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NOTES ON
ARTILLERY STORE ACCOUNTS
AND
THE SUPERVISION
OF A R.G.A. SUB-DISTRICT

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NOTE ON ARTILLERY STORE ACCOUNTS

AND THE

SUPERVISION OF A R.G.A. SUB-DISTRICT.

This book is no authority in itself, but merely a guide to the study and application of the various Regulations relating to Sub-District Work.

ORDNANCE COLLEGE, WOOLWICH,

April, 1911.

LONDON :

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P R E F A C E .

This book has been drawn up chiefly for use by the Master Gunners' and young Officers' Classes passing through the Ordnance College, and it will doubtless be of use to Master Gunners on first appointment, as also to officers of the Royal Garrison Artillery on first joining a sub-district.

In a handy form for reference, it deals with the subject of Artillery Store Accounts, the clerical work and duties of a Master Gunner, and in a general way the responsibilities of Accountants and Sub-District Officers.

It is no authority in itself whatever, but merely a guide to the study and application of the various regulations relating to *Sub-district work*.

Corrected to 31st *March*, 1911.

ORDNANCE COLLEGE,
April, 1911.



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CHAPTER I.

ARTILLERY STORE ACCOUNTS.

1. *General Remarks.*

The C.R.A. will cause accounts to be kept and rendered in accordance with the detailed instructions for keeping store ledgers, as directed in Part 2, Section XIII A, Equipment Regulations, 1910, and "Instructions" in Appendix I, Part 1, Equipment Regulations, 1909, "For keeping Regimental and Staff Equipment Ledgers" (except as modified by Part 2, Section XIII A, Equipment Regulations, 1910), and will govern the procedure of all concerned in keeping store accounts.

Specimen folios of accounts (Army Books 184 and 185 and Army Form G 885), of Distribution Book, Expenditure Journal, together with copies of Receipt, Issue, Expense and Transfer Vouchers &c., are shown in Appendix III.

2. *General Arrangements for keeping Accounts.*

The master gunner or non-commissioned officer in charge of stores will keep the store accounts under the orders of the Accountant in charge of the Sub-District, who will be responsible for any loss that may occur, and will, when each of the accounts in his Sub-District is balanced on 31st March in each year, check, sign, and transmit one copy, together with vouchers supporting all transactions, to the Local Auditor of the Command, or if no Local Auditor has been appointed, to the Secretary, War Office.

The armament of works for coast defence is determined by the Army Council.

The details of equipment for the various natures of fixed armament are laid down in the tables, page 42 *et seq.*: Part 2, Section XIII A, Equipment Regulations, 1910.

The store accounts to be kept in Royal Artillery sub-districts will be rendered on Army Books 184 and 185.

The natures and numbers of stores (forming the armament or equipment) held on charge in Army Books 184 and 185 should agree with those authorized in details of equipment.

Army Book 184 is used to account for all equipment stores of a work of defence other than armament for land fronts and machine guns.

Army Book 185 is used to account for the equipment of armament for land fronts and machine guns.

Miscellaneous stores, not forming part of the authorized equipment, will be accounted for on the blank pages at the end of Army Books 184 and 185. Stores issued to Royal Artillery for experimental purposes, or proof of mountings, will be kept distinct from armament equipment stores.

Miscellaneous stores other than those held on sub-district charge will be accounted for in Army Form G 885, a specimen folio of such an account is shown on page 69.

At the discretion of the C.R.A. the whole of the works forming a sub-district may be accounted for on Army Books 184 and 185, or separate accounts may be kept for each work comprising the sub-district.

The Accounts, A.B. 184, 185 and A.F. G 885, will show the quantities in possession on 1st April, the "Receipts" and "Issues," and the "Balance" on 31st March following.

"Receipt," "Issue," and "Transfer" vouchers will be kept distinct from each other, and numbered consecutively on the docket at the head of the voucher according to date, in three distinct series, from 1 upwards, for the whole period of the Account.

In forwarding the Accounts to the War Office or Local Auditor the vouchers should be laid flat, and not folded up, and no ink or pencil marks (coloured or otherwise) be made thereon, nor should any correspondence appear on the vouchers.

Materials for repair, care and preservation of armaments, as well as all stores drawn periodically for expenditure (other than practice ammunition), will not be taken up in the accounts. They will be accounted for in the "Expenditure Journal."

Ammunition other than small arm issued on payment, will be taken on charge in the accounts. Ammunition supplied at money value rates for consumption at station, battle, service company or other practice, will when expended be written off charge by Expense voucher, Army Form P 1926, signed by the Accountant.

On these vouchers will be shown the nature and quantity of ammunition expended, together with the money value calculated at the rate laid down in "Statement showing complete cost of rounds of ammunition" in force for the time being.

Models, specimens, sections of shells, fuzes and tubes for instructional purposes will not be taken up in the accounts, but accurate lists of such articles will be kept in the master gunner's office or instruction room. Text books and handbooks will, however, be accounted for in the store ledgers.

Metal-lined cases and powder barrels, cartridge cylinders, and complete shell, issued for instructional purposes, will, however, be taken on charge in the store account.

Stores supplied in sets will be accounted for as directed in Appendix I, Equipment Regulations, part I.

Two copies of the Accounts are kept by the master-gunner. These will be balanced by him, and signed by the "Accountant," one copy with all vouchers being transmitted to the Secretary, War Office, London, S.W., or Local Auditor, before the 1st May. The other is retained as a record in the sub-district.

Certificates as under are furnished with the accounts:—

1. That the lists of official books, lithographs, maps, and printed records have been verified and corrected to date.
2. That the lists of models, specimens, sections of shells, tubes and fuzes for instructional purposes, have been verified and corrected to date.
3. That the tool chests are complete and contain the articles that should be comprised in them, as detailed in the Regulations.
4. That only the authorized proportions of cleaning materials, and materials for repair, care and preservation of armament have been demanded and expended during the year.

3. *Accounts, how kept.*

The ledger will contain a faithful record of all permanent equipment received and issued. The "Remain" (or the number of articles remaining on charge on 31st March, as shown in previous year's Accounts) is entered in the "State" column of A. B. 184 and 185.

As articles are received in the sub-district, vouchers (Receipt) accompany them, and if they agree with the description, numbers or quantities shown in the vouchers, the numbers are posted in the left hand (Receipt) folio, the number of the vouchers being entered in the column provided for the purpose.

Similarly for articles issued, or returned from the sub-district, Vouchers (Issue) on Army Form G 1033, are forwarded to the consignee to whom the stores are sent, and on return of the copy of the voucher signed by the consignee, the items are posted in the right hand (Issue) folio, the number of the voucher being posted in the space provided for the purpose.

To "balance" the account the "receipts" and "state" are added, and the totals entered in the "Total Receipts" column, and the "Issues" added together and "totals" entered in "Total Issues" column. The "Total Issues" are then deducted from the "Total Receipts" and the "balances" are entered in "Remain" columns.

The actual stock of stores in the sub-district should agree with the "Remain" or "Balance."

If the stock of stores on charge is found to be in excess of that authorized in equipment tables, arrangements should be made for their return to the Army Ordnance Department; if, however, it is less than that authorized, indents should be put forward on the Army Ordnance Department for the numbers "to complete equipment."

If errors are discovered in the "Accounts" during audit by the War Office or Local Auditor, "Observations on the Accounts," in duplicate, are sent by the Assistant Financial Secretary or Local Auditor to the Accountant for explanation, who thereupon furnishes replies to the various queries, and returns the documents as early as possible to the Local Auditor for settlement of the account, at the

same time making any necessary alterations in the sub-district copy of the accounts.

A copy of the "Observations," with the replies thereto, is retained in the sub-district.

4. *Receipt Vouchers, how dealt with.*

On receipt of vouchers for stores issued to the sub-district, the two copies are compared, and if they agree, the numbers, description, or quantities of stores are checked with the stores actually received, and if found correct, the "No. of Receipt Voucher," "Name of Sub-District," and "Period of Account," are entered in the right hand docket at the head of voucher, and the items on the voucher posted in the folio of the Accounts (A.B. 184, 185 and Army Form G 885). The Nos. of the folios where the entries are made are then inserted in the "Ledger Folio" column; the voucher is initialled by the master gunner, dated and then signed by the "Accountant."

The "Duplicate Copy," after having the right hand docket correctly filled in, as stated for the copy retained in the sub-district, is signed by the Accountant, and returned to the Army Ordnance Officer or other "Consignor." The items on the voucher are now noted against the items in the copy of the indent kept in the sub-district. The triplicate copy is (if supplied) filed in the sub-district as an office copy.

Should the stores received not agree with those shown on the voucher, a "Discrepancy Report" is sent to the "Consignor," pointing out the discrepancies, and the stores are not posted in the accounts until the matter is satisfactorily adjusted.

"Consumable" or "Expense" stores are not taken up in the accounts, but a brief note giving reasons and authority for not posting them in "Accounts," is inserted in the "Ledger Folio" column of voucher. They are noted and their disposal shown, in the "Expenditure Journal," from time to time.

Numbers shown in the "Designation" column are termed "within the line," and are not entered in accounts.

5. *Issue Vouchers.*

When stores are returned to the A.O.D., vouchers will be prepared in quadruplicate, by carbon process, on Army Form G 1083. The vouchers will be signed by the consignor, and one copy, duly signed by the consignee, will be returned as soon as practicable after the stores have been received.

The vouchers are sent to the "Consignee" on the same day as the stores are sent.

On return of the voucher, signed by the "Consignee," the various items are posted in the "Issue" folio of the account, and the Nos. of the folios where so entered are inserted in the Ledger Folio column of voucher, the voucher is initialled and dated by the master gunner and signed by the Accountant. The voucher is

then put up with the other "Issue" vouchers belonging to the account.

Vouchers are to be made out in strict accordance with the "Vocabulary of Stores."

Appurtenances, History Sheets, Memoranda of Examination, &c., charged "within the line," *i.e.*, the numbers shown in the "Designation column" of vouchers, are not posted in the accounts.

Expense (issue) vouchers, Army Form P 1925, are used to write off charge targets shot away at practice, the sub-district Accountant certifying that the various items were so shot away.

In cases where stores are lost, or rendered unserviceable through negligence or carelessness in sub-districts, they are written off charge by expense voucher (Army Form P 1925) (after the authority of the General Officer Commanding has been received) a reference being given thereon to the period of the pay list, and Nos. of the schedule and voucher in which the amount is credited to the public, and the authority under which the articles are struck off charge. These vouchers are treated as ordinary "Issue" vouchers, and numbered accordingly.

MS. certificate "Receipt," and "Issue" vouchers, are sometimes used to bring on, or strike off charge, surplus and deficient stores, an explanation as to the reasons for so doing being given on the vouchers. Army Form G 1049, adapted, would be used in preference to these MS. vouchers.

When Army Form P 1925 is used to strike off charge ammunition expended in firing salutes, Army Form G 905 is attached thereto. This shows the dates and occasions of salutes, number of rounds fired, nature of ordnance used, also cartridges and tubes expended, and in the column of remarks the authority under which the salutes were fired.

6. *Transfer Vouchers.*

Transfer vouchers (A.F. G 1049) are used principally in R.A. store accounts to support, under proper authority, transactions in the accounts where alterations to nomenclature or marks are involved, and to convert articles received in detail to a complete whole, such as components of chests tool, gys, &c., or *vice versa*.

The articles to be written off charge are entered in 2nd and 3rd columns, and those brought on charge in 5th and 6th columns; the Nos. of the folios of accounts where the transactions appear are entered in the 1st and 4th columns.

The authority for the transaction, such as a War Office letter, para. of L. of C., local authority, &c., is then inserted at the bottom of the transaction.

When used to transfer an article held under wrong nomenclature to a correct one, a clear explanation of the circumstances should be given and the necessary authority quoted.

If cross references are made, transfer vouchers are not required to support the transfer of stores from one folio of an account to another.

7. *Indents for Equipment.*

Indents are made out in triplicate and rendered in duplicate in strict accordance with the Priced Vocabulary of Stores, only one section appearing on one sheet, each of which will bear the sub-district stamp, the various sheets being so fastened together as to be easily detachable, each sheet being prepared for the signature of the Accountant. The authorities authorizing the supply are invariably to be quoted, *e.g.*, "In Annual Estimate"; "*Vide* §—, Part 2, Section XIIA., Equipment Regulations"; "To complete equipment"; "To replace unserviceable through fair wear and tear"; "*Vide* §— *List of changes in War Matériel*; first supply, &c."

Fuze hole plugs, base plugs, grumnets, &c. will in all cases be demanded, charged, and accounted for as separate articles of supply.

As the whole of the items of one sort are received, or the indent has been met "in full," the numbers will be noted on the copy of the indent. It can thus easily be seen how far the indent has been complied with.

Indents are numbered consecutively from 1 upwards, annually, and the necessary dates inserted.

Copies of the indents are filed in the sub-districts.

Army Form G 997 is used in demanding ordinary equipment and stores.

Army Form G 988 is used in demanding practice and blank ammunition.

Army Form G 1029 and G 1029A to accompany Army Form G 997 for paint and cleaning materials.

Army Form G 1045 is used as an indent on A.O.D. for alterations or repairs to armament stores.

8. *Indent for Candles, Oil, Wick, &c.*

A quarterly manuscript requisition will be submitted to the Officer in charge of Supplies, Army Service Corps, for candles, oil, and wick required for lighting magazines, &c., in the sub-district, and an expense voucher (Army Form F 771) sent to that officer monthly, showing the expenditure of same and the quantities remaining on charge.

9. *Expenditure Journal and Work Book.*

Army Book 127 may be used for this purpose to show the disposal of articles not taken on charge in the accounts, *i.e.*, bricks bath; cloths sponge; paint, and materials for care, preservation, and repair of ordnance, &c.; also to show quantities of oil and liquid lost through leakage, &c., from hydraulic buffers, hydro-pneumatic cylinders, and hydraulic jacks.

The left-hand pages should be ruled up to show the Nos. and dates of vouchers on which stores are received, description, Nos. and quantities of articles received, and the right-hand pages to show dates, description, Nos. or quantities expended, and a Remarks column, for explanation of, and authority for, expenditure. By totalling the

various columns and deducting "issues" from "receipts" a "balance" can be struck, so as to show at any time how the stock of materials, paint, &c., stands.

A record of the working parties employed in cleaning and painting ordnance, laboratory and other operations, is also kept in this book, the names, rates of pay and hours worked, being shown daily and signed by the sub-district officer.

At the end of the month Pay Lists are submitted on Army Form O 1677 for cleaning and painting ordnance, and on Army Form O 1779 for other work. To the latter is attached Army Form B 156, "Requisition for Military Labour," giving a detail of the artificers, labourers, &c., employed. These are signed by the C.I.O.M., and countersigned by the accountant and Commanding Royal Artillery

10. *Distribution Book.*

The "Distribution Book," Army Book 211, shows the distribution of the whole of the ordnance, mountings, stores, and ammunition throughout, and in the order they would be met with, when checking the various magazines, cartridge, shell, artillery, and other stores in the sub-district.

The entries in the column "Description of Articles" and the names of the magazines, artillery, stores, &c., at head of page, should be made in ink, the remainder in pencil.

The description of articles is filled in from the Accounts (Army Books 184 and 185 and A.F. G 885) in proper vocabulary order, one line being used to show the numbers of articles of a like nature. These are added, and the totals for each separate nature shown in the "Total" column, at the end of the line.

These "Totals" should agree with the "Remain" of the accounts.

As soon as stores are received in, or issued from the sub-district, the distribution book should be altered accordingly.

"Loan stores" will be entered in the distribution book with the other stores, the number to be shown in a separate column.

11. *Errors in accounts—how they may arise.*

Bringing forward a wrong Remain into "State" columns of accounts.

Posting "Receipts" in the "Issues" columns, and *vice versa*.

Inserting stores under wrong headings, owing to posting items in the wrong column.

Omitting items altogether from accounts, whether "State," "Receipts," "Issues," or "Remain."

Neglecting to bring "State" down to "Total Receipts" and "Remain" columns, when there have been no transactions.

Wrong calculations in "balancing," either in "Total Receipts," "Total Issues," or "Remain" columns.

12. *Good accounting—points of.*

Accuracy in keeping store accounts.
 Neatness and legibility.
 Punctuality in rendering store accounts, returns, &c.

13. *Canvas shoes, magazine clothing, disposal of.*

When canvas shoes, magazine clothing, magazine boots or shoes are worn out, A.F. H 1172 is prepared in triplicate.

One copy is sent to the contractor and two copies to the Regimental Paymaster, who, when the money has been paid, will return one completed copy to the Accountant.

The Accountant will then arrange with the contractor for the removal of the stores.

The stores are written off ledger charge on A.F. P 1925 supported by the completed H 1172.

14. *Books and Records in connection with Accounts.*

The following books and records are kept in connection with Artillery Store Accounts:—

Account, Army Books 184 and 185.

Distribution Book, Army Book 211.

Copies of indents, Army Form G 997.

Expenditure Journal, Army Book 127.

Files of correspondence and copies of returns.

Register of correspondence.

Memorandum of Examination of Guns (B.L., R.B.L., R.M.L., Q.F., and machine guns and howitzers).

Memorandum of Examination of Mountings.

Record of Readings, Wet and Dry Bulb Thermometer, Army Form G 944.

Cartridge, gunpowder, fuze, tube, and shell record, Army Form G 854.

History Sheet Reservoirs, Compressed Air, Army Form G 881.

“Army Orders” and “List of Changes in War Matériel” are supplied monthly to sub-districts.



CHAPTER II.

MISCELLANEOUS ARMAMENT RECORDS AND RETURNS.

(a) RETURNS.

1. *Return of Artillery War Garrisons. Army Form B 83.*

This form shows in detail the Artillery War Garrison (in terms of Regulars) allotted to an Artillery Command. The number of guns, instruments, &c., is taken from the latest revision of the "Chain of Command" for fixed armament and from the "Approved Armament" for armament for Land Fronts.

For the purpose of calculating the Artillery War Garrison required the fixed armament guns are classed as "Day," "Night" or "Day and Night" guns. The personnel required is calculated from the "Instructions for calculating War Garrisons" in force for the time being.

2. *Annual Return of Field and Mounted Garrison Ordnance, Army Form G 844.*

On one portion of this return is shown the whole of the garrison ordnance mounted in the sub-district, also the mountings, &c. On the other portion, machine guns and all ordnance mounted on travelling carriages, except those in possession of Royal Horse, Field or Territorial Artillery.

Accompanying Army Form G 844 is a MS. "Return of Dismounted Ordnance," showing position of dismounted ordnance, register No., nature and weight, and reasons for remaining dismounted in the sub-district.

3. *Detail of changes in Armament, Army Form G 819.*

On the 1st of each quarter, except 1st April, this return is submitted by Commanding Royal Artillery to the Coast Defence Commander. It is compiled from the returns sent in by sub-districts.

Any changes in the armament, such as mounting and dismounting, receipt and issue of ordnance, are recorded therein, also cause of ordnance remaining dismounted, and the mountings available for such ordnance.

4. *Royal Artillery Annual Estimates for Stores.*

To enable the Army Ordnance Department to make provision for supply of ammunition and stores to Royal Artillery during the ensuing year, and thus meet the indents put forward, "Annual Estimates" are submitted by officers in charge armament districts to the Commanding Royal Artillery, who causes Royal Artillery district estimates to be compiled therefrom, which are forwarded to the Chief Ordnance Officer by 1st August. The estimates include the following:—

Stores required to complete equipments.

Stores to replace others which may become unserviceable.

Practice ammunition and ammunition to replace that which may be expended from equipment at practice.

Rockets and lights for night practice.

Ammunition for practice from guns not forming part of the approved armament.

Ammunition for field days, time guns, manœuvres, and salutes.

Cleaning materials, paint, &c., for care and preservation of armament.

Targets.

For these services Army Forms G 800 and G 801 are used, the former to include stores "for existing armaments," the latter for "stores other than existing armaments."

The estimates are made out in vocabulary order, and the various authorities for supply quoted in the "Remarks" columns.

Before compiling the estimates, a careful inspection of the stock of stores in the sub-district should be made, and any stores likely to become unserviceable or which may require replacing should be noted. An average of the past three years' "Receipts" is a useful guide to the numbers likely to be required.

In preparing Army Form G 800, the table on the back of the form is filled in. The stores to be provided, quantities of cleaning materials, and paint allowed for care and preservation of the armament, taken from Army Form G 1029 and G 1029A are then inserted.

Only such stores as may be required to replace others belonging to the existing armament are to be included in Army Form G 800.

Army Form G 801 is used for "stores other than those belonging to existing armaments," *i.e.*, stores for lecture rooms, drill stores at headquarter stations, stores for ordnance not forming part of the armament, ammunition for same, also for time guns, manœuvres, salutes, and field days, targets for practice, &c. It is compiled in a similar manner to Army Form G 800.

A separate sheet is used for each section in compiling the estimates.

Two years' supply of practice ammunition should be included in the estimates.

The abolition of the annual estimates for the provision of stores for R.A. sub-districts (except practice ammunition) is now under consideration.

5. *Record of Armament Guns.*

A.F. G 951.

Army Form G 951 is compiled annually in Royal Artillery Districts. The records are "Strictly Confidential," and are to be compiled with extreme exactness, and in accordance with the "Instructions" on the back of the form.

They are compiled by the Royal Artillery, all entries being made by officers; observations and measurements being made (as far as possible) personally by them. So far as space permits all the works in each Section of Defence will be entered on one form, a blank line being left after each work.

The form is to be completed for *fixed* armament guns only.

Each "Record" is prepared in duplicate, signed by the General Officer Commanding. The original is submitted to the Director of Artillery on 31st March each year, and the duplicate retained by the Coast Defence Commander or C.R.A. *Vide* Equipment Regulations, Part 2, Section XIIA, 1910, paras. 55-57.

A note-book should be kept in each sub-district, and any alterations to the works, guns, mountings, &c., noted therein at the time, so as to facilitate the making out of the "Amendments" when the "Records" are being compiled.

6. *Repairs to Gun, Mountings, &c.*

Indents (Army Form G 1045) are sent to the Chief Inspector of Ordnance Machinery (through the Chief Ordnance Officer) at the end of each month, to carry out repairs to guns, mountings, jacks, lifts, &c., as may be necessary. In case of additions or alterations authorized by *List of Changes in War Matériel*, after receipt of the fittings or stores necessary to carry out the work, an indent will be at once forwarded for Inspector of Ordnance Machinery to carry out the service.

Repairs to P.F's. and D.R.F's. are usually carried out under the I.G. on requisition in A.F. G 1045.

7. *Repairs to Works and Buildings.*

Quarterly inspections are made by the Division Officer, Royal Engineers, of the whole of the works and buildings in Royal Artillery sub-districts, in order to note repairs that may be necessary to keep the works, &c., in good order.

The items are embodied in Army Form K 1308 by the Royal Engineers, signed by the Division Officer and Officer in charge of sub-district, and after approval by the Commanding Royal Engineer the services are carried out.

Should repairs be so urgently necessary that they could not be held over till the quarterly inspection, an "Immediate and Urgent Requisition for Repairs" (Army Form K 1306) is sent to the Division Officer, Royal Engineers to carry out the service.

R.E. Services.

C.R.A. will forward the R.E. proposals (new) direct to the C.R.E.

If the C.R.E. is unable to carry out at once the service asked for, whether from lack of funds or authority, he will refer the matter after consulting the O.C. Troops at the station, to the Chief Engineer.

The questions will then be considered by the G.O.C. i/c administration, who, if he thinks the service is desirable, but is unable to sanction its immediate execution, gives instructions for it to be included in the Estimate book.

Repairs and maintenance services will be dealt with in a similar manner.

8. *Estimates for Working Pay, &c.*

An estimate is submitted annually to the Commanding Royal Artillery on the date ordered locally of the amounts of working pay for cleaning, painting, and moving ordnance, laboratory operations, &c., which will probably be required in the sub-district for the ensuing year.

9. *Estimates for Candles, Oil, Wick, &c.*

An estimate (M.S.) will be furnished annually to the Officer in charge of Supplies, Army Service Corps, for the quantities of candles, oil, wick, &c., required for lighting magazines in the sub-district.

10. *Stationery, Supply of, in Sub-Districts.*

Stationery and army books are supplied to sub-districts. *Vide* Allowance Regulations.

The annual requisition (Army Form L 1851) is prepared in the Armament Office, each master gunner submitting a list of his requirements.

11. *Pay Lists for Painting Ordnance.*

These Pay Lists (Army Form O 1677) are submitted to the Commanding Royal Artillery in the Command either on the conclusion of the painting or monthly, as found desirable. On the front page is entered the name of the non-commissioned officer superintending, hours employed, and amount. In the inside pages are shown the articles cleaned and charges for same, in the order laid down in the Tables, Part 2, Section XIIA, Equipment Regulations, 1910. The total amount, including charge for superintendence, is placed in the right-hand bottom corner, the other columns having been previously totalled.

The certificate at the head of page, on back of form, is then signed by the officer in charge of sub-district, and the Pay List sent to the Commanding Royal Artillery for countersignature, who submits the Pay List to the Regimental Accountant. A M.S. "List

of men employed and amounts due to them" is submitted with the Pay List. The list shows the company to which each man belongs; the amount is credited to the man's pay account by the Regimental Paymaster.

A copy of Army Form O 1677 and list are kept as a record in the sub-district office.

12. *Manning Table, Army Form A 2008.*

This table shows in detail the number of officers, non-commissioned officers and men, Royal Artillery, and Territorial Force allotted on mobilization to man a particular fort or work, the numbers required for Fire Commander's and Battery Commander's Staffs, Gun Groups, Armament for Land Fronts, Ammunition detail, and their allotted stations on service.

13. *Weekly Sub-District Report.*

This report is furnished on Army Form G 948 by sub-districts weekly to the C.R.A.

The report certifies that the guns, ammunition, and stores are in good order, and fit for immediate service, that the officers attached to the sub-district have visited it, and that the various orders have been complied with, &c.

Spaces are left below the signature to show—

1. Guns temporarily out of action.
2. Work performed during the week.
3. Outstanding repairs to be done by R.G.A. and A.O.D. artificers.
4. Stores due on demand.

14. *Local "Forms" and "Returns."*

In addition to the List of Returns to be furnished, referred to in the King's Regulations and elsewhere; there are in some commands a number of local "Returns, &c.," to be furnished. A list of such Returns is circulated in the command for the information and guidance of all concerned.

15. *Examination of Ordnance, Sub-Calibre guns and aiming Rifles.*

On a piece of ordnance approaching the limit of rounds to be fired as laid down in paragraph 218, Regulations for magazines, &c., Army Form G 875 will be sent to Chief Ordnance Officer, who will arrange to have the piece examined. The data for this return are obtained from the memorandum of examination. Firing from such ordnance will cease until the gun is reported as "serviceable" for another series of rounds.

After examination, the report of the Inspecting Officer on Army Form G 875 is sent to the officer in charge of the gun, for transmission to Commanding Royal Artillery. This is passed to the accountant to note and take any action necessary, *i.e.*, if sentenced to be "re-vented," to demand the vent and requisition I.O.M., through Chief Ordnance Officer on receipt, to carry out the service.

For further instructions, *see* paragraphs 705 *et seq.*; Regulations for Army Ordnance Services, 1908, Part II.

An annual report of rounds fired will be sent to the Chief Inspector, Woolwich, on Army Form G 872, through the C.R.A. annually (1st January).

16. Inspection by I.O.O.

When the I.O.O. notifies his intention of carrying out his inspection, the Master Gunner should visit magazines, shell stores, &c., to ensure that the ammunition is properly grouped and recorded on A.F. G 854. The date of the I.O.O. inspection should be noted on A.F. G 854 and initialled by the Inspecting Officer.

The army forms G 814, 842, 897, 900, 911 required by the I.O.O. will be rendered in duplicate, and forwarded through the C.R.A. to the C.O.O. The I.O.O. will then make his selections and return the forms to the C.R.A.; if he requires selections to be sent to him it will then be done, otherwise he will collect them at his visit.

The Master Gunner and officer in charge of sub-district, or a deputy, should accompany the I.O.O., and any ammunition sentenced for practice or condemnation should be marked in paint by a laboratory man, and placed on one side to avoid future mistakes.

All packages opened for inspection should at once be closed and marked "Examined," with date and station, and labels renewed by a laboratory foreman.

If plugs of filled shells have been sentenced to be re-lubricated it will be carried out as a laboratory operation.

Shells sentenced for repainting by the I.O.O. must receive the C.D.C.'s approval, and this authority is to be quoted in the painting pay list and will be carried out as a laboratory operation.

Any fuzes, tubes, &c., taken from the work for proof will be written off charge on A.F. P 1925 signed by the I.O.O. or may be issued to A.O.D. on A.F. G 1033. Broken cylinders may be kept for practice or returned to A.O.D., and full cylinders demanded to complete the equipment. Fuzes D.A. No. 13 are dealt with as directed in Regs. for A.O.S., Part II.

The magazine records of thermometers on A.F. G 944 will be produced for his inspection and authority to destroy.

On return from C.I.W. showing "final sentence," he will notify result to C.R.A. with instructions as to the disposal of all ammunition affected.

Indents will then be sent to the C.O.O. to replace the condemned ammunition.

After his inspection he will complete the army forms showing the sentence on the ammunition examined, and will forward the duplicate set of forms to the C.R.A. to note and return; (a copy will be kept in the sub-district), and the original to the C.R.A. to transmit through the G.O.C to the C.I.W.

(b) RECORDS.

1. *Records of Readings of Wet and Dry Bulb Thermometer, Army Form G 944*

With a view to the due ventilation of the magazines and cartridge stores, as directed in Section III, Regulations for Care and Preservation of War Matériel, the wet and dry bulb thermometer, and thermometer inside the magazine or cartridge store, will be observed twice a day, morning and afternoon, and the readings recorded on Army Form G 944. These are signed weekly by the sub-district Officer, and retained for the I.O.O. to see.

2. *Cartridge, Gunpowder, Fuze, Tube, or Shell Record, Army Form G 854.*

These "Records" are kept in Royal Artillery sub-districts for each magazine or store containing ammunition on Royal Artillery charge, the various "Groups" in each magazine or explosive store being shown thereon, and after being once begun, great care will be taken to preserve their continuity.

During the six months ending 31st March and 30th September every year, the officer in charge of the sub-district, assisted if practicable by an officer of equal or superior rank detailed by the Commanding Royal Artillery, will specially inspect each magazine or explosive store containing ammunition in his charge, and see that the records are duly posted up.

At the periodical inspection of the Commanding Royal Artillery and Inspecting Ordnance Officer, the dates are to be recorded on the form, and initialled by the inspecting officer.

As the records are used up they will not be detached from the inventory boards, but the new forms will be pinned over them, so that reference can easily be made to the previous "Records."

3. *History Sheets and Biennial Returns, Reservoirs Compressed Air.—Vide Regulations for Care and Preservation of War Matériel.*

4. *Fort Record Book.*

In every fort or work a permanent record of the fort is embodied in Army Book 360, in which is set forth the history, general object and armament of the work, and it is the duty of the officer in charge of sub-district to keep up all such details so complete, that

an officer on taking charge will find all necessary information ready to hand, and in the fullest detail.

The book contains various tables, maps, charts and data used in connection with the manning and fighting of the fort, and an index.

This book will be carefully kept up to date by the officer in charge of the work, and will be produced at the General Officer Commanding's inspection.

It is kept under lock and key.

A part of the book will be used as a journal in which will be entered, as they occur, all transactions permanently affecting each work, or likely to be historically or technically of use or interest to future Commanding Officers.

5. *Memorandum of Examination (Ordnance).*

This is a printed form issued with each B.L., R.B.L., R.M.L., and Q.F. gun, rifled howitzer and machine gun. With B.L. and Q.F. guns a statement of wear and tear of rifling, Appendix B, accompanies the memorandum.

The memorandum is intended to present a complete history of the gun or howitzer from the date of its issue from the "Inspection Branch," Royal Arsenal, to its final return to store.

It is always to be kept with the gun, and to accompany the vouchers when the gun is returned to store, being charged "within the line" on the voucher.

The number of rounds fired, including blank charges, is to be entered by the officer in charge at the conclusion of each day's practice, so that an accurate record of the firing may always be kept up.

Particular attention should be paid to paragraphs 217 and 218, Regulations for Magazines, &c., so that no gun may fire more than the allotted number of rounds before being examined.

The result of any examination will be added by the officer or examiner who performs the duty, and the rounds totalled up to date.

The annual return, Army Form G 872, for rifled ordnance is completed from these memoranda, reference being made to the previous annual, or special return, at the same time. A certificate will be included in the returns that the memoranda are in possession and completed to date.

No printed record of S.B. ordnance is kept.

In cases where S.B. ordnance are used for practice or salutes, a manuscript book should be kept, in which a record of rounds fired should be noted, with a view to the examination of the guns subsequently.

All ordnance used for saluting purposes only will be examined annually, although the prescribed No. of rounds may not have been fired.

6. *Memorandum of Examination (Mountings).*

This memorandum, much similar to that for use with guns, is issued with garrison service mountings.

It is intended to preserve a complete history of the mounting from the date of its issue from the Royal Arsenal to its final return to store; it is always to be kept with the mounting, and returned with the vouchers to store, being charged within the line. Any alteration due to change of pattern or any repairs to the mounting, with the dates thereof, must be recorded in the memorandum.

The number of rounds fired, including blank charges, will be entered in the memorandum of examination of the guns and mountings, by the officer in charge, at the conclusion of the day's practice, in order that an accurate record of the firing may be kept.

The result of any examination will be added by the officer or other examiner who performs the duty, and the rounds totalled up to date.

A.F. G 874, Record of rounds fired, is submitted annually.

7. *Accommodation Tables.*

Accommodation tables are compiled for Works of Defence and show the accommodation required and available for the troops allotted, in peace and war.

8. *Cordage, Slings, Tackles and Rope Gear.*

A complete record of all rope and rope slings should be kept by those responsible for their use and custody. Pegs should, if possible, be arranged in the storehouse or building in which they are kept, and a place allotted to each, with a board upon which should be recorded—

A description of the rope, its age, when received, when last tested, its safe working load, and the kind of heavy work to which it has since been subjected.

All responsible persons who in the course of their duties require to use ropes and rope slings for lifting heavy weights should first carefully examine them, and by periodical or frequent test satisfy themselves as to their fitness for the work required.

Slings can be tested before issue at any Ordnance Store station where there is a crane or gyn capable of lifting the weight required. Such weight need only be raised a few inches off the ground, so as not to damage the gun or other article used for the test. In any case in which it may be considered desirable, application may be made to have ropes and rope slings tested at Woolwich.

9. *Inventories.*

In each store, magazine, &c., in a work of defence, an inventory of the contents should be prepared, and kept corrected to date—showing the numbers and natures of the articles held in charge and therein stored.

CHAPTER III.

GENERAL INSTRUCTIONS.*1. Issue of Stores to a Sub-district.*

When stores are ready for issue to a sub-district, a notification is sent on Army Form G 981 by the Army Ordnance Officer, on which is shown the No. of the Indent, if the issue be "in full," "in part," or "in completion"; also the weight, and if the stores be "bulky" or "not bulky."

If the Army Ordnance Department premises be near the sub-district, the master gunner arranges for transport and fatigue party, and personally attends to receive the stores from the Army Ordnance Department.

If the Army Ordnance Stores be at a distance from the sub-district, the stores are packed and despatched by the Army Ordnance Department; "Bills of Lading," if sent by vessel, or "Carriers' Notes," if by carrier, accompanying them.

These documents should be verified, and any deficiencies or damage to packages noted thereon, and at the same time pointed out to the master of vessel or carrier.

The "Bills of Lading," or "Carriers' Notes," will be signed and returned to the "master" or "carrier" by the master gunner, and a further report detailing the loss or damage sent to the "Consignor" by the "Accountant."

2. Returning unserviceable, surplus, &c., Stores.

As unserviceable stores are replaced, they are returned, together with any surplus, also empty packages (cases, wood packing, oil drums, iron cylinders, casks, &c.) to the Army Ordnance Department. Before returning the stores, application is made to the Army Ordnance Officer to receive them, the nature and weight of stores and proposed date and hour of return being stated.

If the proposal be approved, application is made (at least 24 hours before being required) for transport to the officer in charge of transport, and arrangements made for fatigue parties for loading and unloading stores, escorts, &c.

When stores are packed in cases, &c., a packing note (A.F. G 1028) showing in detail the contents of the case, and signed by the master-gunner or person responsible is placed inside each case, &c.

"Bills of Lading" or "Carriers' Notes" are made out and signed by the master gunner, and handed to the master of the vessel, or carrier, if returning stores from a distance.

- Handbook for each nature of Ordnance in Sub-District.
 " Depression and Field Range-finders (where issued).
 Handbook for Position-finder (where installed).
 " Military Artificers.
 Range Tables for each nature of Ordnance in Sub-District to be corrected for height of Battery.
 Treatise on Ammunition.
 " Military Carriages.
 " Service Ordnance.
 " Service Explosives.

6. *Correspondence and Registration of same.*

Correspondence should be dealt with as directed in King's Regs. 1908, Sec. XIV.

All communications connected with the supply of stores whether authorized by or in excess of regulations should be addressed to the C.O.O.

Copies of all correspondence, returns, &c., received or sent, are to be retained in Royal Artillery sub-districts.

All documents should be registered, numbered consecutively from 1 upwards, and stamped with the sub-district office stamp. After being dealt with, the copies are filed.

On reaching about 100 files, each packet should be put away for future reference.

The index of the Register is kept up daily.

Copies of "Returns" are filed in a guard book.

7. *Salutes and Flags.*

A list of stations at home and abroad at which salutes are authorized to be fired and flags flown, with numbers of rounds for the various salutes, is laid down in King's Regulations.

As a general rule no salutes will be fired before 8 o'clock in the morning, nor after retreat in the evening, nor during the usual hours for Divine Service on Sundays. In exceptional cases the course to be pursued will be determined by the General Officer Commanding the troops.

Full instructions for firing salutes from B.L., M.L., and Q.F. guns, are laid down in Garrison Artillery Training, Vol. I.

Flags for flag stations are supplied by Barrack Department on demand.

Where two flags of the same description are supplied, the smaller is for use in bad weather.

Flags are hoisted at 8 a.m., or as ordered locally, and lowered at "Retreat."

Ammunition expended in firing salutes will be struck off charge on Army Form G 1049, to which will be attached Army Form G 905, and also copies, duly signed, of local orders issued in connection therewith.

8. *Inspection of Armaments.*

The Commanding Royal Artillery, or an Officer deputed by him, will make an inspection of the ordnance, mountings, ammunition, and stores forming the armaments of districts twice yearly.

9. *Barrack Stores for War Shelters.*

Are supplied as required at discretion of C.R.A. *Vide* para. 101 Equip. Regs., Part 2, Sec. XIIa, 1910, and paras. 371 A to D Regs. for D.A.O. Services, Part I.

10. *Lettering of Guns.*

Each gun group will be distinguished by a letter, and each gun by its number in the group, from right to left. The letter and number, thus: $\frac{A}{1}$, $\frac{B}{2}$, will be painted on the breech or cascable; white on a dark ground and black on a light ground, and also upon the expense stores, &c., which supply the group.

11. *Maintenance of Equipment.*

The Royal Artillery is responsible for the guns and batteries of the fixed and movable armaments, and for the tactical control only of Electric Lights through orders issued to E.L. Directors.

12. *Stores Lost, Damaged, or Destroyed.*

When stores are lost, damaged, or destroyed, and it is a question of consideration upon whom the cost of making good the same should fall, the matter will be dealt with as directed in paras. 668 and 670 and App. XXII King's Regulations. A.F. G 998 will be prepared in duplicate and will accompany the original report or proceedings.

Indents for stores required on replacement may be put forward on the A.O.D. when the report or proceedings is forwarded by the G.O.C. to the War Office for decision, or when the G.O.C. decides the action to be taken on a report. The registered number and date of the G.O.C. decision will be quoted in the indents.

The authority of the War Office or G.O.C. will be the authority to write the stores off charge on A.F. P 1925. If the stores are

not to be paid for, these vouchers will be forwarded with the equipment account. If to be paid for, A.F. P 1963 will be prepared and used as a voucher to the pay list. This will usually be done by the company concerned. A.F. P 1925 in this case will then be sent to the Regtl. Paymaster to enter thereon the number of the voucher and period of account in which the credit will be found, and on return of the form with the information thereon it will be used as a voucher for striking the articles off charge. If the War Office deal with the matter the authority will be shown on A.F. P 1925.

13. *Periodical Painting.*

Painting may be biennial or annual, or more often at the discretion of the C.R.A.

Before painting takes place the authority of the C.R.A. should be obtained to put the guns out of action. An indent on A.F. G 1045 should then be forwarded to the C.O.O. for the I.O.M. to overhaul the guns and mountings. The guns, if not dismantled, should be raised out of the trunnion holes or cradle, which should be cleaned and lubricated.

After overhaul, the guns, &c., should be scraped and cleaned, sight sockets plugged, lines and marks thoroughly cleaned out, so that they may be distinctly seen, and the whole wiped over with rough canvas. The first coat of paint should then be applied and stopping done before the second coat.

The colour of the paint will vary with local conditions, but should render the guns as inconspicuous as possible and harmonize with the surroundings. The usual custom is to paint the under-surface of gun and mounting white, to reflect the surface colouring, and the remainder of the gun and mounting in irregular patches of different colours. The surface of all paint should be dull.

After painting, one gun or mounting in each group or battery should be marked with the date of painting—month and year.

Bright parts should not be painted, but cleaned with the authorized materials.

After painting the I.O.M. should be requisitioned to have the lettering of guns and mountings renewed. Stencils for this work may be obtained from the A.O.D. on indent, unless it is to be done by a qualified workman.

Tarpaulins, as required, are supplied by A.O.D. on loan, for use when painting is being carried out.

14. *Command Lines.*

Command lines are divided into three classes, viz. :—

- (a) Fortress exchange lines.
- (b) R.A. command lines and alarm circuits.
- (c) R.E. command lines.

Fortress Exchange Line.

Fortress command lines consist of all defence communications from fortress commanders to section commanders and to tactical points.

This system should provide for all the communications necessary for the general control and administrative purposes in war.

R.A. Command Lines.

These consist of direct telephone circuits between F.C.'s, B.C., G.G.C.'s, and for circuits from P.F. cells to guns, alarm circuits, artillery look-out posts, &c., also lines from the port war signal station to the adjacent fire commanders.

R.E. Command Lines.

These consist of circuits established for R.E. requirements in connection with electric light installations, &c.

Maintenance.

The officer i/c electric lights and telephones is responsible under the chief engineer for the provision and maintenance of all the electrical communications in a fortress.

The R.G.A. is responsible for the provision and maintenance of all instruments for range-finding, range and order dials, &c. This includes the telephone for communication between the transmitting and receiving cells of P.F. instruments.

Urgent repairs to telephones are effected by submitting A.F. K 1306 to officer i/c electric lights.

15. Telephones and Telephone Operators.

The R.A. furnish operators for all instruments in the R.A. command lines, including B.C. and F.C. posts.

Portable telephones will always be kept in a dry place, and when not in use will be closed.

They should be clean, free from dust, and, to prevent damage, not roughly handled when taken out of or returned to store.

No oil should be used to clean the instruments or plug boxes, and a diagram of connections and instructions should be pasted on the lid of the box. Spare part and cells should be held on charge, as inventory, and all repairs carried out by the R.E.

The telephone operator on arriving at his station will see that the instrument is in good working order, and that the code and telephone forms are in the cell ready for use. He must on no account leave his telephone during drill, practice, or action. Messages are delivered by orderlies.

He will not, unless qualified to do so, attempt to rectify any fault in the instrument, but report to the N.C.O. in charge.

A supply of telephone forms will always be kept with each instrument.

16. *Visitors' Books in Forts and Works.*

These books are kept in works as ordered by the General Officer Commanding, and persons holding special, district or visitors' passes, are required to sign their names therein on entering. The custodian of the book should note in it the following particulars:—

Date of the visit.

Description and date for which the pass is available.

Name of the officer issuing the pass and date of issue.

Passes for admission to the National Defences are as follows:—

1. Special pass (white) issued by the Adjutant-General.

2. District pass { A.F. A 17—1 (white).
 „ A 17—1A (white and red).

3. Visitors' pass „ A 17—2 (yellow).

4. Works pass „ A 17—3 (red).

5. Trading pass „ A 17—4 (blue).

Sentries will refer the holders of all passes to the N.C.O. of the guard, who will carefully examine the passes, and retain all visitors' passes.

Full instructions regulating admission to defences will be found in King's Regulations.

The books are examined periodically by the General or other Officer Commanding.

Official Secrets Act

A poster containing a copy of the Official Secret Acts will be displayed in a conspicuous place in each work.

17. *Artillery and Group Stores.*

The stores forming the equipment of each gun are to be stored separately on the benches provided for the purpose. A space should be allotted to each gun, and the stores for the same so arranged that they may be clearly seen and easily checked.

The district gunners will be held responsible for all stores belonging to their guns, and should keep the stores of each gun clean and in good order, and report to the Master Gunner or N.C.O. in charge of the work all deficiencies, breakages, and losses immediately they occur.

The lockers and drawers should be clean and free from oil, dirty rags and oily waste.

The letter and number of the gun should be clearly painted over each set of gun fittings when laid out on the benches.

Forms showing oil holes in mountings, tide tables, racer correction tables, &c., should be varnished on boards and kept in this store.

18. *Artillery General Store.*

Where possible the spare stores and fittings allowed to a work or number of guns should be kept in this store, each nature being

stored separately. Spare stores per section of defence should be kept distinct.

An inventory should be hung up in rear of each set of fittings, &c., showing the nature, number, &c., as also a detail of the fittings comprising each set. All spare stores should be labelled.

All spare parts should be tried for interchangeability so soon as possible after receipt.

Flags, spare parts of D.R.F.'s, P.F.'s and Leclanché cells are sometimes kept in this store.

A keyboard, labelled with the name of each store in the work, will be provided by the R.E. and fixed up in one of the artillery stores, or master-gunner's office. At the close of the day's work all keys will be hung upon it on their respective hooks. The N.C.O., or master-gunner in charge, will keep the key of this store, and will be responsible that all keys have been returned and hung up. He will issue the keys to the district gunners at the appointed hour on the following day. All keys should be labelled.

A copy of the "Official Secrets Act" should be kept hung up in this store.

19. *Paint Store.*

Paint, oil, dubbing, lime, &c., will usually be kept in the paint store in drums, cylinders, casks, &c.

No oilrags or waste should be allowed to accumulate in this store.

Drums of paint and cylinders of oil should not be opened until actually required for use.

20. *Lamp Store.*

The lamps and lanterns should be kept clean and ready trimmed on shelves in the lamp-room or artillery store, with a supply of candles, oil, and wick, as also lamp knife and scissors near at hand.

All lamp recesses to take wall lamps will be distinguished by numbers in order that lamps notified to the lamp man as requiring attention may be readily identified by him.

Magazine candles should be of different lengths, to prevent the possibility of the whole of the lamps going out at the same time.

In filling the reservoirs of lamps, care should be taken to leave sufficient space for expansion of oil when heated. The wick should not be allowed to coil down at the bottom, but cut into short lengths only sufficiently long to touch the bottom of the reservoir. It sometimes happens that when oil has been a long time left in copper lamps chemical action sets up, and the lamps when lighted will not burn. When this happens, the lamps should be kept empty, only being filled when required for use. Care should be taken to see that all lamps are sufficiently ventilated, or they will not burn. Wicks should be thoroughly dried before being placed in the lamps.

The burning of all lamps should occasionally be tested by day in the lamp-room, otherwise lamps should be lighted only when actually required for use.

When night manning takes place, lamps should be lighted half-an-hour before dark.

All drums containing lamp-oil should be kept closed, otherwise the lamps will burn dimly through ærial oxidation (caused by the action of air on the oil).

A reserve of magazine candles should be in hand.

21. *Boats.*

At some stations boats are issued to sub-districts, and are held on charge from the Transport department. Care should be taken that after use they are drawn up to a place of safety, and free from danger of sudden storms and rough weather. They should be securely lashed to prevent damage or loss.

22. *Drill and Manning.*

When drill or manning is to take place the master gunner should notify beforehand, by memo. or telephone, to the officer concerned, what guns, instruments, &c., are out of action, to enable him to arrange his details.

On the arrival of the group details the district gunners concerned should hand over the gun stores, &c., to the N.C.O. of each detachment.

Tubes for manning of works are allowed at the rate of 25 per gun per annum, and when fired will be returned with the drill stores.

Canvas shoes are provided for use of gun detachments at drill or manning. These are obtained on indent A.F. H 1100 on C.O.O. R.A.C.D., *vide* Clothing Regs., Part I, Table XV (j).

Lanyards should be in good order and the hooks greased where they are attached to the cord, to prevent breakages of cord from rust.

Where possible it would be preferable for the district gunners to remove covers of guns and mountings and put them in a place of safety and replace them after drill.

All doors should be unlocked, and at night, lamps, which should all be placed in position by day, lighted half-an-hour before dark, and plug boxes, dial recesses, telephones, P.F.'s and D.R.F.'s all ready.

The international code of flags and flagstaff should be ready, and a supply of telephone forms available in every telephone cell.

The range and training dials should be run beforehand to ascertain that they are in working order, and telephone circuits tested.

When drill is over the N.C.O.'s of detachments should hand over their stores to the district gunners concerned, the latter will be held responsible that they receive all stores before the details march away. They should at once report all deficiencies and breakages to the master gunner and officer in charge of the party.

Range and other tables required for use should be issued with the group stores.

Magazines, shell, and cartridge stores, lifts, &c., should all be ready for posting the ammunition detail.

The position of a master-gunner in action is at the artillery store of the portion of the armament under his charge.

23. *Fort Workshops.*

Fort workshops, with the tools belonging to them, are in charge of the fort accountant, and are available for carrying out any repairs and adjustments, under the orders of the I.O.M. It is under consideration, however, to transfer the workshops and tools to A.O.D. charge entirely.

24. *Reservoirs Compressed Air.*

Reservoirs will be tested biennially, they will be re-annealed every sixth year.

The biennial test will be carried out locally. The re-annealing will be carried out at Woolwich.

Before returning reservoirs to store they must first be emptied, and the word "EMPTY" stencilled on them.

Filled reservoirs will be stencilled "FILLED."

Reservoirs must on no account be subjected to rough usage. In hot climates they should be protected from the direct rays of the sun by some covering, such as a wadmilt.

CHAPTER IV.

R.G.A. SUB-DISTRICTS.

NOTES ON THE CARE AND PRESERVATION OF
ARTILLERY MATÉRIEL.

(a) ORDNANCE.

1. Ordnance will be kept in good preservation, the exterior being painted, except the bright parts of guns, &c., which will be oiled, or when not in frequent use covered with mineral jelly. The bores will be cleaned and oiled, or, when not in frequent use, lacquered.

Lacquering of bores may be carried out immediately after the conclusion of practice, if the guns are not likely to be again required for practice for a considerable period. The lacquer can be removed by brushing the bore with hot caustic soda solution.

At the close of each day's firing with powder charges, the bore will be washed and the gun placed under metal. As soon as dry the bore will be oiled with a greasy cloth or piece of old linen tied over the piasaba brush. After firing with cordite charges, the bore will be thoroughly washed out, and when dry, will be coated with red mineral jelly.

After an aiming rifle or sub-calibre gun has been used in a gun, the bore of the latter will, as soon as possible after the aiming-rifle practice and before service ammunition is fired from the gun, be thoroughly cleaned, so as to remove any residue which may have formed therein. Such residue will usually be found in a broad ring round the bore of the gun in front of the position of the muzzle of the aiming rifle when the latter is in place, and if left for any considerable time it may become very hard and difficult to remove.

Should any accident occur, such as the bursting of a shell in the bore, the splitting of a vent-axial, &c., immediate inquiry will be made into the circumstances, and the gun examined; if any injuries to personnel have been involved, the course directed in para. 699, King's Regulations, should be followed. If the commanding officer consider the damage to be of importance, he will send without delay a report of the circumstances through the same channel as his annual return, forwarding, if necessary for the illustration of his report, gutta-percha impressions of the damage done to the guns. An impression taken of a flaw, or damage to a gun, must not be destroyed until the gun is finally sentenced.

When the rifling of a B.L. gun or howitzer has become so much worn that augmenting strips are necessary with projectiles having broad Vavasseur driving bands, the gun or howitzer will be marked as follows:—

- (a) When one augmenting strip only is required, a white ring 3 inches in external diameter and $\frac{1}{4}$ -inch wide will be painted on the upper left of the breech (left of up).
- (b) When two augmenting strips are required a second concentric white ring will be painted inside the first.

As a general rule B.L. and Q.F. guns under 6-inch calibre (except field guns) when mounted in exposed positions, and not in frequent use, will have all fittings removed. Guns of 6-inch calibre and above, will, under similar circumstances, have the axial vents and obturators, including smaller fittings removed. B.L. guns having steep coned obturators will not be so treated, the smaller fittings only being removed.

The fittings will be kept in store, and the steel portion coated with mineral jelly. The fittings remaining with the guns will be treated in a similar manner.

In the case of B.L. and Q.F. guns used for drill and practice purposes, special care must be taken to keep fittings perfectly free from dust and grit, and all working parts well lubricated.

Guns should be elevated and depressed to see that the elevating gear works freely, and left depressed or "under metal," and where possible breech turned seawards.

Unserviceable guns are marked with a * cut on the breech and muzzle faces. Condemned stores are marked with the condemned

mark \downarrow
 \uparrow

2. Obturating Pads and Discs.

The pads should be examined to see that the canvas is in good order, and tallow should be applied to them occasionally. The protecting discs should be free from rust, burrs, cracks, or liability to cut the canvas of the pads. Should a pad get too soft from rapid firing, remove it and place it in cold water, care being taken that pads and discs are replaced in proper order.

Obturating pads when not in the guns will invariably be kept under compression, properly assembled with their discs, in the special boxes provided for the purposes.

Spare pads should be expanded by firing with a full charge at the first practice after receipt, and before being fitted to the gun, if very hard, should be soaked in a mixture of hot olive oil and tallow, or warmed through until soft. They should then be marked "expanded," with "date," and kept in their boxes under compression.

In the case of guns with steep cones, adjusting discs should be added until the breech closes tightly, and with some difficulty. The breech mechanism should then be opened and closed until the pad

of the obturator becomes compressed. Before use, the pad and the disc should be well covered with tallow. Opportunity should be taken when convenient, to cool both the obturator and vent bolt. This can be most conveniently done by either pouring water over it when in position in the gun, or by sousing it thoroughly with the sponge during or after firing. After a long, rapid firing series, the vent head becomes exceedingly hot, and the pad very soft. It is undesirable to take the pad apart under these conditions, and the best procedure is to thoroughly souse it with water before taking apart. There is no objection, if time permits, to taking the obturator off the vent stalk and putting the whole in a bucket of water, but after so doing, it is desirable that all parts should be well greased with tallow. When the temperature of a pad in a steep-coned obturator is probably less than 50 degrees Fahr., and half-charges are about to be used, the pad should be thoroughly softened by immersion in hot water before practice is commenced.

Pads should be weighed and gauged quarterly. Obturators found not to be within the limits will be exchanged.

3. *Lines and Marks on Guns.*

Horizontal and vertical lines, as also the monogram, and other markings on guns, should not be filled up with paint, but kept clean in order to be clearly seen.

4. *Clinometer Planes.*

The planes should be kept clean with oil and free from paint; files, emery cloth, bath brick, or other abrasive substance should not be used to clean them.

5. *Covers for Guns.*

Breech and muzzle covers should always be kept on the gun and mounting, and in a proper state of repair, either by returning them to the A.O.D. for repair or demanding new ones to replace them. Tampons, if used, should be in the guns.

6. *Sub-Calibre Guns and Aiming Rifles.*

Sub-calibre guns, aiming rifles and their fittings, will be examined by the I.O.M. (bores annually, or more often if necessary).

The exterior of the piece should be examined to see that it is free from rust and burrs and that all working surfaces are in good condition.

The expanding and adjusting frames should be examined to see that they are sound and work freely.

Dirt and grit should not be permitted to accumulate in the interior of the breech mechanism. Care should be taken that the insulation of the terminals and electric needles are perfect and that the point of the percussion needle is free from burrs. All springs and other fittings

should be sound and in good condition, and all parts kept perfectly clean, oiled, and free from rust. Emery cloth should not be used for cleaning.

7. *Machine Guns.*

The barrels, in situations where they are exposed to a moist atmosphere, should be examined and wiped inside with an oiled rag daily. In other cases this will be done as necessary.

When cleaning the guns, turpentine or oil is to be used—Rangoon, mixed with paraffin for preference. Emery cloth or any abrasive substance should not be employed. For lubricating purposes oil, petroleum, Russian lubricating, should be used.

Machine guns should be thoroughly examined once a month or if boxed then quarterly, and left in a properly lubricated and serviceable condition. This examination should only be carried out by a competent armourer or armament artificer who has been through a course at Enfield.

After practice, the barrel should be cleaned with mineral jelly to prevent erosion, the barrel casing emptied by drawing off the water from the hole underneath, the lock removed and cleaned, and all parts inside the breech casing lightly oiled. Push the barrel to and fro several times to see that it works freely, and all parts should be examined and the lock oiled and replaced.

When guns are returned to store packed for transmission, they will be treated with the mixture laid down in the hand-books of machine guns.

A memorandum of examination will be kept with each gun and an entry of all ball ammunition fired will be made therein.

8. *Spare Parts.*

For identification purposes all spare parts should be properly labelled.

Spare parts of guns and mountings are supplied solely for the purpose of replacing similar defective or damaged parts, and will not be used for any purpose other than that for which they are maintained, unless specially authorized.

All spare parts are on receipt to be at once tried for interchangeability. Defects are to be brought to the notice of the Chief Inspector, Woolwich.

The C.R.A. is responsible that the spare parts authorized by the equipment tables are complete. If insufficient accommodation exist at the works for their storage, arrangements should be made for their custody by the Army Ordnance Department.

(b) MOUNTINGS.

1. *Elevating Gear.*

The gear should be cleaned and oiled, and friction cones, brake drums, discs of friction clutches, pinions, and bearings kept clean, smooth, free from grit, and very slightly oiled, to prevent seizing.

2. *Eccentric Shafts, Rollers, and Axles.*

These should be removed periodically and properly cleaned and lubricated before being replaced.

3. *Cap-squares.*

These together with their keys or fixing-screws should be periodically removed, cleaned, lubricated, and replaced.

4. *Traversing Gear.*

All parts of the gear will be kept perfectly clean to prevent rusting. The teeth of cogs and pinions should be scraped and cleaned free from clotted grease, and fresh lubricant applied. The grease supplied for this purpose usually becomes very hard after application; a better and cleaner substitute will be found in mineral jelly or blacklead and tallow.

5. *Covers of Mountings.*

These should be kept in a perfect state of repair and painted to harmonize with the surroundings.

6. *Lubrication.*

All lubricating screws will be removed, the holes cleaned out with a wire, filled with oil, the screws replaced and always kept bright. A thorough cleaning and lubricating of all standing and working parts will take place once a month, all clotted grease will be removed and the parts wiped with oiled rag.

Whenever and wherever fresh lubricant is applied the old should first be wiped off and the parts well worked to distribute it.

A list showing positions of oil holes should be hung up in the group store. These lists can be obtained from the Secretary, War Office.

7. *Hydraulic Gear.*

It is most important that grit and dust be prevented from accumulating in hydraulic cylinders. After drill or practice a well-oiled twist of tow should be bound tightly round the rim, close to the breech of the cylinder, and left there until next working. Leathers and packings must be preserved in good order. Pressure in the air cylinders should be taken at least once a week to see if loss occurs.

The accumulator of a B.L. 9·2-in. mounting should be pumped up at least 1 inch from bottom stop and the valve to gun pressure slightly opened—this keeps a pressure on all leathers and glands.

The tank strainers in 9·2-in. B.L. Mark V mountings are to be cleaned every three months; and, should failures of the hoists occur, the whole system is to be emptied and washed out.

8. *Quadrant Elevation Gear.*

Index plates and readers, elevation indicator plates, &c., are to be kept clean and in adjustment.

9. *Auto-Sights.*

When not in actual use, the sight bar, with the telescope and other fittings attached, should be removed and placed in a dry store. Its removal can be effected by removing a nut and washer, which will be found under the pivot.

The efficiency of the sights depends upon the accuracy of the cam. Special care must be taken that it receives no damage. It must on no account be polished, but kept clean, and free from dust and grit, by wiping with a clean rag moistened with a few drops of oil.

All parts are to be kept clean, working parts well lubricated with clean oil and (with the exception of the cam groove and roller) lightly sined with anti-corrosive grease when not in use. Bath brick, emery, or other abrasive substance must not on any account be used for cleaning.

The sight gear should not unnecessarily be taken apart, and no adjustments made by scraping or filing except on special authority.

In throwing the latch for automatic working into gear, care should be taken that it is opposite the jaws in the cam roller lever, in order to avoid injury to the parts.

Auto-sights should be tested weekly for accuracy, but no unauthorized person should be permitted to attempt to adjust the auto-sight of ordnance forming part of the approved armament.

Arcs showing limits of auto-sight range should be marked on the B.C. chart.

All sight-bars should, when in store, be kept in the wooden holders provided for them, and not laid on tables or benches.

10. *Electric Firing Gear.*

The four Electric Leclanché A Mark III cells of the firing battery should be in good order and frequently tested. The connections and binding screws should be clean and dry, and care taken that the latter do not work loose. The firing circuit should be tested for continuity of current. If there should be a fault, test each expendible lead separately until the fault is located.

The cells of the firing battery, when the voltage is reading below normal, should be refilled or new cells demanded to replace them from the A.O.D.; spare cells are allowed to each work; they are issued dry, and require the addition of water before use.

11. *Instruments testing Primary Batteries.*

To test one cell with the *Instrument testing primary batteries.*

Set the pointer on the back of the Instrument to "1." Connect the instrument to the cell by two short leads. The positive terminal of the cell should be connected to the terminal painted red on the instrument; press the button on the side of the instrument, and any cell not giving a reading of 1 volt is to be considered defective and at once replaced by a new cell and the defective cells returned to stores.

When testing more than one cell, move the switch to the back of the instrument to the number under test, and with the button *not pressed*, the reading should not be less than 1 volt. If a deflection of the needle be less than 1 volt, test each cell separately as above, and remove defective cells.

12. *Volt-ammeter.*

Leclanché cells when tested with the "Volt-ammeter" should give a reading of not less than 1 volt per cell when the "Volt" button is pressed and not less than 6 amperes when the "Amps" button is pressed. The "Amps" button should be pressed about 3 seconds before observing the reading.

13. *Pistol Grips, Mark III.*

The pistol grip should, when not in use, be kept in the wooden box, and not taken to pieces or interfered with in any way except by those qualified, and then only when authorized to make any special examination or necessary adjustment.

The contacts must not be lubricated, and care should be taken not to drop pistol grips or subject them to rough usage of any kind.

Before use the lever indicator and trigger should be tested to see whether all parts are free and in proper working order. It should not be overlooked that a short circuit will work the indicator.

14. *General Remarks.*

All shafts and spindles having nuts, washers, and keep-pins will be marked with a letter or punch mark to correspond with each other, to prevent the pins, nuts, &c., being placed on the wrong shafts or spindles. The mountings should be kept clean and examined daily. All axles, shafts, rollers, roller paths, bearings, and gearing will be thoroughly cleaned, lubricated, and free from burrs. When removing any part a hammer should never be used to transmit a blow unless through a piece of wood.

All bolts and nuts, &c., should be examined to see that they are secure.

Ball bearings should be lubricated with mineral jolly or tallow.

Marks are painted on mountings to indicate the run up and loading positions.

All spare hydraulic packings and leather washers will be carefully preserved, the former in tallow and the latter in dubbing.

Under arrangements to be made between the C.O.O. and C.R.A. the I.O.M. will instruct master gunners and others in all matters relating to the care and preservation of the machinery and stores connected therewith in their charge.

(c) EMBLEMMENTS.

1. *Racers.*

Racers should be kept free from dust by an occasional rub over with an oil rag, and greased at the side to facilitate traversing.

2. *Traversing Racks.*

These should be kept clean, well greased, and free from grit.

3. *Traversing Arcs.*

They should be kept clean, and all markings distinct. If markings have become indistinct by wear the graduations should be refilled by the armament artificers. When the pointer of the mounting is at zero the axis of the gun should point true north.

4. *Danger Patches.*

When guns bear upon another work within range, the gun floor, where the pointer travels while the gun bears on the opposite work, will be marked with red paint, and the name of the work indicated on or near the patch. The painting and lettering should be renewed when necessary. This may be done at any time by the artificers working under the orders of the I.O.M.

The arc over which the blast of the gun interferes with the neighbouring guns should be indicated.

5. *Arm Racks.*

Arm racks for the reception of rifles, &c., will be provided for the gun detachments. They should be numbered in order that each man may have a place for his rifle, and designed so that the muzzles point downwards, to keep out the wet.

6. *Lettering Emplacements.*

Emplacements will be numbered from right to left without regard to the nature or calibre of the guns. The numbers will be in Roman figures, and lettering in Roman letters; black on a light ground, and white on a dark ground.

In casemates the number will be above the gun on the "soffit" of the arch or overhead girder, and on the side of the right hand "merlon" in open batteries.

(d) GENERAL.

1. *Tackles and Cordage.*

All tackles should be kept hung up after having been neatly rounded in and secured with spunyarn. The blocks should be lubricated occasionally to prevent them "complaining."

Selvagees should be hung up with the tackles, or in any other convenient place.

All rope and cordage should be neatly coiled up, measured and labelled, always kept as dry as possible, and clear of the ground or concrete floors. It should never be coiled in a wet condition, but first dried. Rope when wet shrinks and becomes weaker.

Ropes and rope slings of a heavy nature which may be found unfit for the work for which they are required, should not be condemned on that account alone, but should be utilised, if possible, for work of a lighter nature where there is no risk of danger, and where the larger size would not be likely to be detrimental to the work in hand.

No rope or sling should be used to lift any greater weight than its tabulated safety strain.

A board showing when last tested should be kept hung up over all cordage and tackles.

2. *Wood Buckets.*

Wood buckets should be kept filled with water; otherwise they are liable to leak and fall to pieces when used.

3. *Spanners and Tommies.*

A board affixed to the wall of each artillery store should be kept. It should have a separate place allotted to each spanner or tommy, the No. of the spanner or tommy being painted so as to indicate its position.

4. *Hydraulic Jacks.*

The jacks, when not in use, will be, with pads upon them, under pressure in the "Frame, store hydraulic jacks." Rear roller jacks must be lashed to the frame to prevent them falling in the event of pressure going off.

The jacks should be lowered and raised every morning; if this is not done, and they stand long unused, the rams are liable to rust and set fast in the cylinder. One pad should occasionally be removed to vary the height of the jack.

When pumped up they should not run down of their own accord; if they do, the matter should be reported to the I.O.M. Jacks should be emptied and washed out by the artificer once a year, or more often if necessary, and filled with the authorized liquid. They should not be thrown about or subjected to rough usage, nor should heavy loads be lifted with the claw. Waste liquid should be written off charge by expense voucher, quoting as authority para. 572 Regs. for Magazines and Care of War matériel.

The spare packings should be preserved with dubbing.

5. Leclanché Cells.

All cells will be kept clean and free from "creeping." In open cells the agglomerate blocks, carbon rods, and terminals should be in good order, and the top of the jar and junction of lead and carbon at top of carbon rod should be protected by "varnish, black tar," to prevent the sal ammoniac creeping and forming a bluish substance, which eats away and destroys the parts.

The Leclanché cell contains zinc plate, carbon rod with terminal, 12 agglomerate blocks round the fluted sides of the carbon rod, kept in position by canvas wrapper and I.R. bands. Carbon is a good conductor, but in the passage of the current from zinc to carbon, hydrogen bubbles form on the carbon and so set up a counteracting force. This weakens the E.M.F. required, and is called "polarization." Oxygen, in combination with hydrogen, neutralizes the latter; consequently, agglomerate blocks, which contain a large quantity of oxygen, are employed. This allows the current to flow through the cell without much hindrance.

"Local action" may be set up through impurities in the zinc, which, as supplied by the trade, is seldom pure, and so long as the parts are kept in the liquid a current will pass between the foreign matter in the zinc and the zinc itself, and lower the working powers of the cell when in action. This will destroy the vitality of the zinc, which will eventually be eaten into holes.

The zinc plate may, at any time, be *amalgamated* by the artificer, to make it purer and less liable to "local action" by cleaning it and washing it with diluted sulphuric acid and then placing it in mercury.

The cells should be numbered, and tested quarterly in the presence of an officer, with the "instrument testing primary batteries," or Voltammeter, and a record kept in a book in the work. Weak or defective cells should be taken to pieces and thoroughly cleaned by washing the parts in hot water to remove all crystals and dirt. Fresh parts, as may be necessary, should be substituted, and a hot solution of sal ammoniac prepared, but the zinc plate and blocks should not be immersed until the solution is quite cold.

Unserviceable parts of open cells will be returned to the A.O.D. and new parts demanded. Complete cells will not be demanded when parts only are defective.

Repairs to "A" Leclanché cells will be carried out by the A.O.D.

6. P.F. Cells and Instruments.

The P.F. cells should be kept clean and free from damp, and ventilated on all possible occasions. Lamps or small stoves may be obtained for very damp cells

The Leclanché cells should be clean and nearly filled with liquid sal ammoniac. The binding screws should be bright and free from oil, and the black tar varnish round the tops of the cells in good condition. A xylonite strip should be attached to each cell, showing its number in series.

Nothing but oil must be used to clean the metal parts of P.F.'s. Dirt must be removed with paraffin oil, and no "Monkey Brand" or abrasive substance used.

The bed plate should be cleaned with soap and water or a weak solution of "Monkey Brand" soap water. No oil or grease should be allowed on the bed.

Painted parts should be renewed with lacquer, but re-lacquering and re-bronzing will be done by the range-finding artificer under the orders of the I.G., on indent from the officer in charge.

In order that impossible trainings may not be sent down by the observer, the limits of arc of fire of the gun or group should be marked by a blue or red line on the xylonite board of the P.F.

When any part of the instrument is out of order, it should be reported to the I.G. If any part is beyond local repair, it will be returned to Woolwich through the C.O.O. The stores will be brought on charge by "Transfer Voucher" issued to the C.O.O. and re-demanded. When received they will be brought on charge in the account and then written off on A.F. G 1049 to the P.F. A report of the condition of the stores and the reason for despatch, with authority, will also be sent, and a label showing the register number of instrument attached to the defective parts.

A form should be kept in each P.F. cell, showing the E.M.F. of each Leclanché cell at its periodical test, and the work done by the agglomerate blocks in the cells.

A book should be kept in each P.F. cell, showing the date when the instrument was last used, its condition when work began and ceased, and signed by the individual who used it, in order that damages, &c., may be traced to the proper person.

Cases packing P.F.'s will, when empty, be labelled "Empty," and returned to the C.O.O.

The P.F. instrument, range and training dials, and all their circuits should be tested weekly.

No unauthorized person is allowed to enter P.F. cells without a special pass.

7. Depression Range Finders.

When instruments at home stations are found defective and beyond local repair, they will be returned to the A.O.D. for transmission to D.D.O.S., Woolwich. At home stations a demand should be submitted for an instrument to replace. Abroad it should be demanded in advance and on receipt of the new instrument the defective instrument should be forwarded to D.D.O.S.

Instructions for the adjustment, &c., of these instruments will be found in the handbook for Depression range finder; for its care and preservation, in Regulations for Magazines and Care of War Matériel.

D.R.F.'s when not in use, except those left set up on their pedestals, will be kept in a dry store. They should not be used or handled by untrained or unauthorized persons.

If at any time they become defective, an indent should be made on the I.G. to examine them; on no account should any attempt be made to repair them except under his orders. If they cannot be repaired locally they will be sent to Woolwich through the C.O.O. of the district (*vide* instructions in handbook), labelled "Glass, with care."

The D.R.F. pedestals should at all times be clean and all markings thereon distinct, if indistinct the R.E. should be requisitioned to renew them.

The wood cover on the base plate, when the pedestal is not in use, should be kept locked. The hood canvas covers are supplied by A.O.D., and when in use should be securely lashed.

The Leclanché cells and all connections should be clean and leads in good order. The lamps, electric, telescope, should occasionally be tested, say about once a week, to ascertain that they have not been broken or fused.

The datum posts should never be in such a position near the shore that at low water they are high and dry, but always where the water flows freely round them. They should be at all times plainly visible. They are fixed and maintained by the R.E.

A book showing who last used the D.R.F. should be kept, as for the P.F.

8. Telescopes, Care and Use of.

Telescopes should on no account be subjected to rough usage, and great care should be exercised to prevent the tubes from becoming dented. The draw tubes should be drawn out gradually with a slightly twisting motion, and when out the instrument should always be held or carried by the middle.

It is extremely important that no oil or grease be permitted to touch any of the lenses.

Lenses should be cleaned with a clean chamois leather or silk cloth.

It is most important that after use in damp weather the draw tubes should be carefully wiped with an oil rag and then with a

clean dry rag, care being taken that no oil is allowed to remain on the instrument before putting it away.

When putting it away always close the eye-piece and put on the cap. The object glass should be perfectly dry before the latter is put on.

Telescopes should be kept in a warm, dry store or box.

9. *To Clean a Telescope.*

The lenses must never be cleaned with the fingers or handkerchief, but with a clean chamois leather or piece of silk; failing this, some old newspaper or blotting paper may be used, but it must be free from grit, and the cleaning gently effected.

Unless absolutely necessary the object glass and eye-piece should never be removed.

Should it be necessary to dismount any of the lenses, only one at a time should be removed, and, when clean, replaced before unscrewing the next. The two lenses of the object glass must be replaced with the flat surface inwards.

After unscrewing any portion of a telescope the greatest care must be exercised in replacing the parts to prevent injury to the screwthread.

In cleaning a telescope the black lacquer of the interior must not be rubbed off.

10. *Straps and Leatherwork.*

So long as leather remains dry it needs but little attention, beyond occasional greasing; but when wetted it becomes hard and stiff, if not softened with some oily matter.

When washed, lukewarm water and soap should be used, hot water and soda should be avoided, as it will destroy the vitality of the leather. After the articles have been cleaned, and while they are damp, the dubbing should be rubbed in. When the dubbing has had time to penetrate the leather, which will be in two or three days, the residue of tallow on the surface should be rubbed off.

11. *Spectators' Flags.*

In some works positions have been selected for spectators to view the firing from guns in order to prevent their crowding round emplacements, and mounting on parapets. Such positions are marked by flags, at practice, termed "Spectators' flags." Colour, red and white, on poles, camp colour.

12. *Posters and Notice Boards.*

All posters and instructions should be pasted and varnished on boards, which at some stations are obtained from the A.O.D. and at others from Barrack Department. They should be hung throughout the work in the particular places to which they apply.

If paper varnish cannot be procured for this purpose, the boards should be sent to the I.O.M., and an indent submitted on A.F. G 1045 to the C.O.O. to request him to have it done. "Copal varnish" for charts may be obtained on demand from A.O.D. in sufficient quantities to do this work.

13. *Grass and Trees.*

In order to lessen visibility, the exterior slopes of a work are not to be trimmed.

The grass on the interior slopes and inside the work generally will be cut either by the district gunners or on requisition by the R.E. Trees inside the work, or whether any outside obstruct the field of view from guns or range-finding instruments, should not be cut without the authority of the R.E.

14. *Lettering in Works of Defence.*

The name of each fort or battery will be painted in large block letters near the main entrance.

In each portion of a fort or battery requiring to be distinguished, a title will be painted in large block letters in a conspicuous place.

All stores, magazines, &c., will have their distinctive titles painted on the door lintels in block letters, in accordance with "R.E. and Magazine Regulations." If it be desired to refrain from exposing the names to public view, the descriptive lettering will be painted inside of the door. In that case a distinguishing patch 1 foot square will be painted outside as follows:—

Magazine buildings	...	...	...	Red.
Cartridge stores	...	...	...	Blue.
Shell stores	...	...	...	Yellow.

All quarters and shelters will have the details of accommodation for peace and war painted in 2-inch block letters over the entrance.

For lettering of guns, emplacements, lifts, and lamp recesses, see under the respective headings, and Appendix V, "R.E. Regulations."

The foregoing painting should be done by the R.E. at the periodical painting. External painting at home is usually done once in four years; abroad, once in three years. The G.O.C. may, however, authorize painting at any time if he consider the work necessary.

The regimental artificers working under the I.O.M. often do this work at more frequent intervals, as also the lettering on manning boards and group symbols.

15. *Maps, Charts, &c.*

The following maps should be maintained by the officer in charge of each sub-district:—

At Home.

One 6-inch Ordnance Survey map, embracing a tract of country 8 miles in radius from the armed fortifications in his charge.

One 1-inch Ordnance Survey map of the sub-district.

One set of charts of the water area and 6-inch Ordnance Survey maps of the land area covered by his guns (and one set additional for F.C.).

Official maps and Admiralty charts are demanded through the Coast Defence Commander on A.F.'s. L 1387 and 1376.

Abroad.

One set of charts of the coast-line of the district.

One set of charts of the water area covered by his guns (and one set additional for F.C.).

These maps should be kept in the chart box under lock and key.

Demands for these maps should be put forward on A.F. L 1387 through the G.O.C. If required on payment demands should be on A.F. L 1389.

B.C.'s. and F.C.'s. Charts.

Charts will be prepared in sub-districts, the necessary squared paper, coloured waterproof inks, and copal varnish, being demanded from the Stationery Office, except the varnish, which should be demanded from the A.O.D. *Vide* E.R., Part 2, Sec. XIIA, 1910.

The charts should be mounted on boards for dropping into beds prepared at the D.R.F. stations, fitted with a pivoted metal arm graduated in yards and rough sights for laying on the target.

16. *Shelters.*

Shelters and quarters are allotted in works for the accommodation of the manning details, and should be equipped with the necessary barrack stores, &c., required on mobilization.

When mobilization stores for war shelters are kept in A.O.D. charge, A.F. G 1087-3 must be kept by the accountant. *Vide* paras. 371 A to D Regs. for A.O. Services, Part I, 1909.

17. *Water Tanks.*

When water is supplied in water carts they will be in the charge of the A.S.C.

Tanks and cisterns should be periodically cleaned out; tanks by the R.E., and cisterns, if possible, by the troops; and the officer in charge of the work is responsible that they are at all times clean and sweet. Whenever there is reason to suppose that the water supplied is injurious to health, a report should be made to the C.R.A. for the information of the medical officer whose duty it is to collect samples.

18. *Rewards for Recovery of Projectiles.*

Notices will be posted up in the vicinity of all ranges cautioning the public of the extreme danger of handling projectiles, and informing them that no rewards or payment of any description for finding shells or collecting projectiles will be made to a civilian. This notice may be hung or fixed outside the work.

19. *Twine, Spunyarn, &c., supply of.*

Twine packing, large, medium and small; twine whipping, cordage, spunyarn, hemp for whipping ends of cordage, and securing hessian to piasaba brushes, &c., will be supplied as necessary up to 1 lb. of each per sub-district per annum on demand.

20. *Skidding Stores.*

The two great preservatives of timber are seasoning and ventilation. Skidding stores should therefore be *well* ventilated. Skidding for this reason should be stocked well clear of the walls of the store.

CHAPTER V.

GUN PRACTICE.

1. *Ammunition for Practice of R.G.A.*

An annual allowance of ammunition is allowed for gun practice, and is classified as:—

- (a) Allowance defined in quantity.
 (b) Allowance defined in value.

(a) Station practice. *Vide* Equipment Regulations, Part 2, Sec. XIIA, 1910, para. 144.

(b) Practice Ammunition. An allowance "*per capita*" is granted. The scales of the rates "*per capita*" are as follows:—

Defences or Stations liable to—

*Class "A" attack	...	...	£3 10 6
" " "B" "	...	...	£3 9 7
" " "C" "	...	...	£2 18 1

All ammunition for practice is at the disposal of C.D.C. for Battle Practice, with the following reservations:—

(a) One-inch aiming rifle and sub-calibre ammunition to the value of not less than £30, or more than £45, for Elementary Practice, and Service ammunition not exceeding £45 in value for Instructional Practice, must be placed at the disposal of company commanders.

(b) The requisite ammunition must be set apart for carrying out the Service company practice series as laid down in Instructions for Practice Seawards.

(c) Ammunition for carrying out the practice as per confidential circular No. 73/3/6521 (A.1) dated February, 1909.

(d) Ammunition for Q.F. Courses at Shoeburyness.

2. *Natures of Practice.*

Station practice is carried out to test the fitness of armaments, equipment &c., for service. It may be found possible to combine it with Battle Practice.

* "A." Attack from the sea designed to capture the Fortress.

"B." Raid from the sea, designed to injure matériel.

"C." Reconnaissance attack.

Training practice is divided into the following:—

(a) Elementary practice—

(b) Instructional practice—

This may be divided into—

(i) Practice as per confidential circular quoted above.

(ii) Company practice.

(c) Service practice—

This may be divided into—

(i) Company practice.

(ii) Battle practice.

3. *Blank Ammunition.*

The use of blank ammunition (black powder charges) is restricted in B.L. ordnance to 6-in. guns and lower natures only.

An annual allowance of 30 rounds per gun of blank is authorized for Q.F. guns, 4-inch and under, as also an allowance of £17 per company, to be expended under the orders of the C.D.C. for combined naval and military manœuvres. Rockets and lights required for night practice may be provided from this grant.

An annual allowance of 20 rounds per piece for guns in the armament for land fronts is authorized under Equipment Regulations, Part 1, para. 219.

4. *Points to be Observed before Practice.*

Ammunition for practice should not be taken from equipments until other ammunition of later date is at the station to replace it.

G.Os.C. are responsible that the "turnover" of all ammunition is carried out strictly in accordance with the existing Regulations.

Endeavours will be made in conjunction with the A.O.D. to ensure so far as possible, in each command, uniformity in the ammunition supplied for practice.

Before gun practice is carried out, application should, if required, be made for the guns to be examined by the I.O.M. who should be requisitioned on A.F. G 1045, through the C.O.O., to examine the mountings both before and after practice, to see that all bolts, nuts, friction cones, elevating, traversing gears, and electric firing gear, leads, auto-sights, &c., are in good order, that the liquid level and pressures in accumulators and cylinders, &c., mountings are correct.

The local inhabitants should be notified verbally or by poster when practice will take place, and warned to open their doors and windows.

The master gunner should arrange with the R.E. to remove bulk-heads, &c., and have all recesses and doors unlocked and open, windows open, and all precautions taken to prevent damage from firing.

All electric tubes and primers to be used at practice should be tested previous to practice.

The threads of breech and breech screws should be free from burrs and kept slightly oiled.

Q.F. cartridge should be examined for cracked cases before loading. *Vide* Regulations for O.O. Services, Part II.

The obturating pads, discs, and cups in the guns should be tested to see that they fit correctly, the coned seatings and pads smeared lightly with tallow, as also tubes which do not easily fit into the vent. The heads of the electric tubes should be dry.

All lifts and hoists should be in working order.

Practice projectiles having base plugs will, before being fired from Q.F. guns 12-pr. and upwards have the key hole fitted with a wood plug. The plug should be secured with shellac.

Filled service shell, except Q.F. 12-pr. and 4.7-in. when fired at practice are not to be emptied. The charge will be wetted at least 20 hours before the shell are required for practice.

Q.F. 12-pr. and 4.7-in. powder filled shell to be fired from fixed armament guns, will be emptied and brought up to weight with salt cake. Cracked palliser shell are not to be fired from any gun.

Empty common shell should be brought up to weight for practice with salt cake.

Powder filled shell used at practice are to be drowned not more than four days and not less than two before use. After being drowned the shell should be placed on their bases with the plugs removed for a few hours to allow any surplus water to drain off.

Paper shot will be supplied filled to weight with sawdust and waste shot by R.G.A., but should not be fired unless there is a clear range, to be decided locally, according to the distance shown in the handbooks.

The master gunner will see that the international code of flags, with diagram of instructions, red flags, flagstaff and halyards are correct and in good order; also that flags for posting on flanks of works, as a warning to persons likely to pass in front of the battery, are at hand. The B.C. will arrange for posting of sentries on the flanks.

All range-finding and telephone apparatus and communications should be tested and put in order, and telephone forms ready at hand for the operators. Electric dials should be run to "stops" and tested.

The I.O.M. and D.O.R.E. should be notified of the hour and date of practice.

Arrangements for the attendance of the medical officer are usually made by the adjutant.

The ammunition for practice should be ready and earmarked, so that there may be no mistake in that used. Projectiles should be weighed and gauged. Fixed ammunition should be carefully gauged.

Tubes and primers to dry the vent for each day's practice from each axial-vented gun are specially allowed under para. 163, Part II, "E.R., 1910."

5. *Special for Night Practices.*

All the gear of the guns, ammunition, &c., should be thoroughly tested during the day preceding the night practice. The electric or other means of illuminating the emplacements, magazines, &c., should be thoroughly overhauled, broken fuzes of the electric lights being replaced, wandering electric lamps should be looked to for damaged glass, filaments, &c.

When cartridge screens have been approved for Q.F. Batteries, they should be fitted up on the day prior to the night practice being carried out.

The ammunition, so far as possible, should be available in the shell and cartridge recesses of the guns.

The "safety stops" should be fitted.

6. *Test Practice.*

As guns are mounted in new works, or when guns are removed from old emplacements and remounted in new, or remodelled emplacements, three rounds, full charges, with projectiles, will be fired from each B.L. 6-in. gun and up, and Q.F. 12-pr. guns and upwards, to test the mountings, gear, and general working of the guns, and a report thereon submitted to War Office. Guns mounted in practice batteries will not fire test rounds. *Vide* Equip. Regs., Pt. 2, Sec. XIIA, 1910.

7. *After Practice.*

The number of rounds fired should be entered in the memorandum of examination of gun and carriage.

The gun should be thoroughly washed out and depressed, when dry the bore should be either oiled with Rangoon oil applied by means of a cloth tied over the head of a piassaba brush if powder charges have been fired, or coated with red mineral jelly if cordite charges have been used.

The gun and mountings should be carefully inspected after practice by the I.O.M. or armament artificer, who will report "in action" or otherwise. Any defects found beyond local repair will be immediately reported to War Office.

The breech fittings of guns will be thoroughly cleaned and oiled and breech covers replaced.

The mechanism of Q.F. guns will be dismounted, washed with warm water to which soda has been added, dried, oiled, and re-assembled.

Machine guns will be cleaned, oiled, and, if desirable, put into their cases.

If the earth in front of parapets has been blown away the R.E. should be asked to re-turf the damaged places. The master gunner will note all damages due to the concussion of firing and will forward

A.F. K 1306 to the R.E. for the repair of broken glass, doors, hatches, &c., certifying thereon that the damage has been caused by the firing of heavy guns and that all reasonable precautions had been taken to prevent the damage. This form will be signed by the accountant.

Should any explosion occur during the firing of a gun, the bursting of a shell in the bore, or splitting of an axial vent, or any extensive damage to matériel, a report will at once be made to the C.R.A. and the guns, &c., examined.

8. *Fired Q.F. Cartridge Cases.*

These should be cleaned after firing, and wiped perfectly dry. They should be greased with mineral jelly before they are returned to store.

Q.F. cases will be brought on charge by number in the accounts by "certificate receipt voucher," and machine gun and aiming rifle cartridges in "lbs.," but "tubes, primers," &c., as "metals mixed from fuzes, &c.," in "lbs.," and returned to the A.O.D. Care will be taken that no live cartridges are included, and a certificate to this effect on A.F. G 904 will be enclosed with empties in the packages in which they are returned.

9. *Miss-fires.*

6-pr., and 8-pr., Q.F. cartridges not fitted with removable primers, 1-pr. Q.F. cartridges and percussion ammunition for the 1-inch aiming rifle, which missfire will (where extracting machines are not available) be dropped into deep water where facilities exist, otherwise they will be destroyed in a similar manner to fuzed shells on ranges, *vide* Regulations for Army Ordnance Services, Part II.

Q.F. 6 and 8-pr. cartridges fitted with removable primers, which missfire will have their primers exchanged.

Electric ammunition for the 1-inch aiming rifle, which miss-fire, will be returned at the earliest opportunity to A.O.D. for transmission to the D.D.O.S., Woolwich Arsenal, through the C.O.O. of the area for special examination.

Drowned missfires will be written off charge on A.F. P 1925.

Tubes and primers which missfire should be returned to A.O.D., and the ordnance officer concerned notified the reason of their return.

10. *Ammunition—Indents and Expense Vouchers.*

Practice ammunition for use of R.G.A. is demanded on A.F. G 988.

Ammunition allowed in money value is written off charge on A.F. P 1926.

Ammunition allowed in kind, including machine gun ammunition (annual allowance) is written off charge on A.F. P 1925.

At the conclusion of the practice season, A.F.'s G 906 and P 1928 are compiled and submitted to War Office, through the C.D. Commander.

Practice ammunition supplied to the Territorial R.G.A. and which is expended from the guns on R.G.A. charge, will be accounted for by the accountant of the work where the ammunition is expended. On conclusion of the season's practice of each unit, vouchers will be passed transferring to the unit the ammunition it has actually expended.

CHAPTER VI.

MAGAZINES AND EXPENSE STORES.*1. Magazines.*

The posters of regulations will be pasted on boards, varnished and displayed in a conspicuous place for the information of all concerned.

The strictest attention will be paid to the ventilation and cleanliness in all parts of the magazine and the passages leading thereto.

The hygrometer, hung in a box, will be fixed outside the entrance doors, and should be protected from sun, rain, and wind. The receptacle for wet bulb will be kept filled with water, and the muslin and wick thoroughly moist. In frosty weather if the wick ceases to act, the bulb must be dipped in water before taking an observation, so that all the wick on the bulb is thawed, a little time being allowed for evaporation from the ice before the reading is taken.

Any percolation of water through the walls or roof should at once be reported to the R.E. It should be remembered that where there is a large mass of earth overhead or surrounding the walls of magazines it is difficult to prevent dampness inside when heavy rain saturates the outside earth; therefore, the greatest care should be exercised in ventilation. Wind cowls should be sufficiently high to catch the wind to allow them to revolve.

During thunderstorms magazines and stores should be closed.

No oil rags or waste will be allowed to remain in the magazine.

Whenever powder or picric acid is to be moved, or cartridges and shells filled or examined, hides or wadmiltits will be laid down; these should be frequently dusted. Wadmiltits must always be dried, if they get damp, as in that condition they are liable to spontaneous combustion.

Whenever a magazine, or other place, used for the storage of explosives, is emptied for any purpose, it will without delay be thoroughly washed out and cleaned, so that all trace of explosives may be removed.

Shells sentenced to be painted by the I.O.O. will receive two coats of the paint laid down in the Regs. for A.O.S., Part II, p. 41. If required to be painted at any other time, special permission must be obtained from the G.O.C.

During the painting of shot or shell, tarpaulins to cover them may be obtained on loan from A.O.D.

To preserve paint on shells, they will be coated with boiled linseed oil when necessary.

Simple laboratory operations only are to be carried out in R.A. laboratories, under the superintendence of an officer or master-gunner.

Laboratory operations will be carried out under magazine conditions. *Vide Magazine Regulations, paras. 48-57.*

Every building in which explosives in Group I are kept will be under magazine conditions, and will be used only for the keeping of such explosives, and of receptacles for them or tools or implements for work connected therewith.

Wood skeleton cases will be emptied on receipt and returned to the A.O.D.

If cartridges are to be returned to the A.O.D., the newest should be selected, in accordance with A.O.D. regulations.

Should an explosion occur in any magazine action will be taken as directed in King's Regulations, para. 669.

2. *Grouping Ammunition in Royal Artillery Charge.*

The contents of every magazine or expense store containing ammunition in Royal Artillery charge will be arranged for local convenience and record under the authority of the Commanding Royal Artillery, as follows:—

- (a) Loose powder, where exceptionally on charge, in groups according to lot numbers.
- (b) Filled cartridges in groups, according to lot number.
- (c) Filled shells in groups, according to nature, mark, and date of filling.
- (d) Tubes in groups, according to nature, manufacture or repair; and fuzes in groups, according to thousand or date of repair or conversion.

In every magazine or store where ammunition is kept in R.A. charge (except in the case of Mounted Batteries) forms of inventory to be attached to boards will be kept, viz. :—Record of cartridges, gunpowder, fuzes, tubes, and shell, A.F. G 854. The oldest cartridges, or those to be used first, should be placed nearest the issue hatch.

Each description and nature of shot and shell will be kept distinct and arranged in groups according to nature, mark, and date of filling; 6-inch and upwards will be stood on their bases; if the floor be of stone or concrete they will be stored on battens and the grummetts left on. When shells are piled they should be so placed (heads and tails) as not to injure the driving bands.

Arrangements are to be made in commands to allot the whole of the cartridges of any individual lot to some one particular gun or work. When fractions of a lot are stored in different works in a command, they should be collected and brought together—every endeavour being made to keep, so far as possible, all lots intact.

Groups boards or cards will be placed on or near each group. Group and other labels on packages must be renewed when necessary.

3. *Fuze and Tube Store.*

Any convenient dry store may be used for storage of tubes, fuzes, primers, &c. The cylinders in the equipment should never be opened unless under the orders of the I.O.O. or C.R.A. Broken boxes should be returned to the A.O.D. to be reclosed, and should then be retained by the R.A. for practice. Complete cylinders will be demanded to complete equipment.

Groups will be formed and boards or cards showing particulars hung up or placed near each group.

Tubes will be grouped according to date of manufacture or repair.

Fuzes will be grouped according to thousand, date of repair, or conversion.

4. *Shell Stores.*

Shell stores are not under magazine conditions, but will be kept scrupulously clean.

For transport (and where stated storage) purposes the under-mentioned projectiles, except B.L. 60-pr., 5-inch Howitzer, and 6-inch guns (siege artillery) which are stored and transported in slings will be packed as follows:—

- (a) Common-pointed and armour-piercing shells, filled or empty for B.L., Q.F., or Q.F.C. guns 5-inch and under,
 - (b) All star shell including 8-inch spherical star shell which will also be stored boxed,
 - (c) B.L., B.L.C., or Q.F. 15-pr. and B.L. 12-pr. all natures,
- All filled and empty shells, except those actually in limbers and wagons which are fitted for projectiles will be transported and stored boxed for:—

(1) Horse, Field, and Heavy Batteries.

(2) Movable Armament:—

B.L. 5-inch gun, 4-inch and 10-pr., B.L., B.L.C., or Q.F. 15-pr. and Q.F. 2.95-inch.

(3) Siege Artillery:—

B.L. 6-inch Howitzer.

This will not apply to ammunition held in store for practice.

All B.L. and Q.F. projectiles with the driving band with gascheck will have one grummet on each side of the gascheck portion of the band to be kept on in store and where possible in the shell rooms.

In such cases the grumnets will not be removed until the projectiles are required for firing, and the periodical gauging of the driving bands may be dispensed with.

When stowed with grumnets on, projectiles should be stowed "heads and tails" alternately.

The grumnets of B.L. and Q.F. projectiles fitted with "driving band with gascheck" will be kept on the projectile when in store and R.A. charge, and under ordinary circumstances will not be removed until the projectiles are required for the service of the gun.

Lyddite shell should be occasionally oiled with boiled linseed oil, as found necessary.

5. *Shell and Cartridge Recesses.*

Shell and cartridge recesses contain ammunition for the immediate service of the gun.

These should be kept clean and free from oil rags and waste.

When hostilities are imminent the officer in charge of the sub-district will be responsible for filling them with filled and fuzed shells, but when the manning detail arrives the B.C. will be responsible that they are replenished.

6. *Shell and Cartridge Depôts.*

In addition to recesses, depôts for shells and cartridges will be selected in or near emplacements, and marked in paint with the number of each to be stored there.

7. *Shell and Cartridge Lifts and Derricks.*

These should be worked weekly with drill shells and cartridges, and in works where "tray lifts, chain and Q.F. band lifts" have been supplied, ammunition should not be lowered by them. All bearings to be kept well lubricated and free from grit. Guide rollers should be free and revolve easily, and guides free from top to bottom. In "quick return lifts" the chain should be sufficiently tight to prevent swinging, and driving chain leading fairly from bottom of counter-weight to winch, and not twisted.

The cog wheels and winches should be cleaned and lubricated periodically. A mixture of blacklead and tallow is to be used for lubricating chains and wire ropes and teeth of gearing wheels.

All bearings will be lubricated with oil.

The ratchet wheel and pawl should receive special attention.

All winches to be tested annually by I.O.M. to $1\frac{1}{2}$ times their working load, and kept in repair by him.

Wire ropes of derricks should be greased with tallow.

8. *Hydraulic Ammunition Lifts.*

The ram must be kept well greased and free from rust. All joints and glands to be kept watertight, the latter, however, must not be screwed up so tightly as to injure the leathers; special attention should be directed to the safety catches and automatic cut-off, and they should be frequently tried to ascertain that they work freely. Soft soap is to be dissolved in the water used (1lb. to every 20 or 30 gallons) to keep the leather soft; enough should be used to make the water feel soapy. During the winter months, glycerine, to the extent of half the volume of the water, should be mixed with it to prevent freezing; the mixture being then pumped through all the

pipes and machinery to replace the water. When emptying, care should be taken to drain back the mixture as far as possible into the tank, to prevent unnecessary waste of glycerine.

Where lifts are in constant use, the lifting chain should periodically be removed, thoroughly annealed and retested—say once a year. A longer interval may be allowed if the lift be occasionally used.

The lifts should be marked both above and below with the group letters of the guns they serve, and the object for which they are intended. They will be maintained by the R.G.A., and repaired by the I.O.M.; the R.E. only being asked to do the work when beyond the resources of the A.O.D.

9. *Boots, Shoes, and Clothing.*

Magazine clothing, boots, and shoes should be kept dry and occasionally aired, and boots and shoes preserved with dubbing. These articles are kept at the barrier at entrance to magazine, with the "diagram of instructions for changing clothing" on A.F. G 949.

Magazine clothing is obtained on indent H 1173; boots and shoes on H 1100; from C.O.O., R.A.C.D., Pimlico.

10. *Lightning Conductors.*

All store magazines for gunpowder or cordite (except those containing small quantities of explosives for mobilization equipment), and all danger buildings in laboratories in charge of the Army Ordnance and Naval Ordnance Departments, and such other buildings as are decided upon in consideration of their surroundings will be fitted with lightning conductors.

Lightning conductors are to be examined at regular periods; those in War Department charge by the Royal Engineers.

Should any repairs be needed to the lightning conductors, an immediate requisition on the R.E. will be made for the performance of the work.

11. *Magazine Conditions.*

No one, except those employed therein, will be permitted to pass the entrance barriers, except in the presence of the officer or other person in local charge, who will be responsible that all who enter comply with the necessary precautions hereinafter detailed.

All persons employed will, before entering, change their outer clothes for the special magazine clothing provided for them, in the following order:—

- (a) Before passing the barrier, boots to be wiped on mat and taken off. Uniform or private clothing to be taken off and hung up.
- (b) Pass over the barrier and put on magazine clothing and shoes.

In the case of equipment magazines, practice magazines when not situated in works of defence, and in isolated store magazines containing not more than 200 lbs. of explosives, it will not be necessary to change into magazine clothing. Magazine shoes only will be used, and tobacco-pipes, matches, combustibles, or exposed iron or steel articles, will be left outside the barrier.

Uniform, private clothing, or boots must never be taken inside, nor magazine clothes or shoes outside, the barrier, but the non-commissioned officers will be permitted to wear their caps inside the barrier. It will not be sufficient for men to put the magazine clothing over their own garments.

Officers and visitors will, at the barrier, step into special overshoes provided for them, and leave there any tobacco-pipes, matches, combustibles, or exposed iron or steel articles, in their possession.

A person under the age of 16 years will not be employed in or enter any such building, except in the presence and under the supervision of some authorized adult person.

Lighting fires or smoking is strictly prohibited in or near any of these buildings; any person employed on the premises infringing this rule, or attempting to enter with tobacco-pipes, matches, or with any combustible, or exposed iron or steel articles in his possession, or having the least appearance of intoxication, will, if a soldier or sailor, be placed in custody, and, if a civilian, immediately dismissed.

No cultivation is to be permitted inside magazine yards, nor are any animals to have access to them.

Officers in charge are responsible that all men, whether military or civilian, employed in the magazine or laboratories are acquainted with the foregoing regulations.

12. Ventilation.

For ventilation purposes magazines will be divided into two classes, viz. :—

Class A.—Magazines, the walls of which are exposed to the outer air on all sides.

Class B.—Magazines, any wall of which is not exposed to the outer air.

Class A magazines should be ventilated whenever the weather is fine, but should the temperature of the outside air be over 40°, there must be a difference of 3° or more between the wet and dry bulbs.

Class B magazines should be opened for ventilation when the reading of the thermometer inside the magazine is higher than the reading of the *wet* bulb thermometer outside.

Great care must be taken that the magazine is securely closed as soon as the above conditions cease to apply, or when that point is approached.

Subject to the conditions above detailed, magazines should be opened as often and for as long a time as possible, and every means

should be adopted to secure a thorough circulation of air. But care should be taken to provide for their being immediately closed, in case a sudden change of temperature renders it necessary to do so.

13. *Nomenclature of Magazines.*

"*Magazine.*"—Building or buildings with passages leading thereto, in which powder and cordite in bulk, and other explosives detailed in Group I, must, and explosives detailed in Group III, may, be stored, and which must be under "*magazine conditions.*"

"*Main Magazine.*"—The principal magazine in a work or battery in which there is more than one magazine.

"*Equipment Magazine.*"—A magazine in regimental charge containing cartridges for all field and position guns or howitzers only.

"*Practice Magazine.*"—A magazine in regimental charge containing cartridges for practice only.

"*Magazine Equipment Room.*"—A chamber within a magazine (if provided), in which the hides, wadmiltits, and spare magazine clothing may be kept.

"*Explosives Store.*"—A building, or buildings, or part of a building, which should not be kept under magazine conditions, and in which any of the explosives in Group II must be stored, or those in Group III may be stored.

"*Cartridge Store.*"—A store containing quick-firing cartridges.

CHAPTER VII.

SUB-DISTRICT OFFICERS' DUTIES IN R.G.A. SUB-DISTRICT.

The officer in charge (Accountant) of an "Armament District" is held responsible for the care, preservation and cleanliness of the armament, ammunition, and stores in his charge.

The officer detailed as "Sub-district officer" should make a thorough inspection each week, but should also visit the works or a part of them more frequently.

The following are some of the principal points to be attended to by an officer in charge, when visiting his sub-district, viz. :—

Batteries and Parapets.

That the battery as a whole is clean and tidy; no glory holes allowed, fences, flagstuffs, surface drains, paths and roadways are in good order, and that the parapet in front of the guns is in good repair.

Gun Emplacements.

The gun floors should be clean—no greasy or oil-stained patches. Danger arcs, training arcs, and lettering generally on gun floors, barbettes, mountings, &c., clear. The mountings on racers to be frequently traversed. Guns when not in use for drill or practice to be traversed (when possible) breech seawards. The bores of guns to be cleaned daily and kept oiled. The various mechanical gears to be kept lubricated and in good working order. Buffers and cylinders to be correctly filled and not leaking at the glands, &c. The heads of all lubricating screws to be kept bright. The mountings level and the verticality of the pivot correct; covers for gun and mountings should be frequently examined.

Locks and strikers should be correctly assembled and adjusted. The obturating pads should be in good condition. The electric firing circuits should be in thorough good order.

Sights should be in correct adjustment. The telescopes of sights should be clean, in correct collimation and in good order.

The range and training dials to be in thorough working order and correct.

B.C. Posts and R.F. Cells.

View over area to be defended should be unobstructed by undergrowth or long blades of grass on the parapet. Instruments in correct adjustment. B.C.'s or F.C.'s charts correct. Ranges, trainings and datums correctly marked up. The battery cells to be tested for correct E.M.F. and their readings recorded. Telephones and alarm communications should be tested.

Artillery Stores.

A few articles should be checked weekly by the distribution book. All articles should be clean and correctly labelled and laid out, the gun stores, spare stores, and section stores separately. Cans and sight bars stored correctly in their holders. The stores themselves and their benches and floors clean, well-aired and dry. No article of cleaning material should be left lying about. Cordage tackles, slings, &c., should be stored dry, properly coiled and labelled. Hydraulic jacks to be kept filled and worked frequently. "A place for everything and everything in its place."

Shell and Cartridge Stores.

The ammunition to be properly stored and grouped. Magazine records, A.F. G 854, to be corrected to date, as also the "Group" labels. The thermometer record to be entered in A.F. G 944 twice daily and signed by the visiting sub-district officer weekly. Cartridges, cylinders, and boxes to be stored clear of the walls to admit free ventilation and to prevent condensation in the walls trickling into the boxes or cylinders. That the labels of the fuzes, cartridges, boxes, &c., are intact and correct. All parts of the magazines, &c., are to be kept scrupulously clean. Ventilation should receive the greatest attention. All magazines to be immediately closed on the approach of a thunderstorm. Magazine clothing should be stored dry in its allotted place.

CHAPTER VIII.

DUTIES OF A MASTER GUNNER.

On appointment to a sub-district he will, under orders of the officer in charge, take over the armament, ammunition and stores in the sub-district, and furnish a report to the officer in question that this has been done, reporting any deficiencies or surplus, or anything he may have observed unusual in the course of stock-taking, or tour of the sub-district.

He is directly responsible to the O.C. sub-district that all regulations and standing orders are carried out, and that the clerical duties of the sub-district are carefully and punctually performed. He is to make himself acquainted with the information contained in the fort record books of the works in his sub-district.

The district gunners are immediately under his orders, and he is responsible that they are properly employed. He will instruct them in the nature and object or working of the ordnance, mountings, ammunition and stores in their charge, as well as the method of using the various implements and tools employed in the Garrison Artillery service.

The various articles forming the equipment of each gun should be separately arranged on the benches or shelves in the artillery stores allotted, so that each gun may be easily and rapidly placed "in action." Spare stores should be grouped together in the artillery general store (where provided), and entirely separate from gun stores. Stores not easily identified should be labelled so that, in the absence of the master, or district, gunner, no difficulty would be found in distinguishing them.

The keys of the magazines and stores will, on conclusion of working hours in the sub-district, be hung up on the keyboard in the artillery general store, guard room, or other building in which the keyboard is located, and the master gunner will be responsible that this order is carried out throughout the sub-district. He will be responsible that the magazines are duly opened and closed for ventilation, and that the "grouping" of the ammunition is in accordance with the instructions contained in the regulations for magazines.

He is to be present, when possible, at the receipt and issue of stores, and is responsible for making all necessary arrangements in connection therewith.

He is responsible that the sub-district accounts and books are correctly kept, and posted to date, and that the "amendments" to the various regulations are made therein as issued.

He will always accompany the officer in charge when visiting the sub-district.

Master gunners will take every opportunity of instructing the men employed under them as district gunners in their duties and in a knowledge of the war matériel in their charge, and commanding officers will take steps to ensure that the special knowledge in these subjects possessed by master gunners is taken full advantage of.

The fact that these warrant or non-commissioned officers are in many cases isolated from the large stations is an additional reason for their exercising a greater degree of attention to these points than when under the immediate supervision of their superiors. Their promotion will depend not only upon the good condition of their charge, but also on the intelligence and smartness of their several detachments.

On promotion to 1st or 2nd class a master gunner may remain in the same charge or district as before promotion, but he may be moved if required for special duties.

The tour of service abroad is as laid down in the King's Regulations.

CHAPTER IX.

TRANSFER OF CHARGE OF EQUIPMENT.

1. *Transfer of Charge of a Sub-District.*

In the case of a transfer of charge of the equipment of a sub-district, the verification of the stores in connection with the armaments by a Board of Officers need not be carried out unless at the request of either of the officers concerned. Should such a request be made by either the officer handing over, or the one taking over, the Commanding Royal Artillery will appoint a Board of Officers for the purpose. Should no Board be assembled, the officer taking over charge will be held responsible for the correctness of the stores taken over by him, as shown by the balance on 31st of the previous March, subject to the variation caused by subsequent duly vouched store transactions.

2. *Taking over a Sub-District.*

On a change of accountants or master gunners, stock will be taken of the equipment and the balance of the account will be verified.

The distribution book is taken over by the incoming master gunner or accountant who should proceed to the first store shown in the manuscript headings above the numbered columns of the book and check the stores as shown therein, and so on throughout the book and work, until all the stores have been checked.

It is most important to ascertain from the "Detail" column of the Vocabulary of Stores, the nature and number of the components, appurtenances, &c., which form part of the store being checked.

e.g. Suppose the distribution book shows that the following item is held on charge in the account, viz.:—

	No.
Springs, running out, Q.F. 4·7 inch 	1

Referring to the Vocabulary of Stores the detail column shows against this store:—

"In two parts, with rod: with nut and split keys, nut compressing springs and plate for end of springs."

It is therefore essential that all these fittings be checked, before the "Spring running out, Q.F. 4·7-inch," can be passed as correct.

It must also be borne in mind that information as regards components, &c., which can be found in the tables of the Equipment or other Regulations, may not be shown in the detail column of the Vocabulary of Stores.

No.

e.g. Carriages, garrison, B.L. 6-in. C.P., Mark IV ... 1

The components, &c., of this store are found in the tables of Equipment Regulations, Part 2, Section XIIa, 1910.

The account is now taken over and the "State" Column compared with the balance on hand or "Remain," in the previous year's account, after having gone through the "Observations" to ascertain that all corrections have been duly made. All vouchers, viz.:—receipt, issue and conversion are then checked into the account to ascertain that they have been properly posted up. The account is then balanced by adding together the "State" and "Receipts" columns; the issue columns are totalled and deducted from the total receipts. The balance is then entered in pencil in the "Remain" column and compared with the totals shown in the Distribution Book A.B. 211, with which they should agree.

If any stores are found surplus they should be brought on charge by certificate receipt voucher. In the event of there being deficiencies, the matter will be dealt with as directed in paras. 668 and 670, King's Regulations. *Vide also* para. 79, Equipment Regulations, Part I, 1909.

If the stores are to be paid for, an "Expense" voucher (Army Forms P 1925 and P 1963) will be prepared and forwarded to the Regtl. Paymaster, who will enter in this voucher the number of his voucher and the period of his pay list in which the sum will be found credited to the public. Army Form P 1925 will then become an issue voucher to the Store Account in support of the articles struck off charge.

Any necessary corrections to the accounts, vouchers, &c., will be made in black ink and duly initialled, but the original entries should be decipherable.

All "Lists" of books, lithographs, maps, models, &c., will be verified.

The "R.E. fixtures" should be checked by the inventories of same supplied to the work. They are usually found pasted on boards screwed to the backs of the doors.

The ammunition at the work should be checked for groups, lots, ages, &c., by the "Records" (Army Form G 854).

Tool chests and articles held on charge in the accounts as "Sets," should be checked in detail by the Equipment Regulations or Priced Vocabulary.

Loan or spare stores, spare parts of component fittings, as also leather packings and washers, hydraulic packings, &c., should be checked for lengths and sets, &c., by the Equipment Regulations and Vocabulary of Stores.

The "Expenditure of Journal" is balanced in pencil, and the stock of cleaning materials, oil, paint, &c., verified.

If the stores be found to agree with those shown by the "Remain" of the Accounts, and the barrack and loan stores, and the lists of models, &c., found correct, a certificate as under will be forwarded to the C.R.A.

"I certify that on taking over _____ Sub-District, from _____ on (date) _____ I carefully examined the ordnance, ammunition, and stores, and that the articles so taken over by me correspond in every particular with the detailed account contained in the sub-district store accounts.

"(Name) _____,

"(Rank) _____

"(Date) _____."

APPENDIX I.

Abbreviations commonly used in connection with Store Accounts.

A.D.	...	...	Annual Demand.	
A.D.O.S.	...	...	Assistant Director of Ordnance Stores.	
A.F.	...	...	Army Form or After Firing.	
B.L.C.	...	...	Breech Loading Converted.	
C.	...	...	Common to both Services (Army and Navy).	
C.D.C.	...	...	Coast Defence Commander.	
C.I.W.	...	...	Chief Inspector, Woolwich.	
C.L.	...	...	Charger Loading.	
C.I.O.M.	...	...	Chief Inspector Ordnance Machinery.	
C.O.O.	...	...	Chief Ordnance Officer.	
C.P.	...	...	Central Pivot.	
C.R.V.	...	...	Certificate Receipt Voucher.	
D.D.O.S.	...	...	Deputy Director Ordnance Stores.	
D.E.O.S.	...	...	Director of Equipment and Ordnance Stores.	
D.P.	...	...	Drill Purposes.	
E.C.	...	...	Electro Contact.	
E. & P.	...	...	Electric and Percussion.	
G.S.	...	...	General Service.	
I.D....	...	...	Intermediate Demand.	
I.G.	...	...	Iron Galvanized or Instructor in Gunnery.	
I.O.O.	...	...	Inspecting Ordnance Officer.	
I.O.M.	...	...	Inspector Ordnance Machinery.	
I.V.	...	...	Issue Voucher.	
L.B.M.	...	...	Lever Breech Mechanism.	
L.S.	...	...	Land Service.	
M.B.	...	...	Manganese Bronze.	
M.C.I.	...	...	Malleable Cast Iron.	
M.G.	...	...	Machine Guns.	
N.P.	...	...	New Pattern.	
O.O.	...	...	Ordnance Officer.	
O.P.	...	...	Old Pattern.	
P.W.	...	...	Part Worn.	
Q.F.C.	...	...	Quick Firing, Converted.	
R.V.	...	...	Receipt Voucher.	
S.W.G.	...	...	Standard Wire Gauge.	
W.G.	...	...	Wire Gauge.	
W.O.	...	...	War Office.	
V.C.P.	...	...	Vavasseur Central Pivot.	
S.	...	...	Serviceable	} With reference to condition of Stores.
R.	...	...	Repairable	
U.	...	...	Unserviceable	
D.	...	...	Doubtful	
^	...	...	Serviceable	
↓↑	...	...	Unserviceable	
o	...	...	Unserviceable (gun).	
§	...	...	Paragraph List of Changes in War Matériel.	

APPENDIX II.

GLOSSARY OF TERMS USED IN STORE ACCOUNTING.

1. *Accountant*.—An official who renders to the War Office, or to an auditor appointed by the War Office, an account of public stores, or money (or both) received and issued by him.
2. "*Armament for Land Fronts*."—Mobile Armament allotted to Coast Defences.
3. "*Armament District*."—Two or more sub-districts grouped together under the charge of one accountant.
4. "*Bill of Lading*."—Army Forms (G 964 and 965) in which the master of a freight ship acknowledges the receipt on board his ship of the stores shown on the Forms.
5. "*Carriers' Note*."—An Army Form showing the detail of packages, &c., handed to a railway company for conveyance from one place to another.
6. "*Certificate Receipt Voucher*."—A voucher in which an accountant certifies that he has received certain stores which have not been charged to him by another accountant.
7. "*Consignee*."—The official to whom stores are sent.
8. "*Consignor*."—The official by whom stores are sent.
9. "*District*."—The extent of an Artillery Command.
10. "*Expense Voucher*."—The voucher by which is written off charge expense stores, such as practice ammunition, targets, &c.
11. "*Fixed Armament*."—Ordnance mounted in works of defence. The guns of the fixed armament are classed as under:—
 - "*Heavy*."—All guns above B.L. 6-inch.
 - "*Medium*."—B.L. 6-inch to Q.F. 4·7-in. Where the Q.F. 4·7-in. gun is used exclusively as an "anti-torpedo gun," it is classed as "Light."
 - "*Light*."—Q.F. 4-inch and under.
12. "*Folio*."—The right *and* left hand pages of an opened Account or Ledger.
13. "*Group*" (A.O.D.)—One or more sections placed under the charge of a Storeholder or Foreman at an ordnance depôt.
14. "*Group*" (Gun).—One or more adjacent guns placed under the command of a Gun Group Commander.
15. "*Group*" (Explosive).—The storage of explosives by "Marks" or "Lots" according to "Marks" and chronological date of manufacture.
16. "*Issue Voucher*."—A voucher in which stores issued are charged.
17. "*Priced Vocabulary of Stores*" or simply "The Vocabulary"—an official book, in two parts, containing the official designation and prices of stores dealt with by the Army Ordnance Department.

18. "*Period of Account.*"—The time between the opening and closing of an account—both dates inclusive.

The period of the R.G.A. Store account is 1st April to 31st March, annually.

19. "*Produce.*"—Stores broken up into the materials from which they have been manufactured.

20. "*Receipt Voucher.*"—A voucher detailing stores received.

21. "*State.*"—The stock on hand in opening a new account, *i.e.*, the "Remain" from one account brought forward into the next.

22. "*Stores in Transit.*"—Stores sent from one official to another for subsequent delivery to a third.

e.g. Ammunition despatched by one accountant to another through the Ordnance Officer in the command.

23. "*Sub-District.*"—Consists of one or more works of defence grouped together for convenience of administration and supervision under a master gunner or acting master gunner.

24. "*Section.*"—The term Section in store accounting is used for convenience to denote a certain number of works which, for the purpose of determining the proportion of "Spare" parts, have been grouped together in an Artillery Command by special authority.

25. "*Store Section.*"—A division of the Vocabulary containing an alphabetical list of stores for a particular service, thus:—

Section 1. Accoutrements.

" 2. Camp equipment.

" 3. Artificers' tools.

Each Section is separately stored in the main depôt at Woolwich, and the same arrangement is carried out, with necessary modifications, at all ordnance depôts at Home and Abroad.

26. "*Tonnage.*"—The weight or measurement of stores carried on a ship.

Freight is paid on tonnage, which may be calculated in two ways. (1) Measurement. (2) Weight. Forty cubic feet being reckoned equivalent to a ton.

Freight is classed for shipment as either "Heavy" or "Light."

To ascertain to which class a package should be classed, ascertain the weight and compare it with the cubic measurement, remembering that freight is paid on whichever is the more advantageous to the ship owner.

A convenient method is to consider the weight of the package in half-hundred weights—or fortieths of a ton.

Ex. (a) A case weighs 2 cwt. = $\frac{4}{10}$ tons. It measures $2' 6" \times 2' \times 2' = 10$ c. ft. = $\frac{1}{10}$ tons. Such a package would be classed "Light."

Ex. (b) A case weighs 1 cwt. = $\frac{2}{10}$ tons.

It measures $1' \times 1' \times 1' 6" = 1\frac{1}{2}$ c. ft. = $\frac{1}{10}$ tons. Such a package would be classed "Heavy."

27. "*Transfer Vouchers.*"—The voucher by means of which the nomenclature of stores or their condition as shown in the account is changed.

28. "*To Charge.*"—To debit another accountant with stores issued.

29. "*To Post.*"—To make an entry or entries in an account.

30. "*Within the Line.*"—Articles charged on a voucher *entirely* in the designation column.

APPENDIX III.

SPECIMENS OF COMPLETED ACCOUNTS, RETURNS, &c., RENDERED BY R.A. SUB-DISTRICTS.

Specimen of a Receipt folio of Army Book 184 and 185.
 RECEIPTS.

No. of Voucher	Date	Received from	SECTION No. 8A.— BLOCKS, CORDAGE, &c.				SECTION No. 8c.—SIGNALLING STORES.												
			cordage		packing hydraulic		cans, oils, feeding, army signalling	message cases, book	flags, signal, army			poles							
			hemp, hawser, 3-strand	white, 4-inch 2 inch 2 inch fathoms	lines, Hambro	1/2 inch square feet			3/4 inch square lengths	blme	white, with stripe		3 feet square	2 feet square	3 feet square	5 feet 6 inches	3 feet 6 inches		
			113	...	...	...	...	3	3	...	2	...	2	2	4	2	2	
5	1910. April 1st 1/1/11	State C.O.O.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Mar. 31st	Total receipts ...	...	...	...	5	3	...	2	...	2	2	4	4	4	2	4	2
	" "	Deduct issues from the other side
	Mar. 31st 1911	Remain at date ..	...	...	...	5	3	...	2	...	2	2	4	4	2	4	2	2

ISSUES.

No. of Voucher	Date	Issued to	SECTION No. 8A.—BLOCKS, CORDAGE, &c.				SECTION No. 8c.—SIGNALLING STORES.					
			cordage	lines, Hambro	packing, hydraulic	cans, oil, feeding, army signalling	cases, message book	blue	white, with stripe	poles		
			hemp, hawser, 3-strand	white, tarred, 1/4 inch 3/4 inch fathoms	1/2 inch square	3/4 inch square	2 feet square	3 feet square	2 feet square	3 feet square	5 feet square	6 feet square
3	11/1/11	C.O.O.	...	...	...	...	...	...	...	...	...	2
		Total Issues	...	...	...	...	...	...	...	2	...	2

Specimen copy of A.F. G 885.

Army Form G 885.

ACCOUNT of STORES (other than equipment of a work) in charge of the Gunnery Instructor, R.A., at Portsmouth, showing what has been Received and Issued between 1st April, 1910, and 31st March, 1911.

Description of Stores.	On charge on 1.4.10.	Receipts.										Total receipts (including state).	Issues.					Total issues.	On charge on 31.3.11.	
		*Voucher No.											*Voucher No.							
		28	30	32	40	41	47	20	25	26	27		3	4	5	6	7			9
SECTION 29.																				
Telephone sets—																				
Portable D Mark II	2																			2
Armatures		1																		1
SECTION 30.																				
Batteries, W.P.	10	3	2	6	5	1	1													
		1	3	2	4	6	1	1	4	5	56	9	7	6	8	9	1			
												14	10	18	19					
												1	4	7	2					48
																				8

Captain, R.A.,

Gunnery Instructor, S.C.D.,

30th April, 1911.

* If necessary, each of these columns may be used for the entries from more than one voucher.

Instructions for keeping Distribution Book, A.B. 211.

The several Batteries, &c., are to be written across the top of the Distribution Book in the space above the top line, such prolongations of the lines as may be required being made by hand for the purpose.

Under each Battery, &c., in the space above the figures, the several Magazines, Shell Rooms, and Store Houses, with their distinguishing Engineer numbers or letters, are to be filled in, in the order in which one meets them in going round the Sub-District.

Each Magazine, with its contents, is to be included in its proper place in the body of the book; but if it be found convenient to have, in addition, in a distinct part of the book, a more detailed statement of the contents of the Magazines, showing how the Ammunition and Powder are packed, such a statement may be kept.

In this and other records it is desirable to observe uniformity and simplicity as much as possible.

A specimen of part of a page of the book, completed in the manner intended, is shown below.

Designation of Article.	Southsea Castle.																							
	East Battery.											West Battery.											Parade.		Total.
No. of Line.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.		
SECTION 7.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tools, Artificers.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Screwdrivers, G.S., 6-inch	2	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	7

Specimen Copy.

Army Book 127.

Expenditure Journal and Work Book of the Southsea Castle Sub-District.

Date and No. of voucher on which received.	Receipts.								Issues.								Remarks.							
	Bricks, Bath.	Dubbing.	Lubricating, cool climates.	Fields.	For Instru-ments.	Olive.	Rangoon.	Mineral.	Soap, soft.	Tallow, Russian.	Dates of Issue to Expense.	Bricks, Bath.	Dubbing.	Lubricating, cool climates.	Fields.	For Instru-ments.		Olive.	Rangoon.	Mineral.	Soap, soft.	Tallow, Russian.		
1910-1											1910													
16 June ...	8	6	11	26	1	5	7	10	7	14	17 June	1	3	3	8	4	3	5	1	3	5	5	5	Expend in care and pre-servation of ordnance. &c.
4 July ...	3	...	...	...	...	...	...	4	...	10	18 Aug.	3	3	1	4	...	...	5	1	3	2	2	

Specimen Copy of A.F. G 981.

Army Form G 981.

(Notification from Army Ordnance Department that Stores are ready for issue to sub-districts.)

To Officer i/c Southsea Castle
Sub-District.

Ordnance Office,
Portsmouth,
27th July, 1910.

Issue Order No. $\frac{313}{27.7.10}$

The stores on your indent No. 24 are ready and can be had on application at Gun Wharf.

Weight...	...	tons.	cwts.	qrs.	lbs.	
		1	3	1	0	Bulky*
						Not Bulky*

(Signed)

Captain,

Ordnance Officer.

* Strike out as required.

(Specimen of Army Ordnance Department Issue Voucher for Stores issued to Royal Artillery Sub-Districts).

Two copies accompany this form, one of which is signed and returned to Army Ordnance Department when stores have been received. The original Army Form G 982 becomes the Sub-District "Receipt" Voucher, and is here shown completed. The other copy is kept as an office copy.

TO BE FILLED IN BY CONSIGNEE. †

Account or Station, Portsmouth.
Issue Voucher No. 28/175.
Date, August, 1910.

(Sub-District
Office Stamp.)

Issued by Ordnance Officer, Portsmouth.
To Officer i/c Southsea Castle Sub-District, the undermentioned articles, on Order dated 27/7/10. No. 313
Date and mode of conveyance Corps.
Number of sheets forming this voucher, one.

Army Form G 982.
TO BE FILLED IN BY CONSIGNEE.
Account or Station, Southsea Castle Sub-District.
Receipt Voucher No. 27.
Date, 1910-11.

Ledger Folio.	Designation.	Total number or quantity.	How Packed.				On what voucher package is charged.	For use in Army Ordnance Department only.											
			S.	R.	D.	U.		Description of package.	Mark.	Measure-ment.	Tonnage.								
G 9,81A.	I/1613, 27.7.10. Southern Castle Sub-District, Indent No. 6. Normal.																		
60	SECTION 28C. Range-finders, depression, Mark II Plates, base, Mark II Covers, base, plate, Mark II Mark II—	1 1 1	...	...	...	...	...	Case W. P.	P A/196	23/175	...	...	...	...	...	...	...	...	...
91	Spanners Case, wood packing	1 1	...	...	...	...	...	...	P A/196	...	...	...	...	...	...	...	...	...	...

J.B., 28.7.10.

Major, R.G.A.

Officer i/c Southsea Castle S.D.

† For office stamp of consignor on duplicate copy and of consignee on original. When Stores are issued on repayment, the No. or quantity and condition will be shown in the "S" column, and the value of the Stores in the "R," "D," and "U" columns.

Specimen of A.F. P 1926.

Army Form P 1926.

ARTILLERY PRACTICE AMMUNITION.

Expense Voucher.

(GARRISON AND SIEGE ARTILLERY).

Issue Voucher No. 7.

Account, Southsea Castle S.D.

Period 1910-11.

I certify that the ammunition shown below has been expended at *Battle Practice, and is hereby struck off charge.

(Signed)

Major, R.G.A.,

Accountant.

Station, Southsea Castle.

Date, 27th June, 1910.

Ledger folio.	Articles.	No.	†Rate as per "Statement showing the complete cost of rounds of ammunition."	†Amount.			Authority for expenditure.
				£	s.	d.	
G 908a	SECTION 24.						
60	Cartridges, B.L., filled, 9-2-inch, 34½ lbs.— Cordite, size 20 II	14	£ s. d. 7 7 0 ... each	102	18	0	Vide para. 145 Equip. Regns., Pt. 2, Sec. XIIa, 1910.
	6-inch gun, 10 lbs.— Cordite size 20 I	20	0 18 9 ... "	18	15	0	
62	Shot, practice, B.L.— 9-2-in. Mark IV ...	7	2 9 0 ... "	17	3	0	
	Shot, practice— B.L., Q.F., or Q.F.C. 6-in. gun	10	0 12 6 ... "	6	5	0	
	SECTION 26.						
70	Tubes, V.S.— Electric wireless P Mark III ...	18	0 1 10 ... "	1	13	0	For produce vide C.R. Vo. No. 26.
	Carried forward ...			146	14	0	

* Here state nature of Practice, i.e., Station, Regimental, or Company. The different kinds of Practice should be shown separately.

† These columns should not be completed when a fixed number of rounds of ammunition is allowed by Parts I and II, Equipment Regulations.

Army Form G 1033.

(A.) (*Specimen of R.A. Issue Voucher as prepared by consignor.*)
Issue and Receipt Voucher.

To be completed by Issuing Officer.
 Issue Voucher No. 3.
 Account, Southsea Castle
 S.D.
 Period, 1910-11.

(For office stamp.)

To be completed by Receiving Officer.
 Receipt Voucher No.....
 Account.....
 Period

Issued by officer i/c Southsea Castle S.D. at Portsmouth,
 to Officer i/c Warden S.D. at Isle of Wight.
 Authority, Local C/189/1 dated 20-7-10.
 Date and mode of conveyance, 27-7-10, W.D. vessel "Haldane."

PUBLIC LIBRARY OF VICTORIA

Ledger folio.	Articles.	Total number or quantity.	For A.O.D. use only.			
			S.	R.	U.	D.
	<i>Section No. 24.</i>					
	Boxes, Cartridge, Q.F. 4·7-in. Marks I to IV* guns L.S. Converted	4	...	...	...	...
	Cartridges Q.F. 4·7-in. Marks I to IV* guns, filled 5 lbs. 7 ozs., cordite, size 20, Mark VI. With Adapter....	20	...	...	...	...
	Plugs, fuze, hole— G.S. without loop	20	...	...	...	...
	Shells, Q.F., filled— Common 4·7-in., iron... ..	20	...	...	...	...

(Signed)

Major, R.G.A.
 Office i/c Southsea Castle S.D.

Army Form G 1033.

(B.) (*Specimen of R.A. Issue Voucher when completed by consignor and consignee.*)*Issue and Receipt Voucher.**To be completed by Issuing Officer.*Issue Voucher No. 3.
Account, Southsea Castle
S.D.
Period, 1910-11.(For office
stamp.)*To be completed by Receiving Officer.*Receipt Voucher No. 10.
Account, Warden S.D.
Period, 1910-11.Issued by Officer i/c Southsea Castle S.D. at Portsmouth,
to Officer i/c Warden S.D. at Isle of Wight.

Authority, Local C/189/1 dated 20-7-10.

Date and mode of conveyance, 27-7-10, W.D. vessel "Haldane."

Ledger folio.	Articles.	Total number or quantity.	For A.O.D. use only.			
			S.	R.	U.	D.
	<i>Section No. 24.</i>					
G 908A 60	Boxes, cartridge, Q.F. 4·7-in. Marks I to IV* guns L.S. Converted	4	...	...	...	...
61	Cartridges Q.F. 4·7-in. Marks I to IV* guns, filled, 5 lbs, 7 ozs. cordite, size 20, Mark VI. With adapter	20	...	...	...	...
62	Plugs, fuze, hole— G.S. without loop	20	...	...	...	...
63	Shells Q.F. filled— Common, 4·7-in., iron	20	...	...	...	...

*(Signed)*Major, R.G.A.
Officer i/c Southsea Castle S.D.*(Signed)*Major, R.G.A.
Officer i/c Warden S.D.

(Specimen Expense Voucher, showing how Targets are written off charge on being shot away at Practice.)

Expense Voucher.

Army Form P 1925.

GENERAL SERVICE.

Issue Voucher No. 6.

Account, Southsea Castle Sub-District.

Period, 1910-11.

I CERTIFY that the articles enumerated below have been struck off charge.

Station, Portsmouth.

Date, 31st December, 1910.

Ledger folio.	Articles.	No.	Rate as per vocabulary.	Proportion of full rate chargeable.	A.			B.	C.
					Amount credited to public.			Period of Pay List, and No. of Voucher in which credited.	Authority under which the articles are struck off.
					£	s.	d.		
<i>Section No. 20.</i>									
A.F. G 908A	Target Artillery—								
64	High speed, No. 1	...	3	...	...	...	...	...
64	„ „ No. 3	...	4	...	...	...	...	...
<i>Vide para. 176, Part 2, Sec. XILA, Equipment Regulations, 1910.</i>									

Certified that the above were shot away at R.A. annual practice, 1910-11.

(Signed)

Major, R.G.A.,

G.B.

O.C. Southsea Castle Sub-District.

The additional information required by columns A, B, and C will be inserted when stores are struck off charge as paid for, in which case the columns A and B will be completed in every particular, and signed by the Paymaster.

Army Form P 1925.

(Specimen Expense Voucher, showing how Stores which are chargeable against the Troops may be written off charge.)

Expense Voucher.

GENERAL SERVICE.

Issue Voucher No. 5.

Account, Southsea Castle Sub-District.

Period, 1910-11.

I CERTIFY that the articles enumerated below have been struck off charge.

Station, Portsmouth.

Date, 18th June, 1910.

Ledger folio.	Articles.	No.	Rate as per vocabulary.	Proportion of full rate chargeable.	A.		B.	C.	
					Amount credited to public.				
			s.	d.	£	s.	d.		
G948 A 5	Section No. 7. Hammers, claw, 28-oz.	1	1	5	1	5	June, 1910, No. 4 Voucher of No. 42 Co., R.G.A. Commanding Officer, <i>vide</i> para. 90, Part I, Equip. Regs., 1909.

(Signed)

Col.,

District Paymaster, S.C.D.

(Signed)

Major, R.G.A.,

Officer *in* charge Southsea Castle Sub-Dist.

G.B.

The additional information required by columns A, B, and C will be inserted when stores are struck off charge as paid for, in which case the columns A and B will be completed in every particular, and signed by the Paymaster.

Specimen of Transfer Voucher.

Army Form G 1049.

Transfer Voucher.

Station, Southsea Castle.

No. of Voucher.

Date, 31st July, 1910.

From Ledger folio.	WRITTEN OFF. Articles issued to repair or transfer.	No. or quantity.	To Ledger folio.	BROUGHT ON. Articles received from repair, transfer, or manufacture.	No. or quantity.
	<i>Section 7.</i>			<i>Section 7.</i>	
G908A 87	Drivers, screw, G.S. 6 inch	6	G908A 8	Screwdrivers, G.S. 6 inch	6

Alteration of nomenclature. *Vide* Priced Vocabulary of Stores, 1909, Part I, p. 152.

	<i>Section 23.</i>			<i>N.I.V.</i>	
57	Cartridges, Q.F. or Q.F. C., primers, elec. large, Mark IV**	200	80	Metals, old (from burnt out primers) lbs.	74 $\frac{9}{10}$

Expended in testing firing circuits. *Vide* Equip. Regs., Part 2, Sec. XIIA, 1910, pp. 64 and 65, and para. 86.

	<i>Section 24.</i>			<i>Section 23.</i>	
57	Cartridges, Q.F. or Q.F. C., adapters, Mk. IV	20	57	Cartridges, Q.F. or Q.F. C., primers, elec. large, Mk. II	20
58	Cartridges, Q.F. 4.7 in., Mks. I to IV.* guns, filled 5 lbs. 7 ozs. cordite, size 20, Mk. VI. ...	20	58	<i>Section 24.</i> Cartridges, Q.F. 4.7 in., Mks. I to IV.* guns, filled 5 lbs. 7 oz. cordite, size 20, Mk. VI., with adapter	20

Exchange of Electric Primers for Adapters, for percussion firing.

I CERTIFY that the articles have been correctly transferred as shown, that the unserviceable stores have been properly broken up, and that the produce is correct in quantity and all other details.

Approved

(Signed)

Major, R.G.A.,
Accounting Officer,
Officer i/c Southsea Castle S.D.

N.B.—This form will be used for bringing on charge articles manufactured in the Ordnance workshops, and for the transfer of articles from the repairable to the serviceable condition. It may also be used for transferring articles from the doubtful condition to unserviceable or produce, but in that case an examination or inspection note must be annexed in support of it; and for correcting errors of description in the ledger, as full explanation as possible being given as to how such errors arose. But whenever Boards of survey are held, the report of survey will alone be used as a transfer voucher, as directed by the Regulations for Army Ordnance Services.

Attention is also directed to para. 656, Regulations for Army Ordnance Services (Part I), 1909.

Specimen of A.F. G 1045.

Army Form G 1045.

No. _____

REPAIR INDENT (to be rendered in duplicate).

Station, Portsmouth.
Date, 1st August, 1910.

Corps or Department, R.G.A.

Description of Article to be Repaired or Converted.	No. or Quantity.	Nature of Service.	Authority (if any).	No. and Date of Expense Vr. on which the Materials for the service are written off charge.*	Work on Service.		Remarks.
					Com-menced.*	Com-pleted.*	
Ordnance, B.L. 6-inch, with mountings and stores.	4	To be examined and overhauled before annual cleaning and painting in the Sub-District, which will begin on 8.10.10.	Para. 313, Regulations for Care and Preservation of W.M. and Magazines.				

* To be inserted at Ordnance Workshops.

(Signed)

Major, R.G.A.,
In charge of Southsea Castle Sub-District.

Approved _____

Chief Ordnance Officer _____

ROYAL ARTILLERY UNITS.

(ALL ARMS.)

Indent for Gun, Howitzer and Aiming Rifle Ammunition for Practice and Exercise.

Indent No. 6. Date, 10th April, 1910.

For A.O.D. use only.

Corps, R.G.A., Outer Defences.

Address for Stores, Officer i/c Southsea Castle, Portsmouth.

Date when required.

ISSUE No.

I Certify that the Ammunition detailed below (one sheet) is demanded in accordance with Regulation.

Articles.	Total quantity required.	Rate.*			Value.*			Quantity in possession of Unit available in aid of this requisition.†	To be supplied by A.O.D.	To be left blank.	Remarks. The regulations or the Authority under which the indent is made is invariably to be quoted.
		£	s.	d.	£	s.	d.				
SECTION No. 23. Cartridges, Q.F., blank, 12-pr., 12 cwt., filled, Mark II	45	0	0	0	0	0	0	...	45		Vide Equip. Regns., pt. 2, Sec. XIIa, 1910, para. 166. ... Half annual allowance.
SECTION No. 27. Cartridges— Aiming rifle, 1-inch electric, Mark V	1000	0	0	10	11	13	4	...	1000		Vide Equip. Regns. pt. 2, Sec. XIIa, 1910, para. 145. and C.R.A. C/139/1. Annual allowance ammunition (in part).
Total value ...	...	...	...	...	11	13	4	...	...

Approved.

(Signed),

Major, R.G.A.

Chief Ordnance Officer.

Rank, Officer i/c Southsea Castle.

Specimen copy of A.F. G 997.

Army Form G 997.

GENERAL EQUIPMENT INDENT,

ALL SERVICES.

For A.O.D. use only.

Indent No. 6. Date, 27/7/10. Numbers on which indent is based
Corps, R.G.A., Southsea Castle S.D. No.
Address for Stores, Officer i/c Southsea
Castle S.D.

ISSUE No.

I CERTIFY that the stores detailed below (1 sheet) are demanded in accordance with regulation, and that material for repair and consumable stores previously drawn have been expended for the public service.

(Signed)

Major, R.G.A.,

Officer i/c Southsea Castle S.D.

(Countersigned) _____

Chief Ordnance Officer _____

Remarks.	Description of Articles.	Establishment or Authorized proportions.	On Charge.		Years the articles are supposed to last. to be replaced have lasted.		Now required.	For A.O.D. use.		
			S.	U.						
The reason why articles are demanded to be stated. The regulations authorizing the establishment or the Authority under which the Indent is made is invariably to be quoted.	To be arranged alphabetically, in sectional order, in accordance with authorized nomenclature.									
To replace U.S. through fair wear and tear. Vide Equip. Regns., pt. 2, Sec. XIIa, 1910, pp. 102 and 141. Estimated.	SECTION No 19. Heads, brush rammer and sponge— B.L. 9-2-inch Chamber No. 1 ...	4	2	2	...	...	2			

Specimen copy of A.F. G 854.

Army Form G 854.

SHELL STORE, No. 1, B.L., 6-INCH.

Record of Cartridges, Gunpowder, Fuzes, Tubes or Shells, in charge of the
Royal Artillery at Southsea Castle.

Group.	Contents.	Made, repaired or filled.				Received.		Expended.		Memo. of Inspection.
		No.	Date.	By whom.	Lot of Powder or Cordite, or thousand of Fuze.	Date.	From whom.	No.	Date.	
	Shell, B.L., Q.F. or Q.F.C. filled, Com. Lyddite, 6-inch gun—									
I.	Mark III ...	300	7/08	R.L.	...	9/08	O.O. Tipnor	...	...	C.R.A., 3/10 I.O.O., 2/07 3/08 3/09
II.	" IV ...	200	5/08	"	...	8/09	"	...	...	I.O.O., 3/10
	Fuzes, Percussion, D.A. impact, No. 13—									
I.	Mark III* ...	175 170	7/09	"	27	10/09	"	5	4/10	} To I.O.O. for proof. I.O.O., 3/10
II.	" IV ...	145 140	8/09	"	16	10/09	"	5	4/10	
III.	"	45 40	10/09	"	20	10/09	"	5	4/10	
IV.	... ..	115 110	11/09	"	25	10/09	"	5	4/10	

NOTE.—The Officer in charge will be held strictly responsible that Ammunition is expended at practice in accordance with the order of priority laid down in Equipment Regulations, Part II, Sec. XIA. At his Annual Inspection the Inspecting Ordnance Officer will satisfy himself that the turn over of Ammunition has been correctly made.

This form will be attached to a board and hung in the magazine or store.

VOUCHER.

SOUTHSEA CASTLE STATION. AUGUST, 1910.

ACCOUNT of Fuel and Light drawn from Army Stores for Royal Engineer Machinery and Workshops; Fire Engines; Electric Light Apparatus; Magazines and Defences; Signalling Service; Lighthouses; Army Ordnance Workshops; Army Service Corps Laundries, Bakeries, Abattoirs, &c.

	Coal.		Coke.	Wood.	Oil for Lighting.		Wick, flat, 3/4-inch. inches.	Candles.			Service.
	Household. lbs.	Steam. lbs.			Smiths'. lbs.	Rape and Paraffin. pints.		Colza. pints.	Paraffin or Stearine. lbs.	Barrack. lbs.		Magazine lbs.
Remain last month
Received*	16	...	72	...	...	50	...
TOTAL	16	...	72	...	...	50	Expended in Lighting, Magazines, Ammunition Stores and passages in the above Sub-District during the month of August, 1910.
Expended	16	...	12	...	...	30	...
REMAIN...	60	...	...	20	...

I certify that the supplies specified above as expended were actually used in the public service, and that the remains were verified on 31st August, 1910, by me.†

Signature of Officer

Major, R.G.A.,

Major, R.G.A.,

Officer i/c Southsea Castle S.D.,
1st September, 1910.

Countersigned Head of Department.
Officer i/c Southsea Castle S.D.

* NOTE.—The quantities entered here should correspond with those shown as issued in the Barrack Fuel and Light Account, F 779.

† NOTE.—The remains to be verified by an Officer.

Specimen copy of M.S. indent on A.S.C.

SOUTHSEA CASTLE SUB-DISTRICT.

*Requisition on O.C. Supplies, A.S.C.,
Portsmouth.*

Portsmouth,
1st October, 1910.

Description.	No.	Remarks.
Candles, Magazines ... lb.	25	Required for lighting lamps and lanterns in above sub-district.
Oil, colza gallon	1	
Wick, $\frac{3}{4}$ -inch, flat ... yards	3	

*The
O.C. Supplies,
A.S.C.*

(Signed) _____, Major, R.G.A.

O.C. Southsea Castle Sub-District.

G.B.

Master Gunner, R.G.A.

MS. Return of Dismounted Ordnance. To accompany A.F. G 844.

SOUTHSEA CASTLE SUB-DISTRICT.

Portsmouth,

1st April, 1911.

Fort or work.	Nature and No. of ordnance dismounted.	Register No.	Weight.		Mountings.		Remarks.
			tons	cwts. qrs.	Carrriages.	Slide.	
SOUTHSEA CASTLE.							
East Battery	B.L. 9.2-inch, Mark X	26	28	3	...	Garrison, barbette, B.L. 9.2-inch, Mark V	Repairs to accumulator system.
West Battery	Q.F. 4.7-inch, Mark IV*	108	2	3	...	Garrison, Q.F., 4.7-inch, C.P., Mark II	Annual overhaul by armament artificers.

(Signed)

Major, R.G.A.,

Officer i/c Southsea Castle S.D.

Specimen copy of Army Form G 872.

Army Form G 872.

* ANNUAL RETURN of rounds fired from B.L., B.L.C., Q.F., R.B.L. and R.M.L. Ordnance, to 1st June, 1911.

SOUTHEA CASTLE BATTERY OR WORK.*

Description of gun.		Date of last Examination.	Nature of charge.	Number of Roundst												Remarks.
				Fired since last Annual Return.			Fired since date of last examination.			Total fired to date of present Return.						
				Full.	Blank.	Size of Cordite.	Full.	Blank.	Size of Cordite.	Proof.	Full.	Blank.	Size of Cordite.			
Ordnance, B.L., 9-2-inch	X E.O.C.	26 1 6 09	Powder	Certified that the Memorandum of Examination is in possession and is corrected to date.
			Cordite	2	16	...	30	...	...	27	40	...	30	...
			Cordite, M.D.	...	...	...	...	...	2	...	...	...	44	...
			Cordite, M.D.T.	...	...	...	...	...	...	...	...	...	...	...

* All guns are to be shown in this Return, whether they have fired rounds or not. A separate form must be used for each Battery or Work.
 † Only rounds fired with present A tube or liner are to be shown. Care must be taken to show the total number of rounds on the respective lines provided for the various nature of charges and the size of Cordite used stated.

Major, R.G.A.
 Officer i/c Southsea Castle S.D.
 Lieut.-Colonel.

Specimen copy of A.F. G 874.

Army Form G 874.

Annual Return of Rounds Fired from Guns on Garrison Mountings.

Compiled from Memorandum of Examination for Mounting.

Name of Work.—Southsea Castle.

Station, Portsmouth.

Description as on Memorandum of Examination for Mounting.	No. of Rounds with projectiles.		Remarks.
	Since last Return.	Total to date.	
Carriage Garrison, B.L. 9.2 in. bar- bette, Mark V, No. 120, R.G.F.	20	51	¾ charges.

Major, R.G.A.,

Officer i/c Southsea Castle S.D.

..... CommandingDistrict.

Dated.....19

The Chief Inspector, Woolwich.

Specimen copy of A.F. G 875.

ROYAL ARTILLERY. Southsea Castle Battery or Work, Portsmouth Station. 8th August, 1910. Army Form G 875 No. 3. REPORT OF EXAMINATION OF ORDNANCE(*) after prescribed Number of Rounds. Indent.

Description of Gun	Size of Vent of R.M.L. Guns only.	Number of Rounds.				Actual total of all rounds (Powder and Cordite) fired with present A tube or liner to date of this examination.	When next required for practice.	Remarks.	B.L. and Q.F. Smallest diameter of bore at each step in A tube or liner. Diameter of bore and upwards using Cordite. Diameter of bore of rifling.	(7)	(8) How left.	
		Fired since last examination.		Charges.								Remarks.
		Nature of Powder or Cordite	Size of Cordite.	Full.	Blank.								Total equivalent full rounds
Designation.	Through.	(2)	(3)	(4)	(5)	(6)	(7)	(8)				
Ordnance, B.L., 9 2-inch	Bottom.	Cordite	30	30	3	160	25	As soon as ready	6-in. and upwards using Cordite. Diameter of bore of rifling.			
	Register Number.	...	37	4	...	6	...					
	Maker.	...	...	...	...	...	...
	Mark.	...	...	...	...	...	...
		E.O.C.	17	...	...	...	...	

The Chief Inspector,
Woolwich.

Major, R G A.
Signature of Officer in charge of Battery.

Signature of Inspecting Officer.

Signature of Officer Commanding Royal Artillery.

- (1) State here "after prescribed number of rounds," or other reason for examination.
- (2) Enter in this column whether Powder, Cordite Mark L., Cordite M.D., or Cordite M.D.T., using one or more lines as may be necessary.
- (3) State clearly the size of Cordite used against each total.
- (4) All full, $\frac{3}{4}$, $\frac{1}{2}$, or blank rounds are to be shown in the respective columns provided for them. In computing the number of equivalent full rounds the nature of powder and size of cordite are not to be considered, and four $\frac{3}{4}$, sixteen $\frac{1}{2}$, or sixteen blank rounds are to be taken as equal to one full charge; any other reduced charge is to be taken as equal to the charge (full, $\frac{3}{4}$, or $\frac{1}{2}$) next above it.
- (5) State of bore and powder chamber, and defects in vent or fittings to be shown here. In all cases where possible, the necessary gutta-percha impressions should accompany this Return.
- (6) Any repair, entered under "Sentence" that can be carried out locally will be completed, and condition of the gun after repair entered in this column before the form is forwarded, and an entry is to be made in the memo. of examination accordingly.

Specimen copy of A.F. P 1928.

A.F. P 1928.

Armament Account to 31st March, 1911.

STATION—PORTSMOUTH.

PRACTICE AMMUNITION, INCLUDING BLANK, DEFINED IN VALUE.

I. ALLOWANCE.**PRACTICE.**

Number of Company Staff-Serjeants, Serjeants, and rank and file (including trumpeters), of companies in the approved establishment of the defence or station on 1st January, 1910, <u>who are allotted to fixed defence armament guns</u>	No.	500
	£	s.
Allowance for above at £8 10s. 6d. per capita...	1,762	10 0

BLANK.

For 4 Companies R.G.A. at £17 per company ...	£	68
-----------------------------------------------	---	----

II. EXPENDITURE.

Sub-District Account.	No. of Voucher.	Total amount on each Voucher.		
		£	s.	d.
PRACTICE AMMUNITION.				
Total Practice Ammunition ...				
BLANK AMMUNITION.				
Total Blank Ammunition ...				

Specimen copy of A.F. G 906.

Army Form G 906.

ARMAMENT ACCOUNT TO 31st MARCH, 1910.

Station, Portsmouth. Sub-District, Southsea Castle.

Ordnance and Mounting.	No. of rounds authorized (whether half-yearly, yearly, or biennially, to be distinguished).	No. of rounds fired.	Class of practice. Regimental or Station.	Committed.		No. of Voucher by which fired cases, primers, and tubes have been retaken on charge.
				No. of rounds.	No. of rounds 1 in. for which committed.	
One B.L., 9-2 in., Mark X	Biennially ...	4	Station ...	...	...	14
Carriage Gun, barbette, Mark V, J...	Annual ...	40	Service Com-pany. Battle...	...	...	15
...	...	18	...	...	...	25
						C.R.V., 6.

Major, R.G.A.

Officer i/c Southsea Castle S.D.

APPENDIX IV.

RETURNS, &c., FURNISHED IN ROYAL ARTILLERY DISTRICTS.

Army Form. &c.	Description of Return, &c.	Due from		Original or duplicate (Sub-Dist.).
		District.	Sub-District.*	
Biennial—				
G 881	Reservoirs Compressed Air			0.
Annual—				
G 844	Field and Garrison Mounted Ordnance.	1st April...	...	0.
MS.	Dismounted Ordnance ...			0.
G 951	Record of Armament Guns	1st April ...	...	0.
G 908A G 885	Royal Artillery Sub-District Store Accounts.	...	30th April ...	0.
G 872	Rounds fired from Ordnance	1st June ...	...	0.
G 988	Indent for Gun and Howitzer Ammunition for Practice and Exercise, R.A.	...	...	0.
G 800 G 801	Royal Artillery Annual Estimates for Stores.	As ordered locally.	...	0.
G 874	Annual Return of Rounds fired.	1st Jan. ...	...	0.
P 1928	Practice Ammunition Expended: Statement of Value.	30th April	30th April ...	0.
G 905	Return of Salutes (to accompany Accounts).	30th April	30th April ...	0.
G 906	Practice Ammunition: Statement of Expenditure.	30th April	30th April ...	0.

* The dates shown are subject to local arrangements.

Army Form, &c.	Description of Return, &c.	Due from		Original or duplicate (Sub-Dist.).
		District.	Sub-District.*	
Quarterly—				
G 997	Indent for Equipment ...	...	} 1st March, 1st June, 1st Sept., 1st Dec.	} †T.
G 1029	Statement of Cleaning Materials.	When required.		
G 1033‡	Voucher for Return of Unserviceable and Surplus Stores, Empties, &c.	...		
MS.	Indent for Candles, Oil, Wick, &c.	...	} 1st April, 1st July, 1st Oct., 1st Jan.	} O.
B 77	Qualification Return ...	31st March		
G 1049	Expenditure, &c., Voucher (Ammunition, &c.).	...	} Variations quarterly. With Accounts	}
G 819	Detail of Changes in Armament.	1st Jan., 1st July, 1st Oct.		
Monthly—				
O 1779	Working Pay List ...	...	} 1st of month.	} O.
O 1677	Pay List of Non-commissioned Officers and Gunners Employed in Cleaning and Painting Ordnance, &c.	...		
MS.	Monthly Sub-District Report on Armament.	...		
G 1045	Indent on Army Ordnance Department for Repairs &c. to Armament.	...	} 1st of month.	} O.
F 765	Indent for Exchange of Barrack Stores.	...		
F 771	Expenditure Voucher for fuel and light.	...	...	O.
Weekly —				
G 948	Weekly Sub-District Report	...	Mondays ...	O.

* The dates shown are subject to local arrangements.

Army Form, &c.	Description of Return, &c.	Due from		Original or duplicate (Sub-Dist.)
		District.	Sub-District.*	
As required—				
G 875	Return of Ordnance which have fired the prescribed Number of Rounds.	...	As required...	O.
G 998	Equipment submitted to a Garrison Board as unserviceable, lost, &c.	...	As required in duplicate, with report and evidence	D.
K 1306	Indent for Immediate and Urgent Repairs (on Royal Engineers).	...	As required...	O.
P 1925	Expense Voucher (for targets, stores lost and charged against troops &c.)	...	As required, with Accounts.	O.
P 1926	Expense Voucher for Artillery Practice Ammunition.	...	As required, with Accounts.	O.
P 1957	Stores written off charge and sold by auction.	...	As required...	D.
G 803	Ammunition. Small arm, &c.	...	As required for I.O.O.	D.
G 814	Ammunition. Small arm on charge.	...	As required...	O.
G 842	Fuzes time and Percussion. Report of proof of.	...	As required...	D.
G 848	Electric Fuzes and Tubes. Report of proof.	...	As required for I.O.O.	D.
G 864	Gunpowder in charge	...	As required for I.O.O.	D.
G 897	Tubes, Friction, Copper, &c.	...	As required for I.O.O.	D.
G 899	Report on Miss-fires: Fixed armament guns.	...	As called for	O.
G 900	Cartridges, filled. Report of inspection.	...	As required for I.O.O.	D.
G 911	Shells filled. Report of inspection.	...	As required for I.O.O.	D.

* The dates shown are subject to local arrangements.

APPENDIX V.

INSTRUCTIONS FOR PAINTERS.

ARTILLERY MATÉRIEL.

Paint is supplied to the Royal Artillery prepared ready for use. Prepared paint can be thinned, when necessary, with raw linseed oil and turpentine. All paint must be *thoroughly* mixed before its application.

Before painting, all parts must be thoroughly dry. Painting should not be carried out in the open in wet weather. After painting, if possible, the article should be placed under cover until the paint is thoroughly dry, as rain readily spoils the work.

Before painting any article it should be carefully examined in every part; all damaged portions repaired, splintered surfaces cleared off, nuts of bolts and screws tightened to ensure that the joints are drawn firmly together, and all traces of dirt or dust removed. Mountings, especially when mounted in exposed open works, require considerable scraping and cleaning; they should be stripped of all their removable parts, and all loose paint, rust, and corroded oil thoroughly removed.

In commencing to paint, it is best to start at the top and work downwards, from right side towards the left, spreading the colour thoroughly, and cross the work.

Before applying the second coat, all holes and crevices should be carefully stopped with putty. The first coat of paint should be allowed at least 24 hours to dry.

Before giving the finishing coat to either gun, or mounting, except the inside of the carriage, mount the gun, then give the finishing coat over all.

No unsound material should be painted without its condition being first reported.

As a rule, drain holes are made to carry off any rain that may collect; these holes must be cleared thoroughly.

In lubricating, the lubricating holes will be cleaned out with a wire and filled with oil, care being taken to replace the small screws, the heads of which must be kept bright so as to be easily seen.

Parts not be painted.

The shafts, spindles, teeth of wheels, elevating arcs, traversing racks, axles, piston rods of hydraulic buffer bearings; the sliding surfaces of mountings, guns and cradles, as also the friction cones,

brake drums and discs of frictional clutches, should not be painted; they should be cleaned and freed from rust and then slightly oiled to prevent seizure.

Care of Paint Brushes.

All paint brushes, when new, require to be "bound up" part way with string, to obtain good work from them; as they become worn they should be unbound by degrees until the string can be dispensed with. To bind a brush, take a piece of twine about 20 ft. in length, make a loop and pass it over the brush, allowing the loose end of about 10 inches on the left side. Now make a small loop at the short end and commence binding, keeping the short length underneath while so doing. The simplest way to do this is to turn the brush, keeping the handle towards the body, and guide the string, taking care it does not overlap. When bound up about $1\frac{1}{2}$ inches, finish off by making a half hitch from the point of the short end and continue the operation until the opposite side of the brush is reached, the last half hitch being put on the opposite way. Lastly, pass the short end through the loop at the bottom and draw the loop out, then secure both ends of the twine by making two cuts in the handle close up to the stock of the brush, and force the twine into the cut with a knife. Brushes that have been in paint should be kept in water when not in use. If, however, they are to be kept in store, all paint should be rubbed out of them, and they should be washed with turpentine. String bound brushes are liable to burst if placed too far in water after using. When not in use, only the hair should be covered by water, or the wood handle will swell, causing the twine to give way, which will render the brush useless. New brushes should be "broken in" on new work for priming and second coating before being used for finishing. Varnish brushes when not in use should be well washed in turpentine or kept in raw linseed oil.

Painters' Brushes.—The nature and sizes of paint brushes are denoted as follows:—

Ground or unground, 0 and 000. These are the large brushes used to apply paint to large surfaces, 0 being the smallest.

Ground brushes are those which have the square edges at the point ground off to a slightly conical form, which makes them suitable for laying on the finishing coat.

Sash tools are denoted as 2, 4, 6, and 8. They are small brushes used for laying paint on small surfaces.

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