

**THE INSTITUTION OF
POST OFFICE ELECTRICAL ENGINEERS.**

**The Principles Underlying
Post Office Engineering
Accounting.**

BY
A. H. SHEPPERD, Assoc. I. E. E.

A PAPER

*Read before the London Centre of the Institution on
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THE PRINCIPLES UNDERLYING POST OFFICE ENGINEERING ACCOUNTING.

In this Paper an endeavour will be made to indicate the reasons why Post Office Engineering Officers are required to account for their expenditure in the manner prescribed in the official regulations and instructions, and some of the purposes to which the accounts and financial statements prepared by district officers are put after they leave the Superintending Engineers' hands.

The treatment of the accounts and various statements of expenditure after they have been despatched by the Superintending Engineer to the Accountant General or to the Engineer-in-Chief is a matter which some may regard as of no concern of district officers: on the other hand it is well known that there are many who would welcome an opportunity of enlarging their knowledge of the *raison d'être* of our accounting system, and of the accounting principles relating to our work.

Doubts have been entertained by some as to the need for the refinements of our accounting system, and as to whether if the importance of economy combined with efficiency be borne in mind by spending officers, their responsibility has not been fully discharged. Economy is, however, a relative term, lending itself to a variety of interpretation, and it is only when individual conceptions of economy in engineering expenditure are related to standards established on a scientific basis that individual claims to economy can be gauged. It is in this connection that the value of costing becomes apparent. Furthermore, there may be economical spending without any reliable record of the incidence of the costs of an undertaking, as, *e.g.*, between new plant, renewals, and maintenance. No business can be conducted satisfactorily without knowledge of the directions in which expenditure is being incurred, in other words without an efficient system of accounts. It is generally admitted to be sound business that

estimating should precede expenditure: similarly, it is sound business that when expenditure has been incurred a reliable financial record thereof should be preserved. The value of such records will be apparent as we proceed.

STATUTORY ACCOUNTS, THE RAISING OF FUNDS, ETC.

It will be convenient to explain at the outset that all our accounting roads lead to the preparation of certain Accounts which the legislature requires the Postmaster-General to furnish annually for presentation to Parliament. These are known as the Appropriation and the Commercial Accounts. Their structure will be examined in some detail later in this Paper, but it is necessary at the outset briefly to refer to the provisions relating to the preparation of these Accounts, the raising of funds, and to the broad classification of expenditure between Cash and Works headings.

Funds for telegraph and common service new works, and for maintenance, renewal, and rearrangement work on telegraph, telephone and common services are voted annually by Parliament on the basis of Estimates prepared annually by the Engineering and Stores Departments, studied and reported upon by the Accountant-General, and approved by the Secretary and the Treasury. These are known as Vote Estimates.

New telephone works are financed out of loans raised on the authority of Acts of Parliament. Normally the capital is provided by advances made by the Commissioners of the National Debt, and repaid to them by means of annuities charged on the Post Office annual vote. The periods of these loans have varied from 12—20 years, and have latterly been about 15 years. In addition to the sums so raised, a considerable amount of telephone plant has been provided by means of Exchequer Advances.

The Annual Estimates in respect of Vote are prepared under the following subheads, viz. :—

- Subhead I, Salaries, Wages, etc.
- „ K, Engineering materials.
- „ L, Contract work, etc.

An appendix to the Vote Estimates is prepared showing the estimated expenditure in cash and stores divided between construction, renewals and rearrangements, and maintenance,

for each service—telegraph, telephone, and common service.

Pursuant to certain Acts of Parliament a statement of the expenditure incurred in each financial year is prepared on lines similar to those followed in preparing the Annual Estimate. This statement is known as the Appropriation Account. In it grant and expenditure appear side by side, and explanations are furnished of any material differences.

The Telegraph (Money) Act, 1920, provides that annual statements as regards the telegraph and telephone services, respectively, shall be laid before Parliament showing the capital raised and expended and the annual charges in respect thereof, and statements of the income and expenditure during the previous year. These statements are known as the Commercial Accounts.

In both the Appropriation and the Commercial Accounts the expenditure has to be classified according both to its nature and its purpose or object, and our accounting procedure is shaped to this end. The system therefore has two sides—the Cash side and the Works accounting side. Two sets of book records are kept by the Accountant-General—the Cash Ledger, showing expenditure under subheads of the Vote and Telephone Capital, and the Expense Account Ledger, showing the expenditure under Works headings.

Engineering expenditure is incurred by two Departments—the Engineering Department and the Stores Department. The expenditure incurred by the former is in respect of salaries, wages, travelling, contract payments, wayleaves, rents, etc., in connection with maintenance, renewals, and construction; and by the latter in respect of the purchase, custody and issue, etc., of stores.

We will now consider the responsibilities of Engineering Officers in regard to accounting for expenditure for the purpose of the Statutory Accounts. Reference to district routine will on the whole be omitted, it being assumed that as regards this you are already fully informed.

ACCOUNTING RESPONSIBILITIES OF ENGINEERING OFFICERS.

It is hardly necessary to remind you that all spending officers must render an account of their receipts and expenditure during prescribed periods as soon as possible after the close of such periods. These statements are known as Cash Accounts. The Cash Accounts rendered by Superintending

Engineers monthly to the Accountant-General are furnished under the Vote headings, *e.g.*, salaries, wages, travelling, local purchases, wayleaves, etc.

As already mentioned, stores are purchased by the Stores Department. Their value does not enter into the Cash Account. It is therefore necessary for separate statements to be rendered of the total value of all stores transactions to and from works, and of issues in respect of maintenance. These statements, which are known as "Stores Accounts," are rendered monthly to the Accountant-General. In them stores are charged out at what are known as "rate book" prices. These are the averages of purchase prices, and are fixed periodically by the Stores Department.

It is, of course, not sufficient merely to furnish a bare statement of cash received and expended and of the values of stores issues and recoveries. It is necessary also to furnish in some detail information as to the directions in which expenditure has been incurred, *i.e.*, as to the nature and the purpose or object of the expenditure. Its nature is indicated in the Cash Account or Vote headings. Its purpose or object is indicated by Class of Work, Works Order, etc., allocations. As regards the latter, all expenditure has to be allocated by engineering officers to either direct or indirect heads. It is the practice wherever practicable to allocate direct to the work concerned. Certain expenditure, however, cannot be definitely allocated to maintenance or works or any particular subdivision thereof, and certain other expenditure would not justify the labour and trouble entailed in detailed allocation. These classes of expenditure are known as "Indirect" or "Miscellaneous," *e.g.*, salaries, travelling, sick and holiday pay of workmen, tools, small stores, wayleaves, freight and handling, etc.

The Class of Work allocation enables differentiation to be made in most cases as between expenditure on the telegraph and the telephone services, and expenditure common to telegraph, telephone and postal services, known as "common service"; also as between maintenance, new works, and renewals and rearrangements. Engineering officers are not required to differentiate between the telegraph and telephone services in those cases in which more than one service is involved in a Class of Work, or between expenditure on new work, renewals, and rearrangements in cases of works of a composite nature.

Allocation of expenditure as between overhead, under-

ground and internal work is necessary in connection with the plant records kept by the Accountant-General for the purpose of the Depreciation Accounts. Allocation is also necessary as between the costs of providing and of recovering and shifting, except in external renewal work, in order that expenditure may be divided by the Accountant-General between capital and revenue.

The allocations between overhead, underground and internal work have to be made by the district staff, as have also the allocations between providing, and recovering and shifting. As regards the *labour* element of expenditure, the source of allocation is the primary voucher (progress report or diary page) prepared daily by the workman, and it is naturally regarded as a matter of extreme importance that the allocations to Classes of Work, etc., on these primary vouchers shall be accurate. The Stores allocations are originated by the officer or workman demanding the stores.

The labour allocations between overhead, etc., and between providing, etc., are also used as the basis of Unit Costing.

RECORDING AND VALUATION OF LABOUR.

Labour allocations are made in manhours. The summaries of the primary vouchers made each month in the Superintending Engineer's Office give the total manhours proper to each Class of Work, works order or subdivision of maintenance. The grand total of the manhours allocated must, of course, be in agreement with the total hours paid for on the relative pay sheets. The total money value of the pay sheets is divided by the total manhours, which gives the average rate of pay per hour for all labour performed in the district during the month. The manhour allocations to Classes of Work, etc., which have been made are then priced out at this average rate, and the cash charge to each heading arrived at.

THE COST STATEMENT.

The whole of the actual expenditure in each District, direct and indirect, and the value of stores transactions and of payments made by the Accountant-General on behalf of the Superintending Engineer, allocated between Cash Account and Works Account headings on the lines indicated, is furnished monthly to the Accountant-General in

what is known as a "Cost Statement." This statistical statement is the basis of the Accountant-General's records of expenditure for the purpose of the Appropriation and the Commercial Accounts.

After check of the Cost Statement against the relative Cash and Stores Accounts and Chief Office Payment schedules, the Accountant-General proceeds to allocate indirect, miscellaneous and certain maintenance expenditure shown therein on the bases of direct expenditure included in the Statement, or of plant or other statistics, as the case may be. Thus, salaries (other than those in respect of contract work) are allocated on the basis of labour. Sick and holiday pay, travelling, tools and small stores are similarly allocated. Maintenance and repair of motor vehicle costs and small cash and warrant payments are allocated on the basis of total Cash Account expenditure. The sums paid to Railway Companies for maintaining Post Office wires and instruments are divided— $\frac{2}{5}$ ths to maintenance and $\frac{3}{5}$ ths to renewals, and these and all payments for wayleaves are apportioned between the services as far as possible on the basis of mileage and numbers used for telegraph and telephone purposes respectively. Storm repair costs are allocated $\frac{2}{3}$ rds to maintenance and $\frac{1}{3}$ rd to renewals. Freight and handling costs are apportioned on the basis of the stores handled (*i.e.*, issues plus recoveries) in respect of each statistical heading. The costs of maintaining overhead and underground plant, and of main line renewals are allocated on the basis of the mileage recorded in respect of each service. The costs of maintaining switchboards and other jointly-used apparatus are allocated on the basis of user.

Contract payments are made at Headquarters by the Contract Payments Branch of the Accountant-General's Department. Monthly schedules of these payments are prepared by the Accountant General and forwarded to the Superintending Engineers concerned for inclusion in their Cost Statements. These payments are allocated as accurately as possible between Vote, etc., in the A.G.D. before payment.

When the Accountant-General has so allocated the indirect and miscellaneous expenditure the combined totals (direct and indirect) are summarised in a monthly statement known as the Cost Statement Abstract. This Statement shows how much of the month's expenditure is chargeable to the several Vote and Capital headings. The information is required for the Commercial Accounts. The Cash Account

expenditure is also summarised monthly in a statement known as the Cash Account Abstract. In this statement are recorded the amounts shown by the Cost Statement allocations of expenditure to be due to the I, K and L subheads of the Vote, and to Telephone Capital. Stores when purchased are charged to the Vote, and an adjustment between Subhead K and Telephone Capital is made in the Book-keeping Branch of the Accountant-General's Department in respect of the Stores proper to Telephone Capital appearing in the Cost Statement Abstract.

When completed and balanced the Cash Account and Cost Statement Abstracts are sent to the Book-keeping Branch of the A.G.D., where they are posted to the Cash and Expense Account Ledgers respectively.

FINANCIAL CONTROL.

The Annual Estimates constitute the fundamental control of engineering expenditure. All proposals for expenditure during a given financial year have to be outlined by Superintending Engineers under the various Classes of Work. These proposals are submitted by them in the autumn of the preceding year. They are closely scrutinised and more or less revised at Headquarters. They go before the Secretary and the Accountant-General. The latter adds the Indirect Charges, and allocates the amounts to the various statistical headings. Eventually the Estimates are put before the Treasury. When authorised they form the engineering programme for the coming financial year, and the aim should be to work as closely to that programme as possible.

The subsequent control of expenditure is also under Classes of Work in relation to the Annual Estimates. It is with a view to Headquarter's control that the Engineer-in-Chief requires a monthly statement to be furnished to him by each Superintending Engineer of his commitments and expenditure to date under each Class of Work subdivided between labour (providing and recovering), net stores debits and net credits, and other charges. From these figures the Headquarters Sections responsible for expenditure under particular sub-divisions of maintenance or work are enabled to watch costs or progress of work district by district, and as a whole; and, in addition, the Engineer-in-Chief is able to obtain information as to the progress of expenditure as be-

tween Loan and Vote by a method which will be appreciated when we consider what are known as the "ratios" and their application.

From these returns a monthly statement of Commitment and Expenditure for the United Kingdom is prepared by the Engineer-in-Chief for the Accountant-General. The Accountant-General in turn prepares a monthly forecast of expenditure. This circulates to controlling officers. It shows the estimated expenditure under Vote and Capital up to the end of the coming month. These forecasts disclose the trend of expenditure, and enable any necessary action to be taken to prevent over or under-spending.

In addition to financial control in bulk, labour expenditure is controlled locally through the medium of running summaries of manhours in the case of all works costing over £200, and both locally and from Headquarters by the unit construction and unit maintenance costing systems. The Department's works order system of accounting which was in existence prior to 1921 did not afford proper control over engineering construction, seeing that the works order accounts did not show what each separate item of work had cost, or how much had been spent in erecting, say, a pole, or in running a mile of wire: nor did the system admit of comparison of one district with another in regard to the cost of work. The mere check of expenditure against estimate, even when there was approximate agreement between the two was not necessarily a criterion that economy had been observed in carrying out a work. This defect has been remedied by the introduction of the unit construction costing system, in which the manhour costs of specific operations are recorded and summarised section by section and district by district. Similar costings of maintenance work are also prepared. The preparation of these summaries is carried out in the district offices, and in the office of the Engineer-in-Chief; and the figures, which are prepared monthly, and also cumulatively in six-monthly periods, put into the hands of Superintending and Sectional Engineers a valuable analysis of the cost of specific maintenance and works operations (other than contract operations) whereby they are enabled to compare and investigate costs with a view to effecting economics, check and prevent waste, standardise work, equalise workmen's loads, and estimate on sound lines. Engineers are also furnished with summaries showing their indirect costs in relation to their labour expenditure, which enables them to detect any tendency to undue rise in such indirect expenditure

The check on indirect expenditure is quite as important as the check on labour costs.

It is a feature of these costing systems that the figures are summarised simultaneously with the summarising for the Cost Statement. Both summaries are derived from the same sources, and are in agreement with one another.

It may not be generally appreciated that the existence of the system of keeping running costs of manhours spent on specific works and the setting up of unit construction costing cleared the way for the abolition of the works order system of accounting in relation to the bulk of our work, under which system money costs in respect of each work were kept in the Superintending Engineer's Office and in the Accountant-General's Department, and the substitution therefor of a system of accounting under Classes of Work, or in bulk, which has simplified estimating and accounting in many respects. Labour is the most difficult item of expenditure to control, and this difficulty having been satisfactorily provided for in the running summary and in the costing system the attempt to control it by segregating costs on individual works could safely be abandoned, except in special cases.

Contracts of any size are all authorised and the payments recorded under Engineers' Orders. The charging of these costs to individual Works Orders is not necessary for control purposes. The control is by money costs.

Movements towards the general application of scientific methods in industrial management and administration are pioneered by studies of cost accounts. Costing has become an indispensable aid to economy and efficiency in our work.

As regards stores control, running records of stores demanded in relation to estimate are kept in respect of all main works; and any proposed departures from estimate have to come before the responsible Engineer and receive his authority. There is another element of stores control, however, which should not be overlooked, viz., the control of the magnitude of stocks of stores held in section stocks. A tendency to accumulate in these stocks quantities of stores in excess of requirements is one to be resisted at all times, but more particularly in times during which prices are falling. Stocks of a magnitude not justified by demands mean the useless locking up of capital. It is consequently very important that the tendency in respect of replenishment in

relation to consumption be closely watched. If the tendency is for the receipts to exceed the issues substantially, inquiry should be made as to whether the increases are justified. It is considered that a section stock should show normally an annual turnover of not less than five times the value of the stock on a two months' basis.

We have reviewed the main lines of district accounting necessary to provide the Accountant-General with the material with which to prepare the statutory Accounts, and of financial control locally and from Headquarters. We now consider the structure of the statutory Accounts.

THE APPROPRIATION ACCOUNT.

The aim of the Appropriation Account is to ensure that money expended has been applied to the uses for which it was voted.

As already explained the Appropriation Account is a comparison under each subhead of the Vote between the money voted and that actually spent during any financial year, with explanations of all material differences.

In view of this comparison it is regarded as of much importance that spending officers work as closely to their estimates as possible, *i.e.*, that they not only put in hand all the works for which they estimated, but that they put them in hand in sufficient time to enable the progress anticipated to be realised. It should be borne in mind that any Vote monies unexpended at the end of the financial year have to be surrendered to the Exchequer, and applied to the reduction of the National Debt. The cost necessary to complete a Vote work in a year subsequent to that in which completion was originally provided for, has to be re-voted.

The Parliamentary or Vote heads in full are as follow. You will notice that these heads denote the nature rather than the purpose of the expenditure.

- Subhead I. (1) Salaries, wages and allowances.
- (2) Travelling, subsistence allowances, removal expenses, etc.
- ,, K. Engineering materials (exclusive of materials supplied by works contractors under "inclusive" contracts), freight and cartage.

- Subhead L. (1) Maintenance of P.O. wires and instruments by railway companies.
- (2) Wayleaves.
- (3) Contract works (including materials where covered by contractor's price), repair and alteration of materials, repair of pathways and roadways, engineering office furniture and fittings, maintenance of cable ships.
- (4) Rent (including storage), water, light, heat, etc., rates on acquired wires, etc.
- (5) Royalties.
- (6) Incidental expenses, gratuities, payments on account of accidents, office expenses, advertising, losses by default and accident, etc.
- „ M. (1) Development of telephone system (repayment of annuities).
- (2) Purchase of plant, etc., of N.T. Co. (repayment of annuities).

Up to the year 1911, the Annual Estimate and the Appropriation Account made distinction between the telegraph and telephone services. Since that year, however, the distinction has been discontinued, the division being shown in an Appendix. Concurrently with the merging of the two services in one Estimate, the Commercial Accounts were set up, and it is for the Commercial Accounts that the apportionment of expenditure between the two services is now chiefly required.

THE COMMERCIAL ACCOUNTS.

A copy of the Commercial Accounts for the Telephone Service for the financial year 1922-3 is given at the end of this Paper.

The object of the Commercial Accounts is to bring together revenue and expenditure, so that on the one hand the taxpayer may know whether or not a profit on the services is being earned, and on the other that the public who use the services may know whether they are paying too much or too little for the facilities afforded. Put in another way, the aim of the Commercial Accounts is to ensure fair play between the taxpayer and the user of the services. In their absence

it would not be known whether the services were being run at a profit or a loss, and the consumer would not know whether he was having a fair deal. In these Accounts an attempt is made to reconcile these interests.

Commercial Accounts can be said to rest on a commercial basis only if every expense from which the telephone or telegraph user benefits, and which has not already been charged against him, is represented by a charge in the Telephone or Telegraph Accounts, respectively, whether it involves an immediate cash payment or not.

The Telegraph and Telephone Commercial Accounts of the Post Office were set up in their present general form in the financial year 1912-13. Separate Commercial Accounts are prepared by the Comptroller and Accountant-General for each service. Between 1912 and the financial year 1918-19 an attempt was made to keep separate trunk and local telephone accounts. Commencing with the year 1920-21, the attempt to keep these separate accounts was abandoned on the recommendation of the Departmental Committee on Telephone Rates, 1920. The Committee, in their report, referred to the growing difficulty of differentiating between the trunk and local services, and pointed out that if separate accounts were maintained they would have to be based to an increasing extent on estimates and apportionments, and would become more and more liable to error.

Certain supplementary accounts, known as Trading Accounts, are also prepared pursuant to Section 5 of the Exchequer and Audit Departments Act, 1921. Amongst these are Accounts in respect of Imperial Cable, Post Office Wireless and Continental Telephone Services, and Blackfriars Power Station.

The Telegraph Act, 1920, provides that statements of account in a form approved by the Treasury shall be furnished annually, showing as regards the telegraph and telephone services respectively the income and expenditure during the previous financial year. Pursuant thereto, the Post Office furnishes the following accounts in respect of both the telegraph and telephone services :—

Revenue Account,
Net Revenue Account,
Depreciation Account,
and Balance Sheet.

The Revenue and the Net Revenue Accounts may be said to correspond with the Trading Account and the Profit and Loss Account respectively in the case of commercial undertakings.

REVENUE ACCOUNT.

The Revenue Account of an undertaking is one that shows on one side the total income for a given period, and on the other side the expenditure which is properly chargeable against that income during the same period.

The Revenue Account which is prepared by the Department in respect of each of the services includes on the expenditure side administrative and operating expenses, the costs which have been incurred in maintaining the system, including supervision by headquarter and local engineering staffs, rent, rates, maintenance and repair of buildings, furniture, water, heating and lighting, and on the income side, receipts for transmission of telegrams less payments to cable companies and others, wire rentals and telegram monies in the case of the Telegraph Revenue Account; and in the case of the Telephone Account, receipts from subscriptions, rentals, call fees, etc., and in each case the value of the services rendered to other Government Departments. These statements are the equivalent of Trading Accounts, and the balance is carried to the Net Revenue Account—to the expenditure side if it be a minus balance, and to the income side if it be a balance in hand.

NET REVENUE ACCOUNT.

The Net Revenue Account, as already remarked, is equivalent to the Profit and Loss Account. On the expenditure side of the Department's Account are included the minus balance, if any, from the Revenue Account, the pension liability for the year, provision for depreciation during the year, and the surplus which is available for the payment of interest on outstanding capital: also the interest actually paid in respect of outstanding capital liabilities. On the income side are shown the gross profit, if any, from the Revenue Account, and the receipts from advertisements and royalties. The balance of the Net Revenue Account discloses whether there is a profit or a loss on the telegraph or telephone undertaking as a whole for the year.

BALANCE SHEET.

Each Revenue Account is supported by a Balance Sheet. A Balance Sheet shows the liabilities and assets of an undertaking. It tells us how the undertaking stands, whereas the Income and Expenditure Accounts indicate the direction in which the undertaking is going. On the debit side of the Department's Balance Sheets for the telegraphs and telephones the capital liability is entered, together with the amounts owing to sundry creditors, and the balance of revenue earned but not yet handed over to the Exchequer. On the credit or assets side appear the total prime cost of the plant as at the end of the last financial year, less net accrued depreciation, the value of the stores in stock, and amounts owing by sundry debtors; also any cash in hand.

It will have been noted that the cost of maintenance is shown on the expenditure side of the Revenue Account. Engineering expenditure on new construction is included in the credit or assets side of the Balance Sheet, being represented there by the entry "Total Prime Cost Value of Plant." (The Department does not publish Capital Accounts as such.) The cost of renewals and rearrangements appears in the Depreciation Account as a charge against the amount of accrued depreciation. The net amount of accrued depreciation is carried to the credit side of the Balance Sheet, as we have seen, as a deduction from the total prime cost value of the plant.

DEPRECIATION AND THE DEPRECIATION ACCOUNT.

As already mentioned, the Department prepares a Depreciation Account in respect of both the telegraph and telephone services.

A Depreciation Account is a statement of the amount set aside with a view to provide funds wherewith to replace plant at the end of its effective life.

Property which is to a greater or lesser degree subject to deterioration by the mere process of age, or what is familiarly described as "wear and tear," is known as "wasting assets," and it is necessary before the balance in any Profit and Loss Account can be properly arrived at to make provision for the gradual diminution in value of assets of this description. This diminution of value is known as "depreciation." The

term "expired capital outlay" is an exact definition of the meaning of the word "depreciation," as applied to wasting assets.

The amount to be charged against the Profit and Loss Account under the heading "depreciation" can never be arrived at with the same precision as can the other charges against revenue. It must always be a matter of estimate, but the estimate can in most cases be based on reliable data as a result of experience.

There are three main factors in calculating Depreciation :

- (i) the cost of providing the plant,
 - (ii) the anticipated life of the plant,
- and (iii) its residual value, *i.e.*, its estimated value at the end of its effective life.

These factors enter into the calculation of depreciation on Post Office plant. The difference between the prime cost value of plant and the residual value (which difference is sometimes referred to as the "depreciable" value) represents the amount which has to be accumulated during the period of life assigned to the plant in order to provide the necessary funds wherewith to replace the plant at the end of its life. The method of calculating depreciation adopted by the Department is what is known as the straight line method, which means that an equal proportion or percentage of the depreciable value, depending upon the number of years of life assigned to the plant, is charged annually to the Depreciation Fund.

As you are aware, an Inventory and Valuation of Post Office telegraph and telephone plant as at 31st March, 1912, was made by the Engineer-in-Chief. The valuation showed, under the main classes of plant, the values as new, the accrued depreciation, the effective lives, and the residual values. These figures were used to adjust the Capital Accounts and as a basis on which to determine the amount to be set aside annually for depreciation so far as the then existing plant was concerned.

The gross amounts credited annually to the Depreciation Fund depend upon the prime cost value of the existing plant, and this is of course governed by the net additions during the year to the various groups of plant. No Depreciation Funds,

as such, actually exist however. The depreciation liability is a liability of the Exchequer, which it discharges in finding annually the sums necessary to meet renewals, etc., of plant.

In the Commercial Accounts, renewal and rearrangement costs are shown as a charge against the amount of accrued depreciation, thus reducing the amount of the latter to the extent of the money which has been expended in renewing or restoring wasted assets. Special provision is made in assessing the annual amount in respect of depreciation for plant prematurely displaced through alterations, diversions, etc., and in respect of the higher present cost of such work and of renewals as compared with the amounts allowed for in the Depreciation Account in former years, when costs were lower. As regards the latter, in the absence of such special provision the Depreciation Fund would be unduly depleted, *i.e.*, it would have to finance renewals, etc., at present-day higher costs out of a fund which has been built up on the basis of lower costs.

Quarterly Commercial Accounts are prepared by the Accountant-General in respect of each of the main services. These compare the trading results quarter by quarter with estimate and afford comparisons of income with expenditure as the year progresses.

AUDITS.

Pursuant to Act of Parliament, the Appropriation Account has to be presented annually to the Exchequer and Audit Department and the Treasury. The Exchequer and Audit Department is a Department independent even of the Treasury, and is responsible to the House of Commons alone. That Department also audits the Post Office Commercial Accounts. These Accounts eventually come under the consideration of the Public Accounts Committee of the House of Commons. It is provided in the Exchequer and Audit Departments Act, 1921, that every Appropriation Account shall be examined by the Comptroller and Auditor General on behalf of the House of Commons, and that in the examination of such Accounts he shall satisfy himself that the money expended has been applied to the purpose or purposes for which the grants made by Parliament were intended to provide, and that the expenditure conforms to the authority which governs it.

ENGINEERING SALARIES.

Since the 1st April, 1921, engineering salaries have been charged to maintenance, construction, and renewals and rearrangements, telegraph and telephone, in proportion to the labour amounts charged directly to those sub-divisions and services. Prior to that year all engineering salaries, including clerical, were provided under Vote in the Estimates, and charged in the Commercial Accounts under maintenance, thus falling wholly upon the revenue of the year in which they were incurred. The practice of loading maintenance with the total cost of engineering salaries elicited strong criticism from the Select Committee of the House of Commons, which in 1921 considered the telephone service. Supervision salaries on contract work were charged to capital, whilst the salaries in respect of supervision of work carried out by the Department itself were not. The Capital and Depreciation Accounts were consequently unsound. Furthermore, the cost of maintenance was seriously inflated by reason of the addition to maintenance of the supervision cost of construction work. It was therefore decided to charge construction salaries to capital, thus spreading the expense over the life of the plant, and to meet renewal salaries in the same way as direct expenditure on renewals, viz., out of the Depreciation Fund. No adjustment of the Depreciation Account in respect of past years was, however, made. The advisability of charging a proportion of Headquarter's expenses (Secretary's Office, Accountant-General's Department, etc.) to capital was considered, but it was decided that as these expenses are more of a management nature they are a proper charge against revenue. The salary costs of supervising contract work are estimated at 5% of contract payments, and this amount is allocated between maintenance, renewals, etc., and construction on the basis of the contract expenditure under these three heads.

SEPARATING CAPITAL AND REVENUE
EXPENDITURE.

The necessity for separating construction, and renewal and rearrangement expenditure for the Commercial Accounts gives rise to certain difficulties in allocation in cases of works in which more than one of these heads is involved. The first consideration that arises is what are proper charges to capital. Capital in a commercial sense is regarded as the entire property of an undertaking which is devoted to the carrying

on of its affairs for the purpose of earning profits and of liquidating its liabilities. No charge is proper to capital which does not either increase or decrease the capital value of the plant. All expenditure therefore which does not fulfil this provision is a charge proper to revenue. In the Department's works accounting system however this principle is not carried to undue length, *e.g.*, when additional struts, stays and stay poles are fitted in connection with the blocking and re-setting of poles during maintenance operations the cost is allocated to maintenance provided that the work involved is comparatively small. On the other hand, additional struts, etc., which from an efficient maintenance point of view are found to be necessary when erecting additional wires on a line are allocated to the Class of Work under which the additional wires are being erected. The cost of shifting plant is not a proper charge to capital. Such cost is shown separately in preparing works estimates, and the expenditure incurred on such work has to be separately allocated with a view to its being charged wholly to revenue. In practice the cost of shifting goes through the accounts with the cost of recovering. As there are no recovered stores in shifting work, no question arises of crediting Capital Account, as in the case of recovered plant.

Another point to be noted in relation to this matter of keeping capital free of charges which are proper to revenue is that of stores recovered from, as distinct from stores surplus on, a work. In most works there are surplus stores; in many works there are also recovered stores. It is of great importance that in crediting stores to a work the credit delivery notes should distinguish surplus stores from actual recoveries. Surplus and actual stores transactions on works are shown separately in the Cost Statement. The necessity for this differentiation is in order that capital may be debited only in respect of stores actually used. Obviously no charges are due to capital in respect of stores which, though issued to a work, were not used, and were returned as surplus. For the same reason interruption cable when recovered should be included in the Cost Statement as surplus stores, and the labour cost of erecting it charged to "recovering," as capital is not in any way affected by the temporary use of such cable.

APPORTIONMENT OF EXTERNAL RENEWAL COSTS BETWEEN CAPITAL AND REVENUE.

Before outlining the method adopted in determining the charges proper to capital and revenue respectively in the case

of works in which both are involved, the procedure followed in regard to renewal of overhead and underground plant should be mentioned. If overhead and underground plant requiring renewal were always renewed by plant of similar value and capacity the whole cost of renewal would be a straight-forward charge against the Depreciation Account of the telegraph or telephone service as the case may be. In practice however renewals are sometimes, though not to any great extent, effected with plant of a more expensive kind (*e.g.*, copper for iron wire) or having greater capacity (*e.g.*, a medium for a light pole). In such cases it is obvious that the capital value of the plant has been increased by the difference in cost between the new and the old, and this difference in cost is the amount proper to be debited to the appropriate Capital Account. The amount of such renewal costs is not great. During the years ended 31st March, 1923 and 1924, the charges due to capital in this respect amounted to 5% and 4% respectively of the total cost of overhead and underground renewals.

APPORTIONMENT OF REARRANGEMENT, ETC., COSTS BETWEEN CAPITAL AND REVENUE BY USE OF "RATIOS."

As regards the Classes of Work in which the expenditure is liable to be of a joint capital and revenue character, *i.e.*, those in which in addition to new work, recoveries or rearrangements are effected, Capital Account has to be debited with the value of additional plant and credited with the value of any plant recovered, in other words, the debit to capital is the *net* value of the additional plant. Steps have therefore to be taken to ascertain the value at current prices as new of any plant recovered. The method of assessing this value is based upon the ratio, which is fairly constant on all works taken together, of the value as new of displaced plant (labour and materials) to the accountable value of the recovered stores.

The value as new of displaced plant is arrived at by multiplying the accountable value of the recovered stores by :—

- (a) A figure representing the ratio of accountable value to new value of the materials displaced, which gives the value of the *materials* as new.

- (b) A figure representing the ratio of accountable value of the materials displaced to the cash account costs of providing the plant displaced, which gives the cost (apart from materials) of putting the plant in position.

The charge to Capital is the value of the new plant less the value as new of the displaced plant ascertained as explained.

The charge to Vote is the balance of the net total cost of the work after the charge to Capital has been determined. It is made up of the value as new of the recovered plant, less the accountable value of the stores recovered, plus the cost of recovery, and of shifting (if any). This amount is carried to the Depreciation Account under the heading "Renewals etc., during the year," being charged against the amount which has been provided in the Depreciation Account to meet such renewal, etc., expenditure. These allocations are as far as possible made by the Accountant-General in bulk.

In view of the fluctuations in the costs of labour and materials, steps are taken from time to time to ascertain whether the ratio figures continue to furnish the correct allocation of expenditure as between Capital and Vote.

It is interesting to note that under the old system expenditure to Capital and Vote was allocated by the Accountant-General in fixed proportions, month by month, on each work, these proportions being based on the Works estimate figures, and representing the relation which Capital expenditure was expected to bear to Vote expenditure on a work as a whole; while under the present system capital is debited each month with the expenditure incurred on the Class of Work as a whole on the provision of new plant, and credited with the value as new of the displaced plant calculated on the actual recoveries accounted for during the month. As the superseded plant is not as a rule recovered until the new plant has been provided, expenditure under the present system is allocated almost wholly to capital in the earlier stages of a work, and the credit due to capital in respect of the displaced plant is not given until the final stages. This procedure is more correct than the old, seeing that the Capital Account more nearly represents the plant actually in position at any given time, and that the allocation is based on actual instead of estimated expenditure.

The figures of commitment and expenditure furnished

monthly to the Engineer-in-Chief by Superintending Engineers give the value of net recoveries of stores which have passed through the Cost Statement. From these the Engineer-in-Chief is able to watch expenditure as between Capital and Vote and compare it with Estimate; for by applying the ratios to the value of the recovered stores credited, the value as new of the recovered plant can be arrived at, and this, deducted from the cost of new plant, which is also shown, gives the net charge to Capital. The remainder of the net total cost is the charge to Vote. It may perhaps here be remarked that it is very important that as far as possible Engineers should maintain the balance between new works and rearrangements as provided in their annual Estimates. Any undue increase in the latter results in an under-charge to Capital and an over-charge to Vote.

COMMON SERVICE EXPENDITURE.

As regards premises, against each service a charge is made in the form of rent for the premises which it uses. This appears in the Revenue Account. The annual rental charge in respect of each Post Office-owned building is calculated as a percentage on prime cost to cover interest and depreciation. Nothing in respect of premises is included in the prime cost value of telegraph or telephone plant shown in the Balance Sheets. The Commercial Accounts contain a summarised Properties Account in respect of land and buildings. The Vote expenditure for sites is divisible between the postal and telegraph services only, the telephone share of the cost of sites being borne by Loan. As regards common service salaries and wages, returns are obtained periodically, showing the proportions proper to the postal, telegraph and telephone services respectively; and from these returns are calculated the amounts in respect of common service salaries and wages proper to each service. In the case of common service expenditure such as travelling, stores, incidental expenses, superannuation, electric light and power and stationery, after certain specific items of expenditure have been allocated to the particular services to which they solely relate, the residue is divided on the basis adopted in apportioning common service salaries and wages. Expenditure by the Office of Works in the maintenance of Crown premises is allocated on the same basis as that adopted in the allocation of rentals. Expenditure incurred by the Treasury in respect of contributions in lieu of local rates is allocated on the basis of the combined apportionment of rental values and rents

paid. Common service charges in respect of salaries and wages, travelling, incidentals, electric light and power and stationery are included in the amounts of the corresponding heads of the telegraph and telephone Revenue Accounts. The charge in respect of superannuation appears on the expenditure side of the Net Revenue Account.

SPARE WIRES.

The subject of spare wires will be briefly referred to. It is the practice to regard as working wires, whether working or not, all 40 lbs. bronze wires and all covered wires of 20 lbs. or less per mile, except wires in main cables, which, if spare, are recorded as such.

The common stock of spare wires is drawn upon by telegraphs or telephones as required, and is replenished by contributions from Vote (telegraph capital) or Loan. The records of spare wires which are kept enable a comparison to be made periodically between contributions from telegraphs and telephones to the cost of providing the common stock of spare wires, plus the contributions in the shape of working wires thrown spare, and the withdrawals from common stock by telegraphs and telephones in the shape of wires utilised for working circuits. Data are thus available to enable an adjustment to be made if necessary between the Plant and Depreciation Accounts of the telegraph and telephone Services. Engineers are relieved of the duty of accounting for spare wires utilised or thrown spare.

The foregoing outline may be a means of investing our accounting work with fresh interest to some, and of throwing new light upon the uses to which the Department's Accounts are put. The true value of Accounts, properly so called, lies in their accuracy as records of facts in receipt and expenditure, which can be verified and relied upon, and used as a guide to administration. The true usefulness of Accounts lies in giving life to our figures, either by controlling the conditions of which the figures are reflections, or by drawing the inferences which the figures should convey.

TELEPHONES—continued.

B.—NET REVENUE ACCOUNT for the Year ended 31 March, 1923.

1921-22.		EXPENDITURE	1922-23.		1921-22.		INCOME.	1922-23.	
£			£		£		£		£
789,235		Estimated Pension Liability for the year ...	743,421		4,157,633		Balance from Revenue Account ...		6,596,701
		(The amount of pensions paid in the year was £311,507.)			116,979		Advertisements, Royalties and sale of Directories . .		116,120
2,389,721		Provision for Depreciation during the year ...	2,684,031						
—		Arrears of Bonus paid to Post Office employees in respect of service with the Colours (House of Lords—Sutton v. Rex) ...							
1,095,656		Balance carried down ...	2,980,317						
4,274,612			6,712,821		4,274,612				6,712,821
1,654,788		Interest on Capital ...	2,041,308		1,095,656		Balance brought down ...		2,980,317
—		Surplus for the year ...	939,009		559,132		Deficit for the year ...		—
1,654,788			2,980,317		1,654,788				2,980,317

C.—DEPRECIATION ACCOUNT for the Year ended 31 March, 1923.

1921-22.		1922-23		1921-22.		1922-23.	
£	£	£	£	£		£	£
		Renewals, &c., during the year:—		13,556,197		Balance on 1 April, 1922 ...	12,909,426
		Supervision by Headquarter and Local Engineering Staff ...				Transfer from Net Revenue Account (see above), being the provision for Depreciation during the year ...	2,684,031
379,581			343,671				
1,273,447			1,099,897				
1,128,696			880,686				
9,721			16,020				
234,328			244,008				
3,025,773			2,584,288				
10,719			6,950				
—			228,000				
12,909,426			12,774,219				
15,945,918			15,593,457				

TELEPHONES—continued. D.—BALANCE SHEET at 31 March, 1923.

1921-22. £	LIABILITIES.	1922-23. £	1921-22. £	ASSETS.	1922-23. £
	CAPITAL LIABILITY at 31 March, 1923 :—			Value of Plant at prime cost at 31 March, 1922 ...	51,770,010
	Balance outstanding of Loans raised under the Telegraph Acts, 1892-1922, including the Telephone Transfer Acts, 1911	30,991,994	44,528,810	Deduct value of Plant taken over by Irish Free State...	753,000
25,741,226	Exchequer (Telephone) Bonds issued in part payment to the National Telephone Company	2,949,500		Net additions in the year 1922-23	6,788,155
3,290,600	Exchequer Advances, &c.	17,483,980	7,241,200		
16,875,174				Total prime cost value of Plant at 31 March, 1923. .	57,805,165
45,907,000	Less—Proportion of the above expended on Land and Buildings included in the Post Office Land and Buildings Account	51,425,474	51,770,010	Less—Balance at credit of Depreciation Account ...	12,774,219
		3,280,700	12,909,426		
2,969,074	Sundry Creditors for Stores	48,144,774	38,860,584	Value of Stores in Stock ...	3,202,119
	Advance Subscriptions and Sundry Creditors :—	88,291	3,979,549	Sundry Debtors for outstanding Revenue	1,860,367
	£ Value of Services to be rendered in 1923-24	122,402	1,903,334		
	90,796 Sundry Creditors for Revenue	83,188		£ Cash in hand—	£
	1,444,511 Subscribers for Deposits	1,677,439		266,102 On Capital Account	—
	14,488 Due to Foreign Post Offices	40,116		— On Revenue Account	37,127
1,680,048	Exchequer for accrued Revenue not yet paid over	651,788	820,613	554,511 On Account of Subscribers' Deposits	677,439
769,097	Amount drawn from general Post Office Balances in excess of Telephone Revenue received in the year ...	—			714,566
8,700					
45,564,080		50,807,998	45,564,080		50,807,998

General Post Office,
22 February, 1924.

I certify that the whole of the Post Office Telephone Plant has, during the year ended 31 March, 1923, been fully maintained in good and efficient working condition and repair.

I certify the sum of £3,202,119 appearing above, as the value of the Stores in Stock at 31 March, 1923.

H. Sparkes, Acting Controller, P.O. Stores Department.

H. N. Bunbury,
Comptroller and Accountant-General.

T. F. Purves, Engineer-in-Chief.