

**THE INSTITUTION OF
POST OFFICE ELECTRICAL ENGINEERS**

District Accounting

BY
T. FEWSTER.

A PAPER

*Read before the Northern Centre of the Institution on
the 18th November, 1931.*

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DISTRICT ACCOUNTING.

A speaker at a meeting of the Institute of Public Administration during the past summer is reported to have made a statement to the effect that the amount of duplication in accounting processes in a Government Department was heartbreaking. Another speaker is credited with the statement that Government Departments were weak in accounting, but strong in auditing. Both statements, torn from their context, and probably made misleading thereby, received considerable prominence in the public press as indicating the lack of commercial accounting capacity in Government Departments generally. So far as the Engineering Department of the Post Office is concerned, it must be admitted that to the uninitiated many of the accounting practices seem complicated and duplicated, and that it is often years before this impression is eradicated from the mind of the new entrant. It is hoped, however, to show that Post Office Engineering Department accounting is not haphazard or duplicated; but that it deals with large scale expenditure in a manner well devised to ensure the prompt execution of work with adequate, but not over-elaborated, safeguards against loss of money or material.

Everyone in a Superintending Engineer's District comes into contact with Departmental accounting at some stage of his work, and a clear understanding of the accounting methods and the reasons for them is therefore desirable in the interests of both the work and the individual. It is necessary that the individual, be he Engineer, Inspector, Workman or Clerk, should realise that the accounting requirements are not vexatious restrictions to hinder him in his more immediate task; but are essential steps in making his task more valuable and fruitful. To the foreman of an overhead gang the immediate task is to erect his line of poles and wires soundly and expeditiously, and he must do that to the best of his ability. Equally, however, must he give of his best ability in accurately accounting for the time which has been spent in the primary task of erecting the poles, etc., in order that correct information of the cost and progress of the work may be immediately available for his Engineer, and for the compilation of the accounting and costing returns furnished to Headquarters. So also with every officer in the Depart-

ment, the primary tasks must be efficiently performed ; but the secondary tasks must not be despised because their immediate effects are not perceptible. Failure to observe accounting regulations causes friction at some point in the organisation, and begets the little queries which cause vexation to the man who thinks that, having carried out his immediate task satisfactorily, he should not be bothered with trivialities. These apparent trivialities are another's *immediate task*, and must be right if that other is also to do a satisfactory job. The primary voucher is the keystone of the accounting structure, and it is essential that as much intelligence as possible should be given by all grades to the correct preparation and handling of this important instrument. This is particularly true of progress reports and diary pages. The whole system of costing control depends upon the accuracy of the information furnished by the workman in his daily time-sheet ; and care given to preparation by the workman and to checking by the Inspector will be amply repaid by freedom from requests for explanations at a later date.

The present paper is an attempt to link up the salient features of District accounting in order to indicate to the different grades what is the object of the information they are called upon to furnish day by day in their own work. It is not proposed to quote regulations in support of the text, except in so far as they may be necessary as a key to the main idea of the paper. Similarly, it is not proposed to quote the numbers and titles of all the forms used in the various stages of accounting ; but to refer only to those necessary to outline the accounting methods.

Scope of Accounting in Districts.

The Engineering Department is not a revenue-collecting department, and is not responsible for preparing Trading and Commercial accounts of its operations. Speaking broadly, the accounting is confined to the sphere commonly referred to as Works accounting. It is laid down that the Superintending Engineer of a District is responsible to the Engineer-in-Chief for :—

The satisfactory and economical execution of engineering services, and the administration and control of all funds allotted to him.

Accounting for expenditure incurred on the maintenance of plant and on works of construction, renewal and rearrange-

ment; and cost accounting and plant statistics so far as his District is concerned.

The general accuracy of all bills and accounts put forward for payment, their completeness in every particular, and seeing that no portion of any amount certified for has been previously paid; also that all bills due are put forward without delay.

The proper care, appropriation and safe custody of all plant, stores and tools and materials received, and seeing that the records of receipt and issue are kept as laid down in regulations.

Administration and Control of Funds.

Control in Bulk.

Annual Estimates.

Each year in October the Superintending Engineer prepares and forwards to Headquarters his annual estimates for the financial year commencing in the following April. These estimates cover the anticipated programme of works of construction, renewal, rearrangement and maintenance of all engineering plant required in connection with P.O. services. The estimates are in respect of direct engineering (Labour, Stores and Contracts) expenditure only. No estimates are put forward for indirect expenditure such as Salaries, Travelling, Sick and Holiday Pay, Freight and Cartage, Tools, Motors, etc. "Direct" expenditure may be defined as that entailed in the actual carrying out of engineering work, as distinct from expenditure on administrative and associated work and services, which are classed as "Indirect."

Allotment of Funds.

On the basis of the Annual Estimates, the Engineer-in-Chief allots to each Superintending Engineer his due proportion, under each head of Direct Expenditure of the total sums placed at his disposal by the Treasury through the Secretary. The bulk control of the District Funds is dealt with under the headings of Allotment, Commitment and Expenditure Returns. The terms "Allotment" and "Commitment" are frequently confused with each other, and it may not be out of place here to explain that the Allotment is the definite sum of money *allotted* to a District for carrying out works under specific heads of expenditure, *e.g.*, a District is allotted a sum of £10,000 for C.L. works, £5,000 for C.I.

works, and so on. Commitment, on the other hand, is not a definite figure, but is an *estimate* based on estimates which have been authorised as a charge against the current year's Allotment. The Commitment may fall short of the Allotment and may also exceed it, because estimates are authorised

ENGINEERING ESTIMATES 193 -193 . T.E. 282a.

The Engineer-in-Chief, _____ District.
 (Accounts Section.)
 The following summary of Expenditure in respect of the Classes of Work included in the Engineering Programme 193 -193 , for the month of _____ 193 , is submitted.

Class of Work		For the Month							To Date	
		Stores		Labour	Chief Office Payments	Other Cash Payments	Total	Labour	Total	
No.	Index	Debits (Net)	Credits (Net)							£
1	F 1									
2	F 2.									
3	F. 3.									
4	S.									
5	RM.									
6	RL.									
7	RI.									
8	RR.									
	●			Providing	Recovering					
				£	£					
9	QM.									
10	QX.									
11	T.									
12	TGW.									
13	TPW.									
14	TP.									
15	TJ.									
16	NC.									
17	NP.									
18	K.									
19	MU.									
20	CS Intl.									
21	CS. Extl.									
22	CL									
23	CL									
24	CR.									
25	K.									
26	V									
TOTAL				Total Labour						
Wires maintained by Railway Companies } Maintenance Private Wayleaves } Wayleaves										
TOTAL										

Superintending Engineer

FIG. 1.

as a whole in the current financial year, although part of the expenditure may fall into the next financial year. Normally, however, Expenditure, which is also a definite figure, must not exceed the Allotment, and any case where the Allotment is likely to prove insufficient to cover the work required in the current financial year must be reported to Headquarters at an early stage in order that steps may be taken to secure additional funds or to consider the question of suspending part of the year's programme under the head or class of work affected. For this reason a very close check is kept month by month on the expenditure in bulk. The key form in this control is T.E.282A. (Fig. 1). This form shows all the headings or classes of work under which allotments are made, and also shows the details of expenditure (taken from the Cost Statement—dealt with later) under each for the month, and the Totals to Date, for ready comparison with the allotments and commitments shown on form T.E.282.

Some Districts have systems of local control of expenditure. In the Northern District, Sectional allotments are issued, and a form of graphical control is used for keeping the Superintending Engineer and the Sectional Engineers advised of the progress of commitment and expenditure in the Sections. (Fig. 2).

Control in Detail.

Control in detail falls under two heads of treatment; that for Maintenance Expenditure, and that for Works Expenditure.

Maintenance Expenditure.

There are three divisions of Maintenance Expenditure, apart from Storm Repairs and Renewals, which are treated as works for control purposes; and these divisions are:—

F₁—Telegraph and Telephone.

F₂—Postal and General Services.

F₃—Postal Apparatus—Construction and Renewal.

Annual Estimates are prepared for each of these on the basis of the previous year's expenditure, plus or minus any allowance for special features. The details for the Annual Estimates for Maintenance F₁ are entered monthly on a running summary (T.E.232) from the Cost Statement for the twelve months September to August in each year. Maintenance F₂ and Maintenance F₃ Allotments are generally of

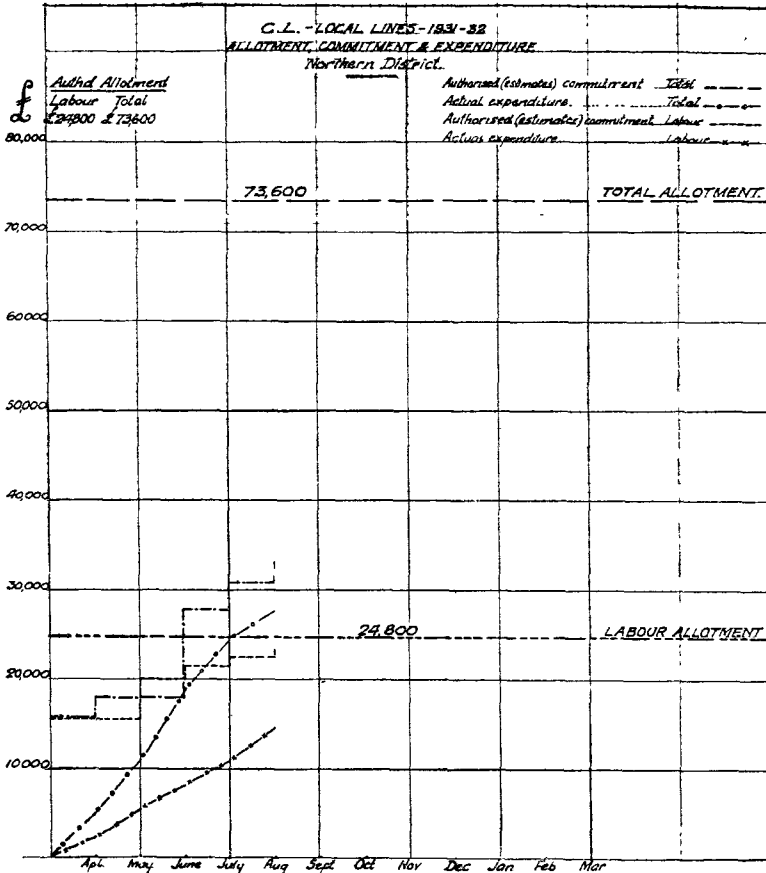


FIG. 2.

small amount and are not subjected to the same analytical control as is applied in the case of Maintenance F1, where the Allotment for a District may vary from £40,000 to £80,000 or more. In addition to the money allotment in Labour and Total, the F1 Allotment quotes the Labour Allotment in manhours for each main head of plant to be maintained; i.e., Overhead Wires, Underground Wires, Telegraphs, Subscribers' Apparatus, Exchange Equipment, etc., and a monthly and cumulative check on the expenditure of manhours under each head is made. Form T.E.378 is the

key form in controlling FI expenditure. (Fig. 3). Here again graphical control is extremely useful in giving a clear picture of the progress of the Expenditure against the Allotment. Additional funds for Maintenance are extremely difficult to secure, and considerable care is necessary to ensure that essential day-to-day work may not have to be stopped

(To Engineer-in-Chief Accounts)

T.E. 378.

ANALYSIS OF MAINTENANCE EXPENDITURE.

District		Section		Month ended		198		(Nr of Weeks)	
Symbol	Division of Plant &c.	Description of Unit	Number of Units	Total Number of Manhours		Average Manhours per Unit per Annum (Workmen and Youths)	Cost		Total Cost
				Youths in Training	Workmen and Youths		Wages and Labour £	Stores and other Charges £	
	Overhead —								
OM	MAIN LINES (including Wire Cut and Regulated on Works)	Mile of Single Wire		—	.				
OL	LOCAL LINES ()	"		—					
	Underground —								
UM	MAIN CABLES	"		—					
UL	LOCAL CABLES	"		—					
UT	Telegraph Apparatus —	Instr. or Set							
IT	Sounders, A B.C., D.P.S. Single Needles	"							
IG	Other Telegraph Apparatus	"							
	Subscribers' Apparatus—Manual —								
	EXCHANGES WITH EQUIPPED CAPACITY FOR —								
	Less than 300 D.E. Lines—								
ID 1	Cord or Cordless Switchboards	Telephone							
ID 2	Other Telephone Installations	"							
	300—2000 D.E. Lines—								
ID 3	Cord or Cordless Switchboards	"							
ID 4	Other Telephone Installations	"							
	Over 2000 D.E. Lines—								
ID 5	Cord or Cordless Switchboards	"							
ID 6	Other Telephone Installations	"							
	Subscribers' Apparatus—Automatic —								
	EXCHANGES WITH EQUIPPED CAPACITY FOR —								

FIG. 3.

owing to the exhaustion of funds before the end of the financial year. Fig. 4 shows in skeleton form the progress of the hours worked, from the Workman's Diary Page to the Analysis of Maintenance form T.E.378. Another form (T.E.380) is used for indicating to Sectional Engineers their manhour rate per unit for each sub-division of maintenance for each month as compared with the rates for other sections, the District average and the latest known Provincial average. The form shows the number of units maintained, the number of manhours expended for the month, and the rate per unit per annum. A Sectional Engineer is enabled to see at a glance where his maintenance costs are in excess, and can take any steps necessary to effect improvement. It is chiefly under Labour figures that excesses are likely to occur in regard to Maintenance Expenditure; stores and other charges giving

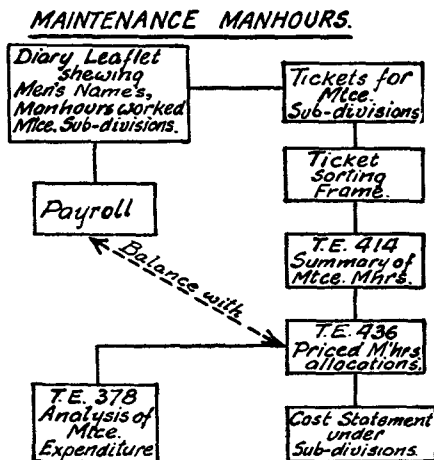


FIG. 4.

very little cause for anxiety. Stores, etc., charges are accounted for under each heading on form T.E.378; but these items will be dealt with under Stores Accounting, as there is no special treatment for maintenance. The "Unit" figures used in the cost comparisons are those kept in the "Running Summaries of Mileage and Apparatus" by the Plant Record Duty. The records are posted from forms T.E.650 (also used for Fault Statistics), Works Orders and Advice Notes, which will be dealt with later. In order that he may be aware how his District stands in regard to Maintenance Costs, each Superintending Engineer is furnished by the Engineer-in-Chief with Monthly and Six-monthly Comparative Statistics for each District in the country, for the Provinces as a whole, and for the United Kingdom as a whole. Armed with these and with the figures shown on form T.E.380 for each Section of his own District, he can introduce effective checks to excessive expenditure under any head of maintenance.

In addition to the general control of each sub-division already referred to, a special form of control is applied to the maintenance of Exchange Plant. This is known as the "Work Unit" system. A "Work Unit" is based on the amount of exchange equipment which normally would require 10 manhours per annum to maintain. A calculated value in terms of "Work Units" is given to each item of equipment in service at each exchange—manual and automatic. The

numbers of items in service are counted six-monthly, and the number of " Work Units " in each exchange is calculated. On the basis of 10 manhours per " Work Unit " the number of manhours per annum allowable for the maintenance of each exchange is then ascertained. The information required for comparison of the actual manhours expended as against those allowable under the " Work Unit " system is thrown up in the ordinary accounting process from the " tickets " prepared from the Workmen's Diary Leaflets for compiling the man-hour costs for each sub-division of Maintenance F1. (Fig. 5).

<input type="radio"/>	<u>Allocation.</u> <i>Om</i>	<u>Hours Worked.</u> <i>6½</i>
<input type="radio"/>	<u>Allocation.</u> <i>Uk</i>	<u>Hours Worked.</u> <i>6</i>
<input type="radio"/>	<u>Allocation.</u> <i>Sg 5</i>	<u>Hours Worked.</u> <i>4½</i>
<input type="radio"/>	<u>Allocation.</u> <i>Jf. 2</i> <i>No. Shields</i>	<u>Hours Worked.</u> <i>9</i>

FIG. 5.

The name of the exchange concerned is shown on all I.F. " tickets," which are again passed through the " sorting-frame " to obtain the manhour costs for each exchange. The information thus obtained is of great use in deciding on staffing requirements, and for indicating the exact cost of exchange maintenance. Here again the Engineer-in-Chief issues Monthly Exchange Costs for the guidance of Superintending Engineers.

Works Expenditure.

The expenditure on " Works " also falls into three sub-divisions for accounting treatment; the sub-divisions being Advice Notes, Small Works Orders and Main Works Orders.

Advice Notes.

The chief business of the Engineering Department is the provision of telephone service; that is providing for the use

of subscribers a telephone, a line, and an exchange end. Naturally, transactions of so numerous a character require machinery as free as possible from steps likely to cause delay in earning revenue or annoyance to the prospective subscriber. The Advice Note is the medium used for this purpose. Its chief feature is that it is a form of Works Order which normally does not require the preparation of an estimate. As soon as the Contract Department of the District Manager's Office has secured the contract for the provision (or cessation, or removal, as the case may be) of a subscriber's installation, an Advice Note is prepared in quadruplicate and copies are issued to all concerned in the provision of the service. The "B" copy of the A.N. is forwarded to the Sectional Engineer in whose area the subscriber is situated. In the Section Office Works Instruction forms are typed in quadruplicate for routing to the Exchange Apparatus Fitter, the Subscriber's Apparatus Fitter, the Overhead Foreman and the Underground Foreman, who will each carry out his portion of the work. Stores are drawn on requisitions specially simplified to allow of facilitating subscribers' works, and the Foremen's Daily Progress Reports under "O," "U" and "I" form the record of expenditure by which the Inspector (and at a later stage the Chief Inspector) judges as to whether the work has been carried out economically.

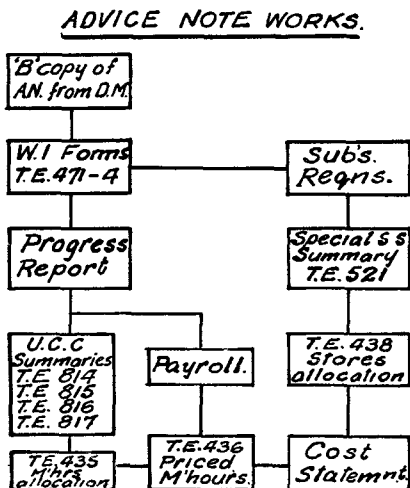


FIG. 6.

A special form of comparative check of costs for subscribers' works (normally carried out under class of work "CS") is provided in the Unit Construction Costs System, whereby the work of each foreman on overhead and underground is compared with standard rates per unit of plant constructed, on the basis of his performance on all subscribers' works for a month. These comparative returns are known as "Performance Ratings"; the stages leading up to their preparation being shown in Fig. 6. T.E.816 shown in Fig. 7 gives an idea of the basis of the comparison, and the Performance Rating is the percentage rating on standard. The forms

T.E. 816.

POST OFFICE ENGINEERING DEPARTMENT.

PERFORMANCE RATING SCHEDULE.

UNDERGROUND.

Main and Small Works.
Subscribers' Works.

Section	District	Month Ended	198	
Item	Units	Manhours	Standard Rate	Manhours Calculated at Standard Rate.
PROVIDING.				
Trench Excavated and Filled in, Carriageway			2 1	
" " " " Footway			1 0	
Pipes Laid			24	
" Rodded			10	
Troughing and W I Pipe Laid			53	
Pipes or Cable Bonded			58	
Jointing Chambers Built, Footway, Group 1			9 6	
" " " " " " 2			15	
" " " " " " 3			27	
" " " " C'way " 1			25	
" " " " " " 2			26	
" " " " Altered			8 8	
Buried Joint Holes Opened and Closed			3 2	
Cleaning and Drying Manholes			2 3	
Cable Drawn In, Group 1			143	
" " " " 2			199	
" " " " 3			352	
Wires Jointed in Cable (Soldered Prs) Gp 1			22	
" " " " " " 2			20	
" " " " " " 3			18	
" " " " (Unsoldered Prs) " 1			17	
" " " " " " 2			11	
" " " " " " 3			12	
Wires Jointed in C D Head			28	
Wires Terminated			25	
Cable Plumbed			2 5	
Cable Pressure Tested			5 5	
C D Plugs or Blocks Terminal Fixed			6 1	
Cabling on Walls, Group 1			45	
" " " " 2			79	
" " " " 3			88	
Leading-in			8 4	
Loading Coils, Installed			10	
" " " " Joined up			42	
Making Solid Plugs for Main Cable			17	
Cable Tested			17	
Other Items			98% ^o	
Effect Time (less O I) Prov				
RECOVERING.				

FIG. 7.

(T.E.817—Fig. 8) are normally grouped under Inspectors' names so as to give the Sectional Engineer a guide as to the part supervision plays in the results obtained by the different gangs, and they show the Foremen's performances over a period of months.

T.E. 817

POST OFFICE ENGINEERING DEPARTMENT.

FOREMAN'S PERFORMANCE RATING SCHEDULE.
SUBSCRIBERS' & RENTERS' WORKS—C.S.—OVERHEAD

Name of Foreman.....			Inspector.....						
Section.....			District.....						
Month	EFFECTIVE			INEFFECTIVE			TOTAL		
	Manhours		%	Manhours		%	Manhours		%
	Actual	Calculated		Actual	Calculated		Actual	Calculated	

FIG. 8.

Works Orders.

In the cases of both Small and Main Works Orders an estimate is necessary. From an accounting point of view the essentials of an estimate are that it shall show the following :—

- (a) The particulars of plant to be provided, recovered or shifted, in order that plant records may be amended, and quantities of wire, cable, etc., checked.
- (b) A Stores Sheet showing the quantities of material to be requisitioned, and/or returned.
- (c) A Labour Sheet showing the estimated manhours for dealing with each unit of plant to be fixed, recovered or shifted, together with the estimated

Ineffective Time for Travelling, Dealing with Stores, Supervision, etc., plus any allowance necessary for small purchases or incidental charges. " Ineffective Time " is a somewhat misleading term ; but it is used to cover time spent on items of work associated with preparatory and supervisory work as distinct from time spent in erecting, recovering or shifting definite items of engineering plant.

- (d) Particulars of any part of the work to be carried out by Contractors.

The particulars furnished under (a) will generally decide under what class of work the estimate will be authorised.

Small Works.

Most estimates, of course, will not necessarily contain all the particulars mentioned under the headings (a) to (d), and by far the greater proportion of them are simple enough to embody all the details required on one or two forms. These fall under the heading of Small Works, and the procedure in their case is almost as simple as that for Advice Notes. Most of the individual works are in the nature of simple day-to-day provision, recovery or alteration of plant. The limit deciding whether a work is Small or Main is £200, including certain percentages for Indirect (or Oncost) Charges. The majority of Small Works fall within the limits of the Sectional Engineers' devolved authority, and are simply authorised by the initials of the Sectional Engineer. Others require the authority of the Superintending Engineer, but once this is given the procedure follows the same lines as in the case of those authorised by the Sectional Engineer. The authorising officer normally indicates under what class of work the authority should be issued. This, together with the estimate number, then becomes the Works Order No., thus:—CL. 1156/31. Each estimate as it is authorised is entered on a form T.E.626 under the appropriate class of work heading and month concerned, in order that its progress to completion and closing can be kept under review. Works Instruction forms T.E.191 are issued to the Foremen who will carry out the work, and a form T.E.493 is attached to ensure that all records shall have attention as the work proceeds, and on closing. No Stores Sheet is kept ; the numbers of requisitions and delivery notes referring being entered against the various

items on the estimate. The Inspector's copies of the daily progress reports are associated with the Works Order, and the total manhours are entered on the Works Instruction Forms (T.E.191) for final comparison with the estimate and for check by the Chief Inspector on closing the Order. The Small Works are subject to monthly snap checks to ensure that stores and other matters are being dealt with properly. So far as Unit Costing is concerned the same procedure is followed as for Main Works Orders and this will be dealt with later.

In addition to its use as a Register of Small Works, the form T.E.626 shows month by month the totals of Commitment under each class of work for the Small Works, and form T.E.281 (S.E.'s Office Record of Allotment, Commitment and Expenditure) is posted therefrom.

Main Works.

Estimates for works exceeding £200 (and for certain special classes of work such as Repayment services (H1 sub-head), Pneumatic Tubes for Newspapers (NP) and others of special character) are called Main Works. There are different varieties of Main Works orders, inasmuch as some are authorised by the Engineer-in-Chief, some by the Superintending Engineer up to certain limits, and some are under specific numbers, and others under the Class of Work. Illustrations will make this more clear.

Authorities issued by the Engineer-in-Chief.

Form T.E.115 is issued by the Engineer-in-Chief, and the W.O. may be quoted thus: 67 CL/31. The number before the Class of Work indicates that all charges to this W.O. will be specifically indicated in the Cost Statement, so that its definite cost will be known to the Accountant General. To enable this to be done, forms T.E.436 for Manhours and Labour Costs in £ s. d., T.E.437 for Contractors' Payments (or Incidental Bills), T.E.438 for Stores Dr. & Cr. are prepared when the W.O. is authorised and sent to the Engineer. The estimated costs are shown on the forms mentioned, so that the Superintending Engineer's posting officers may keep check on any possible excesses.

Works Orders may be issued by the Engineer-in-Chief showing the W.O. No. as CL.67/31. This indicates that the charges for the work will pass into the Cost Statement

simply under the general head of CL works, and special forms are not required. The No. 67 is the Estimate No. by which the work is identified; and the treatment is the same as for orders authorised by the S.E. under "Classes of Work." Fig. 9 shows in skeleton form the foregoing. Forms T.E.78A

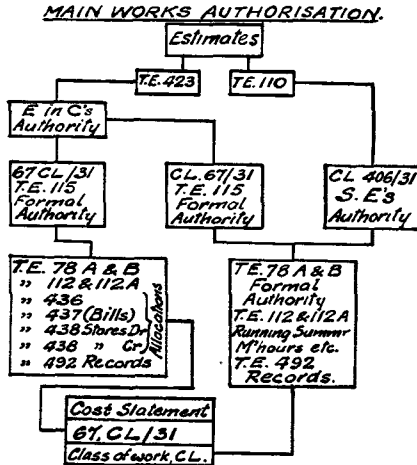


FIG. 9.

and B are issued for all Main Works Orders, and forms T.E.112, 112A and 114 are issued as required. Form T.E.78A is a formal authorisation of the amounts estimated for under Cash and Stores, and quotes the total manhours authorised. A space is inset showing the amounts to be posted in the Commitment Record T.E.281. Form T.E.112 is used to keep a check on the main items of labour as the work progresses; these items being selected by the Chief Inspector concerned when the W.O. authority is received. The posting of form T.E. 112 will receive attention later. Form T.E. 112A is for explanations only, and is not an accounting form.

In order that all records affected during the progress of the work and on its completion shall be posted, form T.E.492 covering all requirements is fixed to the cover or jacket enclosing each Main Works Order (Superintending Engineer's Office Copies).

On receipt of forms T.E.78, etc., in the Section Office, the W.O. clerk associates them with the Section copy of the

estimate and form T.E.493 for records, and issues W.I. forms (T.E.160), and the whole file then becomes the Sectional Engineer's Works Order. A Stores Sheet, form T.E.118, showing the authorised issues and recoveries of stores is prepared for posting stores transactions as they take place. The W.I. forms are issued by the Inspector to the Foreman (or Foremen) who will carry out the work, along with any necessary details of the job. Fig. 10 indicates the steps from the

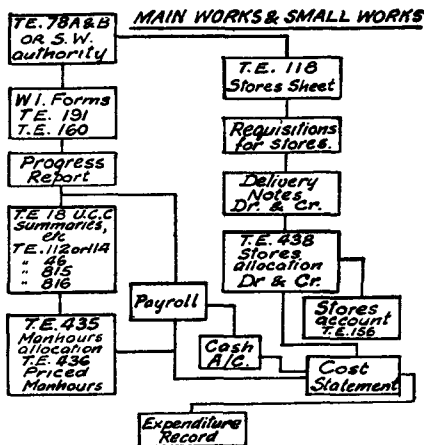


FIG. 10.

authority to the cost statement. So far as Labour is concerned the Progress Reports pass through a slightly different treatment from that mentioned for Advice Notes. Form T.E.18 takes the place of T.E.814, and every item of work is associated with its respective manhours. One form T.E.18 (Fig. 11) is used for each Class of Work for Small Works, and one for each Main Work; this last arrangement being necessary to provide the weekly summary figures for carrying to form T.E.112 already mentioned. Another form, not hitherto mentioned, T.E.46, is also posted from the T.E.18 weekly, *via* T.E.112. The object of this form T.E.46 is to indicate to the Sectional Engineer the weekly progress of Manhours Expended as against Manhours Authorised, for each Main Works Order, so that a timely check may be applied to avoid excess expenditure, and also to enable T.E.155 (Departure from Estimate) to be prepared where

are examined critically each week for abnormal costs in any particular item, and a form T.E.450 is issued to the Sectional Engineer giving full details in order that he may investigate the abnormalities. These forms T.E.450 are sent to the Sectional Engineer for his guidance, and are not intended as queries on behalf of the Superintending Engineer.

In addition to this detailed form of control for Main Works and Subscribers' Works, there is control in bulk in the form of performance ratings, referred to earlier. Fig. 6 shows the stages of the accounting procedure which lead up to this information, and Fig. 7 shows the basis of comparison of performance as against standard rates. The final performance rating for overhead and underground for (a) Main and Small Works, and (b) Subscribers' Works, serve as a bulk guide to the Sectional Engineer as to his costs for external construction work. Formerly, the costs were shown item by item in cumulative form for six monthly periods, but the figures were not conclusive till the comparative figures for the whole country for the six months had been compiled, and issued to the Districts. The performance ratings give a comparative figure for each month, and enable the Sectional Engineer to initiate detailed investigation at a date not remote from the execution of the work. The performance ratings are prompt and salutary, and, intelligently operated, give considerable control over construction costs. The forms T.E.18 and 814 give all the information required for detailed examination of a performance rating not considered satisfactory, and the Sectional Engineer can have these forms for scrutiny, or can call for any information from them to enable him to investigate the causes. The Engineer-in-Chief issues monthly and six-monthly comparative statistics for construction costs, as for maintenance costs, in order that Superintending Engineers may exercise control in the light of the latest available information as to what is being achieved elsewhere in the country.

Internal work, other than "CS," (that is, exchange works, telegraph work, electric light work, etc.) is not dealt with on a unit cost basis; being entered on form T.E.114 to show the expenditure of effective and ineffective manhours as against estimated manhours. "CS" works internal—that is, the provision of internal plant in subscribers' premises—are entered on forms T.E.18 under certain specified items; (e.g., telephone, switchboard, etc.) and carried thence through summaries T.E.778 to forms T.E.102, which are

compiled monthly, and cumulatively for six monthly periods. These forms T.E.102 are circulated monthly to Sectional Engineers as a bulk guide as to the progress of Subscribers' Fitting Costs. Here again detailed information is available when costs are not considered satisfactory.

Cash Accounting.

Wages and Labour.

So far the treatment of expenditure has dealt only with the manhour aspect of labour. It has been shown that the manhours as allocated are balanced against the manhours paid for on the payroll. It is hardly necessary to explain the make-up of the payroll; but a few words should perhaps be said in regard to the "Average Rate." The clerical cost of identifying for each Works Order or Class of Work the hourly rates of each member of a gang or each maintenance man would be prohibitive in this Department where hundreds of small jobs are dealt with every week. To simplify accounting the "Manhour" has been fixed as the unit of cost for posting to jobs. The total payroll in £ s. d. is divided by the total manhours worked by all working grades and the resultant rate per hour (rounded up or down to the nearest one eighth of one penny) is known as the "Average Rate." This rate is calculated each Cash Account Month, and all postings of money values of manhours to the Cost Statement through forms T.E.436 are at the Average Rate. Any difference due to the use of the rounded figure is posted to a suspense account in the Cost Statement headed "Differences due to use of Average Rate."

Wages are made up to Friday each week, and include time at full rate up to such Friday; but extra duty and allowances are paid a week in arrear, and deductions for sickness, etc., are also in arrear. Wages are paid by cash by the Sectional Engineer or by postal draft from the Superintending Engineer's Office. The Sectional Engineer sends in a weekly Balance Sheet (T.E.70) taking debit for the cash he receives from the Superintending Engineer, for Postal Drafts issued on his behalf, for deductions from pay, and for miscellaneous receipts, stores sold, etc., and credit for the sums disbursed in paying wages, travelling and subsistence, and bills for various purchases and contracts. Wages are paid on Friday in each week and the Sectional Engineer makes up his Weekly Cash Account (T.E.70) for all disburse-

ments up to Friday, and forwards it to reach the Superintending Engineer's Office on Monday morning. The form T.E.70 is also the Sectional Engineer's Cash Application covering his estimated cash requirements for the following week. Immediately on receipt in the Superintending Engineer's Office the form T.E.70 is subjected to a rigid check to ensure that all transactions have been properly brought to account, and that the cash balances brought forward and carried forward are correct. Care is taken to ensure that the carried forward Cash Balance and the Cash Application are not appreciably above normal without an adequate reason being furnished. All bills are examined for correctness of receipt, the Sectional Engineer's certificate, and the "Appropriation."

It should, perhaps, be explained at this stage what is meant by "Appropriation" so far as Departmental accounts are concerned. All charges passing through the Engineering accounts must be "Appropriated," that is, they must be identified by their Class of Work, or Works Order, by the type of work (overhead, underground, or internal) by an indication as to whether the work concerned is "Providing" or "Recovering and Shifting," and, in the case of cash expenditure other than salaries, wages and labour, by certain definite Cash Account headings. These are indicated on form T.E.40 (Fig. 12), the Superintending Engineer's Monthly Cash Account. This account is made up from summaries of the Sectional Engineer's weekly balance sheets already referred to, plus salaries for Headquarters and Sections, plus accounts paid by the Superintending Engineer in addition to those paid by the Sections. All bills paid are summarised weekly on forms T.E.437 (Fig. 13) under the appropriate Class of Work and Cash Account heading, *e.g.*, CL.67/31 Overhead, Providing, Engineering Stores. The accounts are numbered serially in batches under each heading so that they can be checked against form T.E.40 by the Accountant General. The Cash Account must balance with the postings in the Cost Statement for cash transactions. This will be made clear later. It will be observed that form T.E.40 provides for the entry of the sums placed to the credit of the Superintending Engineer's banking account by the Accountant General. These sums are in accordance with the Superintending Engineer's Cash Application (form T.E. No. 2) forwarded to the Accountant General's Department each Monday. As with the Sectional Engineer's applications

Engineering District _____

T.E. 40.

CASH ACCOUNT.

Mr. _____ in account with His Majesty's Postmaster General

Dr. for the month of _____ 192 **Cr.**

Receipts	Amount			Payments	Amount		
	£	s	d		£	s	d
Balance from last Account				Balance from last Account			
" of Errors to correct Cash Account of _____				" of Errors to correct Cash Account of _____			
Cash received from the C & A G during the month:—				Salaries, Wages and Labour			
Date of Receipt Amount				Cost of Living Bonus			
£ s d				Travelling			
				Engineering Stores			
				Freight and Cartage of Engineering Stores			
				Wayleaves			
				Contract Work			
				Rent, Storage, &c.			
Postal Drafts issued (Wages, &c.)				Incidental Expenses			
Postal Drafts issued (Wayleaves)				Non-Engineering Stores			
Sale, &c., of Engineering Stores				Superannuation: Injury Grants			
Sale, &c., of Non-Engineering Stores				Poundage on Postal Orders			
Rents Receivable				Postage refunded			
Repayments by Refreshment Clubs				Telegram Moneys refunded			
Miscellaneous Receipts				Life Insurance Deductions refunded			
Deductions from Pay				Income Tax Deductions (Salaries, &c. refunded Wayleaves			
Income Tax on Wayleave Payments							
Repayment to Vote				Balance in hand (for details see over			
Suspense Account				" of Errors (for use in			
Balance of Errors (for use in Acct. General's Department)				" Acct. General's Department)			
	£				£		

It is hereby certified that the charges made in this Account are fair and reasonable, and that the details of the Balances in hand, as shown herein, are correct.

 day of _____ 192
 Superintending Engineer.

FIG. 12.

on forms T.E.70, abnormal applications on form T.E.2 must be covered by adequate explanation.

SUMMARY OF MISCELLANEOUS VOUCHERS.

T.E. 487,
(Rev. 1942/25)

Estimate ---
£ : .

OPEN		UNDERGROUND		INTERNAL	
Providing	Recovering	Providing	Recovering	Providing	Recovering
£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.

W.O. or C.S.
Sub-division }
Section

C.A. Week Ended	ENGINEERING STORES			CONTRACT WORK			RENT, STORAGE, &c.			INCIDENTALS			TOTALS	
	Open	U'ground	Internal	Open	U'ground	Internal	Open	U'ground	Internal	Open	U'ground	Internal		
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		

FIG. 13.

The control of bill payments is almost a subject in itself; but it will probably suffice here if a brief explanation is given of the means adopted to ensure that no bill is paid without a covering order. All small purchases of materials or small contracts for work to be done have to be covered by Local Order. All small bills for electric light and gas, and rent of premises, are systematically recorded so as to ensure that payment is not duplicated. Larger contract works are covered by an Engineer's Order (issued by the Engineer-in-Chief) or District Engineer's Order (issued by the Superintending Engineer) and all payments made are carefully checked and recorded. All bills paid bear the certificate of the Superintending Engineer or Sectional Engineer as a guarantee that the expenditure has been made for official purposes, that the necessity for it is agreed, and that the charges are considered fair and reasonable for the material supplied or the work done.

Stores Accounting.

The preparation of stores requisitions and the methods of dealing with stores on receipt from the Stores Department or from the Section Stock, and with the despatch and advice of

recovered stores, are matters with which most engineering officers come into contact very early in their careers. There are many phases of stores work presenting peculiar features which are only understood after much experience; but these hardly fall within the scope of a paper on accounting.

Engineering stores, except those purchased locally and brought to account in the Cash Account, are obtained for works and maintenance from three sources, viz., Main Depot Stocks, Section Stocks and Normal Stocks, the last two stocks being supplied from Main Depot Stocks. In general, it may be stated that stores for Main Works are drawn from Main Depot, for Small Works and Advice Notes from Section Stocks, and for day-to-day maintenance from Normal Stocks, except at those Linemen's Centres where a Section Stock exists and the Normal Stock has been merged in the Section Stock. Fig. 14 shows the accounting steps from Works

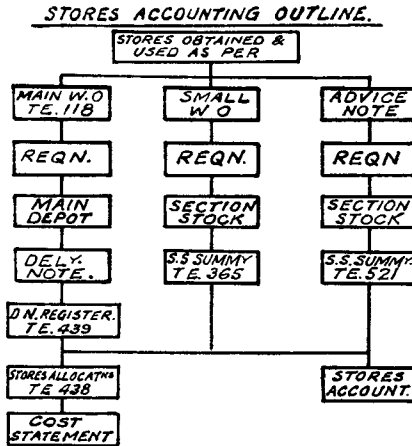


FIG. 14.

Order to Stores Account, and Cost Statement, so far as debit or issued stores are concerned. For credit or recovered stores, the progress is varied only by the absence of the requisition and the special summary form T.E.521 used for issued stores for Subscribers' works.

The Stores Account itself is quite simple in form, as will be seen from Fig. 15, and shows:—

Engineering District _____

STORES ACCOUNT.

**Engineering Stores Received and Issued during the
Month of _____, 19**

DEPOT	RECEIPTS	ISSUES
London		
Birmingham		
Contractors' Works		
Pole Depots		
Edinburgh		
Other Districts		
Pole Stacks		
Stores Exchanged on Works by Transfer Note. Section Stock		
TOTAL		
Total as per Cost Statement	Recoveries Issues	_____ _____
TOTAL		

Superintending Engineer.

19

FIG. 15.

(a) Under "Receipts."

- (i) The value of stores obtained for works and maintenance from various sources (including stores exchanged by Transfer Note).
- (ii) The total value of stores recovered from works and maintenance. This total must agree with the value of recoveries shown in the Cost Statement.

(b) Under "Issues."

- (i) The value of stores returned from works and maintenance to Depots, Section Stocks, etc. (including stores exchanged by Transfer Note).
- (ii) The total value of stores issued to works and maintenance. This total must agree with the value of issues shown in the Cost Statement.

Stores Allocations.

Stores drawn from Section Stocks for Subscribers' works are entered up daily requisition by requisition on forms T.E.521. These forms are totalled and priced at the end of the month, and the values are carried to form T.E.438 (Stores Allocations) (Fig. 16) for Class of Work "CS."

T.E. 438

Title of Work _____

STORES SUMMARY.

Separate sheets to be used for Debits and Credits.

Debit sheets to be posted in black, Credit sheets in red.

W.O. or Class of Work } _____
Section _____

Date of Cost Statement (1)	Voucher or Section Stock Summary Number (2)	Overhead Work						Underground Work						Internal Work					
		Actual Issues or Recoveries (3)			Adjustments or Surplus Stores (4)			Actual Issues or Recoveries (5)			Adjustments or Surplus Stores (6)			Actual Issues or Recoveries (7)			Adjustments or Surplus Stores (8)		
		£	s	d	£	s	d	£	s	d	£	s	d	£	s	d	£	s	d
	Estimate																		

FIG. 16.

Stores drawn from Section Stocks for Small works, etc., are entered requisition by requisition on form T.E.365, under various Rate Book Items; and these forms are also priced and the values carried to the forms T.E.438 under the various Classes of Work.

Stores drawn from Main Depot pass by means of Delivery Notes issued by the Controller, Stores Department, through a Delivery Note Register (T.E.439) direct to the forms T.E.438 for the various Classes of Work. The monthly totals of the forms T.E.438 balance with the Stores Account, and are posted under Works Orders and Classes of Work in the Cost Statement.

Most of the pricing and posting is done by mechanical accounting devices; and it may safely be claimed that the Department's methods of dealing with Stores transactions from an accounting point of view are as effective and economical as any to be encountered in outside commercial accounting. The Section Stock system, especially, is designed for the expeditious issue of stores with full regard to the necessity of not carrying unduly heavy stocks and for simple and yet adequate accounting. The Transfer Note system of booking stores from one work to another, and the "Maintenance Exchange" system of replacing faulty or worn-out apparatus and tools, are worthy of note as accounting methods for handling frequent transactions with a minimum of book entries.

The *Cost Statement* is the final step in District accounting, although certain subsidiary returns such as the Expenditure Return, the Analysis of Maintenance Return, and the Motor Transport Return, are compiled from, or balanced with, the information it contains. In brief, the Cost Statement is the final summary of the accounts already dealt with under Cash and Stores, plus any Chief Office payments. It is prepared in two portions—"Classified" and "Unclassified." Classified expenditure is that capable of being definitely allocated to "O," "U" or "I"; Unclassified is that not so divisible; covering "Oncost" charges such as salaries, travelling and subsistence, freight and cartage, rent of premises, sick and holiday pay, tools, motor transport, accident compensation, and other miscellaneous headings. Fig. 17 is in respect of classified expenditure. It will be observed that the columns for "Salaries," "Wages," "Labour" and "Contracts," are divided for "Providing" and "Recovering" (which includes "Shifting") and that Stores Expenditure is sub-divided between "A" and "S" for each classification. The meaning of these symbols is:—

"A" for actual issues	}	Materials issued.
"S" for adjustments		

actual recoveries, and " S " adjustments, represents the net value of the stores actually recovered.

The heading " Chief Office Payments ' is in respect of payments made by the Accountant General for wayleaves, travelling (including removal expenses), railway maintenance and similar expenses chargeable to the District concerned. An advice is issued each month to the Superintending Engineer to include such payments in his Cost Statement. A certificate has, however, been previously furnished by the Superintending Engineer on form T.E.1087 that the accounts are in order, and are proper to be paid.

On completion the Cost Statement is forwarded, certified by the Superintending Engineer, to the Accountant General's Office, where it is subjected to checks against the Cash Accounts, and Stores Accounts already submitted, and where it is assembled into a final Cost Statement for the whole of the Engineering Department, preparatory to assimilation into the Commercial Accounts of the Post Office.

In the District Office the Monthly Return of Expenditure (T.E.282A—Fig. 1) is compiled under the various headings from the Cost Statement; the Analysis of Maintenance Expenditure Return (T.E.378—Fig. 3) is balanced against the various sub-divisions of Maintenance shown, the Return of Expenditure other than day to day maintenance (Indirect Expenditure, T.E.379) is compiled; and the Quarterly Return of Motor Expenditure is compared with certain particulars in the Cost Statement.

Works Order Closing.

The Cost Statement is not the final accounting step, however, so far as the individual Works Order is concerned. On completion of a work it is necessary to render to the Superintending Engineer closing reports. These are embodied in the formal authority forms T.E.78A and B to which reference was made earlier. Form T.E.78A embodies a certificate from the Sectional Engineer that all surplus and recovered stores have been duly brought to account, and a reference is made to the date of the last Cash Account Charges. A statement of manhours expended is given on the Works Instruction forms T.E.160. The Works Order Closing Duty in the Superintending Engineer's Office is responsible for checking the Stores Sheet T.E.118 to ensure that the transactions recorded are in accordance with the estimate, or that any departures

therefrom (within certain limits) are duly authorised on a Departure from Estimate form T.E.68. The manhours expended are checked against those authorised, and against those recorded on form T.E.112 (Running Summary of Manhours, etc.). The three figures should be in approximate agreement. Where form T.E.115A has been issued by the Engineer-in-Chief, a formal certificate is furnished on this form by the Superintending Engineer in the same way as by the Sectional Engineer on Form T.E.78A.

Form T.E.78B (and similarly T.E.115B for the Engineer-in-Chief) is a certificate as to whether the estimate has been adhered to or not so far as records are concerned. The Plans and Records Duty is responsible for the final closing of the Works Order, on receipt of form T.E.78B from the Sectional Engineer. The Running Summaries of Mileages and Apparatus are posted in order that the Section may be credited with the amount of plant to be maintained. Where large cable mileages are brought into use, and consequently into maintenance, before the Works Orders can be completed and closed, the Sectional Engineer should in his own interest see that an Interim Record Report is furnished as explained in the footnote on form T.E.78B. Queries as to cost variations would probably be less frequent if this Interim Report received the attention it should do.

Other records on maps and plans and pole diagrams are attended to by the Drawing Office staff, to whom the completed Works Orders are passed for this purpose.

The Works Orders are then filed in their proper year, and Class of Work, and retained for varying periods of years. Some of them may still be subjected to further accounting checks by auditors visiting the Districts. Upon the care which has been given to the accounting processes described depends the District's reputation as a well-administered District. Slackness in administration of "Money" and "Stores" is a rare occurrence in this Department; but when it does occur it is seriously noticed.

Mechanical Aids to Accounting.

Mechanical aids to posting and calculating work have been systematically introduced. Much of the statistical work was at one time carried out by means of slide rules; but comptometer machines operated by specially trained female staff now perform most of this work. Listing and adding

machines are used for payroll and stores posting work, and a printing machine is used for reproducing each week and month the permanent features of payroll work. It cannot be said that Departmental accounting is stereotyped and unprogressive, as endeavour is constantly being made to increase the uses to which the mechanical aids may be put.

Conclusion.

It was stated earlier that this paper would be in the nature of an outline or survey. It is regretted that time and space have not permitted of a fuller explanation of certain features of the accounting work of the Department. An endeavour has been made to give a conception of the accounting scheme as a whole, and, if a desire for fuller information has been engendered, it is hoped this outline will help to a clearer understanding of the Department's Accounting Regulations.

APPENDIX.

REFERENCE LIST OF FORMS INCIDENTAL TO
DISTRICT ACCOUNTING.

T.E. No. of Form.	Title or Description.	Purpose for which used.
2	Application for Cash.	S.E.'s Application to account- ant General.
18	Foreman's Progress Reports —Daily Summary.	Manhour Allocations & U.C.C.
40	Pay Bill Balance Sheet.	S.E.'s. Cash Account.
46	Particulars of Current Works	Works Order Control (Labour).
68	Departures from Estimate (Stores).	—
70	Engineer's Balance Sheet.	Seclt. Engrs.' Cash Account.
78A	Works Order Completion. Form I.	Formal Authority to Sectional Engr. for Main Works Order.
78B	Works Order Completion. Form II.	
102	Unit Construction Costs.	Internal Work (C.S.)
112	Running Summary of Man- hours Expended.	Works Order Control (Labour).
112A	Difficulties and Departures.	do. do.
114	Running Summary of Man- hours (Internal—other than C.S.).	do. do.
118	Works Order Expense Ac- count.	do do. (Stores).
155	Departures from Estimate (Labour or E.O.).	—
156	Stores Account.	S.E.'s. Monthly Stores Account.
160	Works Authority Advice.	Main Works Orders.
191	Works Instruction — Small Works.	—
232	Annual Estimates — Running Records of Amounts passed, etc.	Maintenance F.1 Annual Esti- mates.
281	Record of Allotment, Com- mitment and Expenditure.	Bulk Control of Funds.
282	Summary of Allotment, un- authorised Estimates, Appli- cations for increased Author- ity.	do.
282A	Summary of Expenditure in respect of the classes of work included in the Engi- neering Programme.	do.
365 365A	Stores Summary for the Month for other than Subscribers' Works.	Section Stock Accounting.
378	Analysis of Maintenance Expenditure.	Control of Maintenance F.1.
379	Expenditure other than day- to-day Maintenance—Monthly Analysis.	Indirect Expenditure Analysis.
380	Unit Maintenance Costs — Monthly Analysis.	Issued to Sectional Engineers.
435	Works Order Allocation Sum- mary.	Wages & Labour Allocations.

T.E. No. of Form.	Title or Description.	Purpose for which used.
436	Wages Sheet—Labour—Summary from form T.E. 435.	Money postings of Manhours at Average Rate.
437	Summary of Miscellaneous Vouchers.	Bill Payments.
438	Stores Summary.	Stores Allocations.
439	Stores Delivery Note Register—Receipts or Issues.	Stores Account.
450	Unit Costs—Abnormal costs enquiry.	U.C.C. & U.M.C. Control.
471	Works Instruction for Subscribers' Works covered by Advice Note.	Exchange Subs. App. Overhead Under-ground.
472		
473		
474		
490	Unit Construction Comparative Costs.	Comparison with output in previous corresponding period.
492	Works Order—List of matters for attention in Suptg. Engineer's Office.	Plant Records, etc.
493	Works Order—List of matters for attention in Sectl. Engineer's Office.	
521	Stores Summary for Subscribers' Works.	Section Stock Accounting.
626	Small Works Record.	—
650	Running Summary of Working Ends, etc.	U.M.C. & Fault Statistics.
774	U.C.C.—Overhead Providing and Recovering.	For summarising the information on forms T.E. 18 and 814 for transfer to T.E. 815, 816, 817, 102, etc.
775	U.C.C. Ovhd.—Renewing, Shifting and Ineff. Time.	
776	U.C.C. Underground—Providing.	
777	U.C.C. Underground—Recovering, Shifting and Ineffective Time.	
778	U.C.C. Internal—Providing, Recovering.	
814	Foreman's Progress Reports Daily Summary C.S. (External) £200 or less.	U.C.C. Subscribers' Works.
815	Performance Rating Schedule—Overhead.	Unit Constn. Costs. Bulk Control of Output—External Work.
816	Performance Rating Schedule—Underground.	
817	Foreman's Performance Ratings—Subs. & Renters' Works C.S.—Overhead.	
1036	Maintenance Exchange Requisition.	Exchanging Faulty Apps., etc.
1058	Stores Transfer Note.	
1120	Monthly Summary of Suptg. Engineer's Cost Statement.	
1121	Suptg. Engineer's Monthly Cost Statement.	