

A brigade 1st line transport officer will be permanently appointed, and will be held responsible for the march discipline and the order of march. He will also superintend the supply of ammunition for his brigade.

When a brigade is about to go into action, the brigadier will select a place, clear of the roads, where the 1st line transport is to be drawn up and concealed.

The brigade 1st line transport officer will then have to—

(1.) Separate the brigade ammunition reserve (12 carts) from the rest of the transport.

(2.) Keep close touch with brigade headquarters and with each unit.

(3.) Know where the nearest R.F.A. brigade ammunition Column is.

(4.) Move when necessary his own brigade ammunition reserve to convenient places in accordance with the progress of the action.

(5.) Put the next senior transport officer in charge of the remainder of the 1st line transport, if the brigade ammunition reserve is moved forward, with orders to keep in close touch.

24. *Private vehicles.*—No private cars, carts or wagons, other than those authorized in divisional orders, may accompany the troops.

25. *Distinguishing flags.*—Every vehicle in the train will carry a distinguishing flag on the near side of the box seat. This flag will be provided regimentally, and each flag will be marked with the official abbreviated name or number of the unit to which it belongs.

The colours for the flags will be—

Divisional Headquarters—red, white and blue.

R.A.—red and blue.

Other Divisional Troops—blue.

... Infantry Brigade—red.

... Infantry Brigade—green.

... Infantry Brigade—yellow.

These colours will be used for all labels.

26. *Inspections.*—Regimental transport will be examined weekly by the brigade transport officer, who will arrange for any necessary repairs, refitting of harness, &c.

27. *Breakdowns.*—In case of a vehicle breaking down, vehicles in rear must not stop, and the road must be cleared as soon as possible.

VI.—INTELLIGENCE.

28. *Documents, &c.*—Individuals in possession of any maps or papers, which will be of any value to the enemy, will at once destroy them if in danger of being captured.

Officers and soldiers detached on special missions will not carry any written orders or instructions.

Any papers, letters or documents found on the march or in quarters will be collected and handed over to an officer for examination; those of importance will be handed over to the nearest staff officer.

Copies of Orders are to be reduced to a minimum, and all drafts, notes, &c., to be burnt.

Diaries.—Movements may not be recorded in private diaries until at least a week after they have taken place.

Maps.—All errors and important omissions discovered in maps will be at once reported to divisional headquarters.

29.—*Civilians, &c.*—All civilians whose conduct gives rise to suspicion will be arrested, whether they have passes or not.

Officers and soldiers are forbidden to give any military information to military attachés, press correspondents or civilians.

30. *Prisoners.*—Prisoners will be searched immediately on capture, and will be interrogated by an officer as soon as possible. Information obtained will be reported at once to the divisional headquarters. Wounded prisoners will be searched by a medical officer if possible.

If an officer or man of the division is captured he will give no information except his name and rank. This is all he is bound to tell the enemy.

31. *Cipher.*—All cipher work will be burnt immediately the ciphering or deciphering is completed.

No record of the cipher key word will be kept in writing.

VII.—SUPPLIES.

32. *Rations.*—Rations for men doing duty with the train will be drawn by the unit with which they are billeted. Thus A.S.C. drivers will often draw rations through infantry units, and infantry men on escort or similar duties may draw through A.S.C. units.

Sick and wounded, when leaving their units, will be supplied with such rations as are available. They will take their iron rations with them. Each field ambulance will carry a reserve of rations (a case of biscuits, a case of tinned meat, and a case of jam). Authority for purchasing local supplies in case of necessity will be given by divisional headquarters.

33. *Indents.*—Unless otherwise ordered, indents on A.B. 55 will be furnished by units to their supply officers by 5 p.m. two days before the supplies are required.

VIII.—MEDICAL.

34. *Wounded Men.*—All ranks are forbidden to divert their attention from the enemy in order to assist wounded officers or men.

A wounded man, who is unable to advance or to take any further active part in an action, will hand over his ammunition to the nearest soldier.

Medical units will hand over any ammunition brought in on soldiers to the nearest ammunition column or infantry unit.

35. *Evacuation of Sick.*—When marching from day to day :—

Field ambulances form receiving stations for the sick of units; the sick thus collected who require evacuation to the line of communications will be taken to convenient places fixed by the O.C. train, who will also name an hour at which the sick are to be ready at these places.

The supply section must not be unnecessarily delayed in order to pick up sick on its return journey, and the empty wagons, &c., will not wait if the sick have not arrived at the appointed places in time.

Infectious cases are never to be carried on supply wagons.

When troops are stationary the same procedure will take place as above, with the exception that the sick will be taken direct to the various refilling points if necessary.

36. *Sanitation. Evacuation of Quarters.*—When tactical conditions permit, and if civil labour is not forthcoming, each unit on quitting quarters will leave a party under a N.C.O. (not to exceed 10 men) in addition to the men detailed to the train vehicles, in order to fill in latrines and to clear the ground. These parties will march as detailed in paragraph 22.

Huts, shelters and straw will not be burnt. All paper, refuse, &c., will be burnt. Signboards, marks, &c., which would show strength of troops will be removed.

Sites of latrines will be marked with a large letter L, formed with stones, or with a notice board.

The interests and convenience of the local inhabitants must be considered as far as military exigencies permit.

37. *Inspection of Water.*—Drinking water will only be taken from sources approved of by a medical officer, and then only under the strictest supervision by the various R.A.M.C. detachments detailed for this duty.

IX.—VETERINARY.

38. *Duties.*—When in brigade areas, units which have no veterinary officers attached to them will be in charge of the veterinary officers appointed to the headquarters of infantry brigades. On the line of march and during operations these units will apply to the nearest veterinary officer available.

39. *Destruction of animals.*—Normally animals will not be destroyed without previous reference to a veterinary officer. In any case veterinary officers will be informed as early as possible of the destruction of any animals.

Carcasses of animals will be removed from the vicinity of public roads, water supply, likely camping grounds, villages, &c., and brigade area commanders are responsible that immediate steps are taken for the burial.

40. *Evacuation of inefficient animals.*—Inefficient animals will be sent to the mobile veterinary section which is located with the headquarter company of the train.

X.—MISCELLANEOUS.

41. *Daily duties.—Inspections.*—Arms, ammunition, feet, boots, socks and iron rations are to be inspected daily.

A *Divisional Headquarter Guard* will be furnished as follows :—

One officer and 30 N.C.Os. and men to be detailed by the

commander of the brigade area in which the Divisional Headquarters is quartered in billets, or by the commander of the brigade on duty in camps. This guard will also furnish any necessary fatigues for the divisional headquarters. This guard is to mount directly the camps, bivouacs or billets are reached.

When the division is at rest, this guard will mount an hour after sunrise.

Fatigues and working parties are to parade fully armed.

Fires.—Fires will be concealed and grouped together as far as possible, and extinguished when no longer required.

42. *Discipline.*—The closest attention will be paid to all details concerned with smartness in turn out, saluting, &c. Precisely the same discipline must be maintained as is expected in barracks in peace. On the march, the rules in regard to accuracy of distance and positions must be strictly observed.

43. *States.*—(a.) Field states on Army Form B 231 will be rendered weekly to divisional headquarters by 6 p.m. on Saturdays.

(b.) On back of the return will be shown—

(1) All reinforcements that have arrived since the last return was rendered.

(2) Number of German rifles sent to the base.

(c.) Return of all burials during the week will be rendered by 6 p.m. on Saturdays.

(d.) A daily casualty return of killed, wounded and missing will be rendered whenever the division is engaged. This return must show the names of officers written in block letters, and reach divisional headquarters during the evening, if possible, or early next day.

44. *Messages.*—All messages will be numbered from 1 to 999 and then commence at number 1 again.

The following index letters will be used :—

G.S.O., 1st Grade	...	...	...	G.
G.S.O., 2nd Grade	...	...	...	G.a
G.S.O., 3rd Grade	...	...	...	I.
A.A. and Q.M.G.	...	...	...	A.
D.A.A. and Q.M.G.	...	...	...	A.b
D.A.Q.M.G.	...	...	...	Q.
Brigade Major	...	...	...	B.M.
Staff Captain	...	...	...	S.C.

Similarly, when a commander is not named, but a certain unit directed to detail him, orderlies will be sent to the Headquarters of that unit, unless the time and place of assembly are notified in orders.

When the times and places of assembly are notified in orders, commanders or representatives of units will reach the rendezvous 15 minutes before their respective troops.

When the officer commanding a detachment is not detailed by name in divisional orders, the commander responsible for his selection will immediately report his name to divisional headquarters.

4. *Signal Service.*—Every care will be taken to protect lines laid by signal companies. If a cable is found to be exposed, dragged from the side of the road, or otherwise liable to damage, it will be replaced.

Permanent telephone and telegraph lines will not be cut or instruments damaged without definite orders from divisional headquarters, and these lines will not be used for communication purposes without reference to higher authority.

II.—MARCHES.

5. *Order of march.*—The normal order of march of the divisional headquarters at the head of the main body has been issued to those concerned.

The orderlies of officers who may be sent for by the G.O.C. will join the headquarters staff orderlies.

Motor cars and motor cycles will be driven in the space between the advanced guard and head of the main body.

Machine-gun sections will be brigaded; their position on the line of march will be decided by the brigade commander according to tactical requirements.

Unless otherwise ordered the brigade ammunition columns will be brigaded and march in rear of the last fighting unit, being billeted as a separate unit. The officer commanding this formation will receive orders direct from G.O.C., R.A.

The bridging wagons of the field companies will normally march in rear of the brigade ammunition columns.

The officer commanding brigade ammunition columns will arrange for supplies and billets for this R.E. detachment.

6. *Starting point.*—Units which, for the purpose of

reaching the starting point, use the route ordered for the division, will, as soon as they enter it, march at the normal rate and observe the usual halts, unless otherwise ordered.

7. *Halts.*—A halt for 10 minutes will take place every hour. Every unit in the main body will be halted by its commander at 10 minutes before the clock hour. The march will be resumed punctually at the clock hour.

During halts no men, vehicles, or horses are permitted to remain on the left side of the road, but officers will fall out on the left side of the road provided that the roadway is not thereby blocked.

8. *March discipline.*—Men who fall out sick will stay on the left side of the road, and will report to an officer of the first medical unit which passes. No one will be left in charge unless the man is dangerously ill.

Should it be necessary to halt an ambulance wagon in order to pick up a casualty, the ambulance will pull out to the side of the road and will rejoin the column at the rear of any unit.

Guns and vehicles which break down must not pass up the column while on the move in order to resume their former places; they will fall in at the rear of any unit, and will only resume their places during halts or by order of brigade commanders.

A medical officer with one or more ambulance wagons will be detailed daily to march in rear of the column.

When troops or trains are coming into quarters, no units are to send parties, horses, water carts, or other vehicles along the roads along which troops, &c., are moving, without leave from a responsible staff officer.

Officers' spare chargers will march in rear of the 1st line transport of their respective formations.

When going into billets troops must not halt on the road. If a halt is necessary, units must be formed up clear of the road.

III.—BILLETS.

9. *Billeting parties.*—(a.) The divisional billeting party will consist of the following representatives:—

D.A.Q.M.G.

A.D.C.

Staff Officers, R.A. and R.E.

Two motor cyclists.

An interpreter (if required).

45. *Postal*.—One man per artillery brigade, infantry battalion, or other unit will be detailed for delivery and collection of letters and parcels. These orderlies will be attached to and march with the supply section of the train.

46. *Pay*.—Units will notify the field cashier one week in advance of any requirements in cash.

47. *Time*.—The General Staff time, which will be in force throughout the division, can always be obtained from the signal company.

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