

Public Works (1893) Department.

RAILWAY BRANCH.

G.O., No. 662 B

DATED 6th April.

[Despatch Abstract.]

Store Balances. — Requesting that an expression of the views of the agent and managers, Madras Railway, be furnished on the several points raised in the report on result of a test & examination of the — of the Locomotive Department, Madras Railway.

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

6TH APRIL 1893, No. 662 R., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Railway.

Read the following paper :—

From the Examiner, Guaranteed Railway Accounts, Madras, to the Consulting Engineer for Railways, dated Madras, 28th February 1893, No. 129 A.

I have the honour, in continuation of my No. 29, dated 18th ultimo, to report the result of a test examination of the store balances of the Locomotive Department.

2. The amount at debit of suspense in the Audit office ledgers on account of the Locomotive Department on 31st December 1891 was Rs. 10,55,975-15-1.

3. In support of this balance I was furnished with the statement hereto annexed and marked A, amounting to Rs. 10,98,530-15-9, which, it may be observed, is Rs. 42,555-0-8 in excess of the Audit office balances.

4. From a perusal of list A, I noticed that the total assets had been unduly reduced by the following items :—

	RS.	A.	P.
Pendencies	21,994	12	9
Credit balance on Indian coal account	8,845	4	4
Total	30,840	1	1

5. In the course of investigation it further transpired that a balance of about Rs. 60,000 expended on articles in course of manufacture but unfinished on 31st December had not been dealt with as an asset of the Company and included in the list.

6. The items referred to in paras. 4 and 5 will still further augment the excess of actual stock over the audit ledger balances.

7. The question of pendencies was fully dealt with in para. 8 (m) of my report on the Engineering Department and the same necessity exists in the Locomotive, as in the Engineering and other departments, of establishing a system by which the large balance of pendencies may be reduced to a minimum.

8. The credit balance on the Indian fuel account is fully reported on in para. 11 (h) hereinafter.

9. The statement marked A previously referred to did not contain any details of quantities and, prices of stock in hand, and for the purpose of test audit, it therefore became necessary for me to see the actual detailed stock lists which were promptly produced by the Locomotive Superintendent.

10. From the lists furnished by the Locomotive Superintendent, I extracted a statement showing the quantities and prices of all articles in store exceeding Rs. 2,000 in value and this statement is appended and marked B.

11 (a) Having thus obtained the details of the principal items of stock in hand, I proceeded to compare the prices fixed on the articles with current market rates and to generally test the accuracy of the balances.

(b) I found that the system in force is to maintain quantity ledgers only, but as in the case of all important articles this system involves the upkeep of separate priced accounts current, I formed the opinion that very little extra labour would be required to keep priced ledgers for all important articles as suggested in my report on the Engineering department.

(c) With the exceptions of coal and firewood referred to in separate paragraphs, the stocks on hand agreed with the ledger balances and had from time to time been tested by the permanent staff of stock-takers employed in the Audit branch.

(d) *Firewood Account, Rs. 1,04,285-5-0.*—

(i) The locomotive stock ledger showed an excess quantity of 23,828,560 lb. over the stock lists owing to wood received and not paid for having been excluded from the audit ledgers.

(ii) A system is necessary as on State lines of taking all stock received to debit of stores and of crediting unpaid bills to the store purchase account; (the value of the firewood omitted from the accounts was Rs. 51,753.)

(iii) The stock taken to account seemed to be as fairly valued as possible on a system of averages, viz., at Rs. 2-3-4 compared with Rs. 2-2-9, the average cost of wood received during the period.

(e) *Coke Account, Rs. 11,024-10-3.*— The value of this stock was under stated by about Rs. 1,468, the value per ton being taken at Rs. 21-5-5, whereas the actual average cost was about Rs. 27-9-3 per ton. This was due to the issue rate having been somewhat too high.

(f) *English Coal, Rs. 3,225-10-2.*— The value of this stock was also slightly under-stated in the lists, the price being fixed at Rs. 25-14-6 against a cost price of Rs. 26-11-7; the reduction in price was due to a small surplus stock brought out by stock-taking and to the fact of specially augmented rates having been charged to other departments and in private work bills.

(g) *Patent Fuel, Rs. 42,353-2-5.*— This stock was also undervalued to the extent of about Rs. 2,388, the price having been fixed at Rs. 21-3-11 against a cost price of Rs. 22-7-1; the reduction in price is due to the same causes as those referred to in para. (f) regarding English coal.

(h) *Indian Coal, Cr. Rs. 8,845-4-4.*—

(i) The stock lists showed a credit balance of Rs. 8,845-4-4 in amount and a debit balance of 333 tons in quantity.

(ii) Valuing the 333 tons at Rs. 14-12-6 per ton, which was the average actual cost of fuel purchased, the value of Indian coal has been understated in the stock lists by Rs. 13,773.

(iii) This understatement would have been still greater but for the fact that an amount of Rs. 5,182 which was deficient on Trincomallee timber account had been transferred in the previous half-year in reduction of the excess balance on the coal account.

(iv) Such adjustments should not, in my opinion, be made without previous sanction and record at official meeting.

(v) The excess on the stock of coal may be due to a system which obtains of adding 5 per cent. for wastage to the actual issues to drivers.

If this is the case, it may be possible to reduce the percentage, as such excesses in stock may lead to speculation.

I cannot find any authority of Government to charge this rate of 5 per cent. for wastage.

(vi) Again 5,454 tons of coal costing Rs. 80,617, received during the half-year have been omitted from the stock lists owing to the want of system referred to in para. (d) of taking unpaid bills to debit of stock and credit of purchase account.

(i) *Teak Timber, Rs. 2,68,589-12-10.*—

(i) The balance on this account was made up as follows:—

	C. FT.	IN.	
Scantling in the mill—			
Best	2,862	7	
Rough at 96 cubic feet			
per ton	22,339	0	
Waste at 110 do. ...	1,025	0	
" 52 lbs. per cub. ft.		66	0
Uncut logs	697	4	
Scantlings in the shed,			
best	16,337	8	
	43,327	7	@ Rs. 4-8-1 = Rs. 1,95,112
Uncut logs	992	3	@ " 2-4-8 = " 2,273
Do.	34,964	8	@ " 2-0-7 = " 71,204
Total			Rs. 2,68,589

(ii) The price of scantling shown above was double the price of timber in log, resulting in an apparent loss by wastage and cutting of 100 per cent.

(iii) But as the actual wastage of the period worked out to 50 per cent. only, the price of teak scantling would appear to have been much overstated.

(iv) Thus if to the price in log, Rs. 2-4-8, 50 per cent. be added for wastage and cutting or Rs. 1-2-4, the price of scantling would be Rs. 3-7-0 per cubic foot instead of Rs. 4-8-1 as shown in the stock lists (even a figure of Rs. 3-7-0 is apparently high as the issues of teak timber from the Engineering stocks during the same period were made at the rate of Rs. 2-5-0 per cubic foot.)

(v) The teak scantling account would therefore appear to have been over-valued by at least Rs. 46,260 owing to the excess price on scantling.

(vi) Again, 697 cubic feet of uncut logs in the mill awaiting manufacture have been priced as scantling at Rs. 4-8-1 instead of as uncut logs at Rs. 2-4-8, resulting in a further over-valuation of about Rs. 1,543.

(vii) The teak scantling has therefore apparently been over-valued to the extent of about Rs. 47,800 in all.

(viii) This error is, in my opinion, due to the absence of priced saw mill and scantling accounts.

(ix) Under the procedure in force quantities alone were dealt with and a periodical account current of all receipts, issues and charges was prepared and priced.

(x) The balance brought out by this account was assumed to represent the value of the stock in hand, logs being first valued at cost price and the residue assumed to be the value of the scantling.

(xi) By this system all errors in accounting or pricing were added to the value of scantling. As an instance of how errors have arisen, I may state that in a preceding half-year when the value of the starting balance was Rs. 5-8-0 per cubic foot, the issues to works were made at Rs. 3 per cubic foot and the difference of Rs. 2-8-0 per foot was therefore thrown upon the value of the balance in hand at the end of the period which thereby became unduly augmented to a value of Rs. 7 per cubic foot.

(xii) The following priced accounts would appear to be necessary to permit timber transactions being correctly recorded.

(xiii) A saw-mill account taking to debit all logs and scantling sent in for cutting and the cost of the operations and credit; by issue to works or store accounts of each quality; for the actual value of the outturn.

(xiv) Separate scantling accounts of each quality, to be debited with saw-mill outturn and credited by actual issues or sales.

(xv) A log store account to be debited with the actual cost of and charges on, logs taken into store, and credited with the value of the actual issues to saw-mill, works or other heads.

(j) The following discrepancies were discovered in the value fixed upon other important items, viz.

Name of article.	Quantity.		Rate fixed in stock lists.	Average rate paid for actual purchase during the period.	DIFFERENCE IN VALUE OWING TO DIFFERENCE IN RATES.	
					Excess valued in stock lists.	Short valued in stock lists.
	UNIT.	NO.	LBS. OZ.	RS. A. P.	RS. A. P.	RS. A. P.
Axles, crank, steel, A class.	..	13	..	620 5 3	604 3 0	209 13 3
Do. do. KA ₂ and KB ₂	..	18	..	620 5 3	611 7 4	159 10 6
Do. do. BP, BB, SC and SB.	..	6	..	620 5 3	632 8 0	73 0 6
Copper ingots	..	..	19,248 4	0 6 2	0 4 5	2,105 4 5
Tube plates of classes	..	..	10,713 0	0 6 0	0 6 7	390 9 3
Tyres, wheel, steel, engine and tender, 5' 4 1/2"	..	36	..	68 2 9	97 0 2	1,095 13 10
Castings for cocks, brass	..	..	5,627 2	0 7 3	0 7 6	87 14 9
Valves, Stones, bronze, slide	..	42	..	61 7 0	39 2 4	936 4 0
Cylinders, BA, BB, SB and SC, 17"	Pairs.	3	..	761 12 7	761 2 7	1 14 0
Rods, piston KA ₂ and KB ₂	..	40	..	70 13 7	70 14 7	2 8 0
Casings, buffer, W.I.	..	753	..	11 14 11	13 1 3	862 13 0
Springs, buffer (Tremmises patent) 12 1/2 x 5	..	490	..	5 0 6	4 7 7	273 1 2
Tyres, steel, carriage and wagon, 3' 2 1/2"	..	1,085	..	46 10 11	35 7 10	12,144 1 5
Under-frames, iron, for carriages	..	28	..	607 12 2	604 14 2	80 8 0
Tyres, steel, carriage, 3' 1 1/2"	..	314	..	46 0 6	36 11 10	2,917 9 4
Zinc sheets, plain, 5-9 x 3 x 21 BWG.	..	..	26,315 8	0 1 9	0 2 2	685 4 10
Do. 5-3 x 3-3 x 21 BWG.	..	..	56,431 8	0 1 9	0 2 5	2,351 5 0
Total	..	..	..	..	18,828 2 1	5,549 5 2
Net difference	..	..	..	..	13,278 12 11	..

(k) The following complicated system of pricing was and is still in force and would appear to require revision, viz:—

(i) Separate rates of issue are fixed periodically by the Locomotive Superintendent for issues to the Locomotive Department, issues to other departments, issues to Company's servants, and issues to private persons or works.

(ii) Issues to other departments and private persons are priced at considerably higher rates than the rate charged in the Locomotive Department, and, in the event of large transactions, this complicated system must result in a serious derangement of the average prices.

(iii) Again as the increased charges are intended to cover supervision, exchange and charges of a general nature, many of which do not pass through the Stores Account, the system would appear to be absolutely erroneous.

(iv) There should, in my opinion, be one rate of issue only fixed for each article irrespective of the department or work to which it is issued.

(v) Supervision and similar charges payable by other departments or outsiders should be provided for by addition of special percentages, as is the custom on other railways.

(l) The balances at debit of Locomotive Department shown in the audit ledger and the locomotive balance sheets were at the period under review inclusive of both stores and workshop transactions and it was impossible to ascertain monthly from these records the separate value of stores and of workshop balances.

This system has, at my request, been subsequently modified and the locomotive returns made to show the transactions separately.

(m) Stores at up-country depots—

(i) As in the case of the Engineering Department, a large amount of detailed ledger-keeping is thrown upon Foremen at out-stations which might be avoided by a system of imprests.

(ii) The Foremen now keep unpriced ledgers which are periodically balanced and the result sent to the Head office for valuation.

(iii) It is noticed that a considerable stock of springs, side chains, spare wheels, &c., in the hands of Foremen have not been included in this Head office valuation.

(iv) These omissions may roundly be stated at Rs. 14,000 (vide statement C).

(v) It is stated in explanation that these items have been charged off to works as soon as they were issued to the Foremen which is irregular.

(vi) A system of imprests would also remedy this as well as save time in accounting as suggested in paragraph 1.

(n) It is satisfactory to note that there is not the same reason to complain of the returned stores system as there was in the case of the Engineering Department, although there are some few items borne on the books without value at Perambore, which, it is estimated, are worth about Rs. 5,000 (vide statement D).

12 (i). Until the receipt of recent orders to reduce the pay of the appointment of the Locomotive Accountant, that officer had been under the direct control of the Company's Auditor.

(ii) Since the reduction, he has however been placed beyond the jurisdiction of the Auditor.

(iii) This was not a necessary sequence to the Government order to reduce the pay of the appointment and in my opinion the old system should be reverted to.

(iv) Although the Board in its No. 867, dated 27th May 1892, suggested the Locomotive Accountant being put under the direct control of the Locomotive Superintendent, the actual sanction by Government was to an accountant for the Audit Office Establishment whose pay should be allocated to Locomotive Department as is the usual custom.

(v) The Locomotive Accountant as on State lines, should, in my opinion, hold the same relations to the Locomotive Superintendent and auditor as an accountant on the Public Works Department does to his Executive Engineer and Examiner.

13. Before concluding, I would beg to recapitulate the following important points noted in this report and to ask you to take such action thereon as you may consider expedient. In this respect, I would further draw special attention to an opinion expressed by the Accountant-General, Public Works Department, in his No. 582 R., dated 18th June 1892, printed as Appendix A on several of the points herein raised;

(a) The audit ledgers and locomotive balances should at once be made to agree.

(b) The manufacture balance should be treated as an asset and added to the audit ledger balances.

(c) As suggested in my report on the Engineering Department—

(i) The system of pendencies should be improved.

(ii) Priced ledgers should be kept for all important articles.

(iii) A system of imprests should be introduced to reduce ledger-keeping at out-stations.

(iv) All stores standing on the books without value should be appraised and taken to account.

(v) All important stock adjustments should be submitted for the approval of the Consulting Engineer to Government.

(d) The following apparent discrepancies should be investigated and explained and, if necessary, adjusted in the accounts and stock lists; the net reduction in value being met by reducing the total excess of locomotive stock over the audit balances before making the adjustment suggested in paragraph (a).

	Excess value entered in stock lists.	Short value entered in stock lists.
	RS.	RS.
Coke para. 11 (e)	..	1,468
Patent fuel, para. 11 (g)	..	2,388
Indian coal, para. 11 (h, ii)	..	13,773
Teak, timber, para. 11 (i, vii)	47,800	..
Sundry items — vide para. 11 (j)	13,279	..
Total	61,079	17,629

(e) To prevent such large items as Rs. 51,753 on firewood and Rs. 80,617 Indian coal being omitted from the stock lists, a system should be introduced of taking to account all articles received into store, whether paid for or not, by means of a purchase account.

(f) The system of charging varying prices for the same article should be abandoned, and supervision, &c., arranged for by the addition of special percentages.

(g) The system of accounting for timber should be considered and if thought necessary revised — vide para. 11 (i) XII.

(h) The question of the position of the Locomotive Accountant should be considered and finally settled—*vide* para. 12.

(i) The rate allowed for wastage on coal should be tested and a rate for future guidance recorded at official meeting.

14. The net financial results of my investigation would appear to be as follows:—

	RS.
(i) The lists of locomotive suspense balances submitted amounted to	10,98,531
(ii) These lists omitted the following items, viz.:—	
Unfinished works about	60,000
Short value on stores— <i>vide</i> para. 13 (d)	17,629
Coal and firewood received but not paid for— <i>vide</i> para. 13 (e)	1,32,370
Debits to clear pendencies— <i>vide</i> para. 4	21,994
Stores borne on the books without value— <i>vide</i> paras. 11 (m) iv and (n)	19,000
Total omissions	2,50,993
(iii) And included the following errors:—	
Over-valuation owing to excessive prices— <i>vide</i> para. 13 (d)	61,079
(iv) Resulting in a net omission of	1,89,914
(v) and a total value of stores and unfinished works in charge of the locomotive of	12,88,445

instead of Rs. 10,98,531 as shown in the lists submitted for inspection.

(vi) The above figures show that the locomotive stock lists as submitted are nearly Rs. 1,90,000 short of the value of the stock in charge of the Locomotive department and that a very serious error has apparently been made in pricing the stock of teak timber.

(vii) The Audit office books, moreover, understate the value of the Locomotive department assets by Rs. 2,32,469 and omit liabilities for stores purchased to the extent of Rs. 1,32,370.

15. Attention having recently been called to the heavy store balances of the Madras Railway, I would finally point out that the balances complained of in the Government of India letter do not fully state the value of the stock in hands of the Company owing to the system referred to in this report of omitting to take into the stock lists the value of stores purchased on credit and to the system in the Engineering Department of omitting to price certain returned stores.

(Signed) J. LIGHTFOOT,
Examiner, Railway Accounts, Madras.

ENCLOSURES.

STATEMENT A.

MADRAS RAILWAY—LOCOMOTIVE DEPARTMENT.

Stock of Stores on hand on 31st December 1891.

Ward.	Number of Ledgers.	Amount.	Total.
		RS. A. P.	RS. A. P.
A or Metal ward	1	67,080 7 11	
	2	85,773 15 7	
	3	67,679 2 2	
	4	24,217 5 2	
	5	47,212 14 2	
	6	25,756 0 2	
	7	12,095 14 1	
		3,29,815 11 3	
Less pendencies		12,964 11 6	
			3,16,850 15 9

STATEMENT A—continued.

Stock of Stores on hand on 31st December 1891—cont.

Ward.	Number of Ledgers.	Amount.	Total.
		RS. A. P.	RS. A. P.
B or Hardware ward... ..	1	33,003 11 7	
	2	17,017 15 3	
	3	20,979 6 10	
		71,001 1 8	
Less pendencies		3,818 3 2	
			67,382 14 6
C or Dry saltery ward	1	21,942 9 8	
	2	15,663 1 9	
		37,605 11 5	
Less pendencies		3,253 14 6	
			34,351 12 11
D or Carriage iron work	1	70,819 4 4	
	2	1,16,297 9 8	
		1,87,116 14 0	
Less pendencies		870 7 7	
			1,86,245 6 5
B Duplicate parts of Engines	1	23,452 6 0	
Less pendencies		1,287 8 0	
			22,164 14 0
Fuel—	1		
Coke		11,024 10 3	
English coal		3,225 10 2	
Patent fuel		42,353 2 5	
Indian coal		8,845 4 4	
Firewood		1,04,285 5 0	
			1,52,043 7 6
Timber—	1		
Teak		2,68,589 13 10	
Mango planks		913 1 5	
Trincomallee		5,735 12 9	
Verundidu		18 0 0	
Red cedar wood		2,556 12 2	
Krool wood		170 15 6	
White cedar wood		140 12 7	
Irambugam „		3 8 4	
Chola benteak		13 0 0	
Poon planks		747 1 9	
Benteak wood		2,725 5 5	
			2,81,614 3 9
Stores at upcountry stations—			
Madras (Rayapuram)		5,299 10 9	
Salt Cotaurs		666 7 0	
Central Station		760 7 11	
Arkónam		744 3 4	
Kátpádi		391 3 1	
Jolárpét		4,905 7 11	
Bangalore		2,442 4 7	
Bangalore City		476 6 9	
Salem		1,819 12 4	
Pódanúr		9,100 13 10	
Olavakód		63 0 3	
Calicut		967 14 3	
Rénigunta		3,419 3 7	
Cuddapah		1,535 0 11	
Gooty		3,864 13 8	
Raichur		1,419 6 9	
			37,876 4 11
Grand total			10,98,530 15 9

STATEMENT B.

MADRAS RAILWAY—LOCOMOTIVE DEPARTMENT.

Lists of items of stores exceeding Rs. 2,000 in value on 31st December 1891.

Name of ward.	Ledger.	Description of articles.	Quantity.	Rate.	Amount.
Vol. I.	Folio.	UNIT.	NO.	lbs. oz.	RS. A. P.
A.	I.	4 Axles, crank steel, A class	13	..	620 5 3
		5 " " KA ₂ and KB ₂	18	..	620 5 3
		6 " " BP, BB, SC & SB	6	..	620 5 3
		89 Brass, old	..	24,851 4	0 3 0
		107 " tubes, boiler, 11-1×2	..	24,495 0	0 5 0
		118 " " Repd., 11-2×1½	521	11,464 0	0 4 0
		216 Blocks, brake, C. I. Engine Fd.	711	..	3 1 9
		200 Copper back plates of classes	..	7,176 0	0 6 0
	II.	238 " ingots	..	19,248 4	0 6 2
		237 " scrap	..	24,006 7	0 4 0
		340 " rod, 1"	..	7,954 0	0 5 7
		348 " " "	..	7,482 6	0 5 7
		415 " tubes, boiler, for repair, 1½	..	8,357 0	0 4 0
		419 " " plates of classes	..	10,713 0	0 6 0
		935 Iron boiler plates, 6-10½×3-8×½	30½	16,036 2	0 2 1
		944 " " 7-3×3-8×½	..	17,632 0	0 2 1
	III.	549 " round, 1"	..	51,586 0	0 0 9
		511 " scrap	..	1,655,447 8	0 0 2
		486 " peg	..	441,013 0	0 0 4
		974 " tube plates A and SB	..	14,331 0	0 2 9
	V.	66 Steel springs, 3½×½	..	21,913 0	3 2 0
		70 " " 4×½	..	42,393 0	0 2 0
		612 Tyres, wheel, steel, engine, and tender 3-4½	..	..	68 8 5
		621 " " " 5-4½	170	..	68 2 9
		652 " " " 4-7½	38	..	91 3 6
	VI.	657 Castings for cocks, brass	..	5,627 2	0 7 3
	VII.	1 Bars, fire	..	24,035 0	0 2 3
		Items less than Rs. 2,000	..	..	1,33,861 1 7
		Total	..	..	1,82,989 14 2
			..	..	3,16,850 15 9
B.	I.	207 Brasses, Axle, of classes	71	..	36 2 7
	II.	51 Handles, brass, for carriage door, with malleable staples	..	1,563 ..	1 8 6
	III.	632 Valves, stones, bronze, slide	42	..	61 7 0
	IV.	152 Cylinders, A, 18"	4	..	936 13 2
		164 " BA, BB, SB and SC, 17"	3	..	761 12 7
		400 Rods, piston, KA ₂ and KB ₂	40	..	70 13 7
		Items less than Rs. 2,000	..	..	16,415 14 8
		Total	..	..	73,131 13 10
			..	..	89,547 12 6
C.	I.	859 Oil, lubricating	..	19,770 0	0 1 10
		Items less than Rs. 2,000	..	..	32,086 7 11
		Total	..	..	34,351 12 11
D.	I.	3 Axles, steel, for carriage, 3½	320	..	39 14 3
		5 " Guards	814	..	9 10 10
		46 Casings, buffer, W. I.	753	..	11 14 11
		550 Chains, centre, iron	617	..	3 15 0
		862 Plates, corner, outside, for HSOG	2,209	..	1 2 4
		892 Rods, buffer, for wagons	340	..	15 9 4
	II.	56 Springs, bearing 16 plates, carriage	117	..	31 1 5
		68 " " buffer, HSOG, 19½"	374	..	5 9 0
		106 " " (Trimmises patent) 12½×5.	490	..	5 0 6
		127 Tyres steel, carriage and wagon 3' 2½"	1,085	..	46 10 11
		130 Under-frames, iron, for carriages	28	..	607 12 2
		138 Tyres, steel, carriage 3'1½"	814	..	46 0 6
		208 Zinc sheets plain, 5-9×3×21 BWG.	..	26,315 8	0 1 9
		212 " " 5-3×3×3×21 B WG.	..	56,431 8	0 1 9
		Items less than Rs. 2,000	..	..	1,39,240 15 7
		Total	..	..	47,005 6 10
			..	..	1,86,246 6 5

Name of ward.	Ledger.	Description of articles.	Quantity.	Rate.	Amount.
Vol. I.	Folio.	Fuel.	TONS.	CWTS.	QRS.
		Coke	453	2	2
		English coal	124	12	3
		Patent fuel	1,993	13	2
		Firewood	..	..	47,218,400
		Indian coal	333	8	3
		Total	..	..	..
		Timber.			
		Teak	C. ft.	79	284-6
		Trincomallee	"	2	097-1
		Red cedar wood	"	2	553-10
		Ben teak wood	"	2	467-11
		Items less than Rs. 2,000	..	..	..
		Total	..	..	..
		Stores at up-country stations.			
		Items less than Rs. 2,000	..	..	..
		Grand Total	..	..	..

STATEMENT C.

MADRAS RAILWAY—LOCOMOTIVE DEPARTMENT.

List of articles kept at up-country stations under safe custody *without value* on 31st December 1891.

Description of articles.	Quantity.	Madras.	Salt Colesure.	Central Station.	Arkhnam.	Katpadi.	Jalarpet.	Bangalore.	Bangalore City.	Salem.	Pedarur.	Calicut Station.	Benigunt.	Cuddapah.	Goody.	Ratichur.	Total quantity.	Rate per unit.	Amount.	Remarks.
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Springs, engines	..	11	..	..	..	..	16	..	..	..	..	4	5	..	2	4	45	75 10 0	8,403 2 0	
Do. tender	..	10	..	..	..	..	6	..	..	..	..	4	4	..	5	4	35	60 8 10	2,119 5 2	
Do. carriage	..	..	..	..	..	..	5	..	..	..	..	3	1	..	..	..	18	30 11 0	652 6 0	
Do. wagon	..	..	..	..	..	..	5	..	..	..	..	3	..	..	..	..	23	22 14 4	626 9 8	
Do. brake-van	..	..	..	..	..	..	5	..	..	..	..	..	..	..	..	..	4	12 0 6	72 0 0	
Do. steel, for slide valves	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	6 2 4	0 9 4	
Wheels, engines	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	833 12 4	3,335 1 4	
Do. tender	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	500 0 0	1,000 0 0	
Do. carriage and wagon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	294 3 0	1,470 15 0	
Chains, centre	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	62	3 15 0	244 2 0	
Do. side	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	36	4 10 0	166 8 0	
Arresters, W.I., for engines	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	127 3 10	763 7 0	
Valves, brass slide	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	35 15 8	179 14 4	
Tubes, brass, boiler	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5 or 130 lb.	0 5 0	40 10 0	
Tender drag bar spring	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	5 9 8	11 3 4	
Scoops, W.I. smoke	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	12	7 0 5	84 5 0	
Fittings, C.I., for smoke scoops	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	5 7 0	8 2 6	
Buffer plank with buffer head	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	9 9 0	9 9 0	
Lamps, hand	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2 2 0	4 4 0	
Do. gauge	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	0 15 0	3 12 0	
Do. English	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11/16	0 7 0	0 4 10	
Guards' lever for wagons	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	6 13 0	34 14 0	
Files of sorts and sizes	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	0 2 0	0 12 0	
Pipes, copper	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0 6 0	..	
Paint, black, mixed	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	per lb.	7 5 4	
Chairs, camp, iron	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	10 8	12 6 4	
Bolts and thimbles	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	12 6 4	12 6 4	
Handles, wooden, shovels	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	16	0 7 0	7 0 0	
Shovels, W.I., for spring pit, of sizes	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	23	0 2 0	2 14 0	
Flanks, teakwood	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0 2 4	0 4 8	
Do. dealwood	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	14	..	..	
Do. mango	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	..	..	
Total	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	40	..	14,061 13 10	

* This is an assumed rate.

STATEMENT D.

MADRAS RAILWAY—LOCOMOTIVE DEPARTMENT.

List of articles kept at Perambur under safe custody *without value* on 31st December 1891.

Leger folio.	Description of articles.	Quantity.	
		No.	lb. oz.
1.	Articles of furniture	15	..
2.	Fittings for boiler-makers' foreman inspection van	3	..
3.	Fittings for Agent's carriage	4	..
4.	" ambulance	1	..
5.	" inspection	24	..
6.	Blocks, wooden, triple sheave, iron strapped	10	..
7.	" " without sheaves	1	..
8.	" " double rope strapped	1	..
9.	" " without sheaves	1	..
10.	" " single sheave, iron strapped	17	..
11.	" " double rope strapped	1	..
12.	" " double " " "	2	..
13.	" " snatch	2	..
14.	" " galvanized double sheave	22	..
15.	" " iron, double sheave	4	..
16.	" " triple	27	..
17.	" " without sheaves	1	..
19.	" " double sheave for chain	1	..
20.	Basin	1	..
25.	Boards, wooden, for decoration	3	..
26.	Brackets, brass, hat	70	..
28.	Beams, iron, for tripod scale	4	..
29.	Box, sand, with gearing	2	..
31.	Coats, drill	4	..
32.	" serge	2	..
33.	" waterproof	7	..
36.	Cover, cap	1	..
38.	Chains, iron, for tripod scale	3	..
39.	" iron 1 1/2"	668	0
40.	" " 2"	236	8
41.	" " 3"	1,021	0
42.	" " 4"	124	8
43.	" " 6"	239	0
46.	" centre	129	..
49.	Cock injector	1	..
50.	Flags	85	..
51.	Desk top	1	..
54.	Hooks, iron, for rope blocks	5	..
60.	Punkahs, large	1	..
61.	" canvas in two pieces, with fittings	1	..
62.	" "	2	..
63.	Pulleys, wooden, blind	9	..
65.	Pipes, brass, hand rails	2	48 0
66.	Pipes, iron, gas, of sizes	14	477 14
68.	Piston heads, C.I.	3	..
70.	Rope, coil, hemp, tarred, 4"	686	0
73.	" " 5 1/2"	401	0
74.	" " 7"	2,511	0
75.	" " 10"	730	0
79.	Lamps, hand, signal, repaired	27	..
80.	Ring, iron, for rope blocks	2	..
81.	Regulator	1	..
84.	Spikes, iron, decoration, flag	5	..
85.	Staves, wooden, decoration	21	..
86.	Screens, scenery, canvas	3	..
87.	Lamps, gauge, repaired	2	..
88.	Pipes, copper, of sorts and sizes	2,117	..
91.	Turban	1	..
93.	Trowsers, drill (European watchman)	6	..
102.	Lamps, head, engine, repaired	29	..
106.	Chains, side or safety	281	..

List of articles kept at Perambur under safe custody *without value* on 31st December 1891—*cont.*

Ledger folio.	Description of articles.	Quantity.	
		No.	lb. oz.
155.	Helmets, red	2	...
161.	Springs, bearing, engine, driving	12	...
165.	" " trailing	1	...
168.	" " tender of classes	15	...
171.	Tubs, bath, iron	1	...
180.	Locks, draw, brass	5	...
182.	Lamps, hand, porters, repaired	1	...
183.	" " country, repaired	1	...
185.	Machine, weighing, complete	1	...
200.	Bolts, C.I., head, $1\frac{1}{2} \times \frac{1}{4}$	...	184

APPENDIX A.

EXTRACT from a letter from the Accountant-General, Public Works Department, Simla, No. 582 R., dated 18th June 1892.

Paragraph 5.—The system of store accounts as described by you does not appear to me at all satisfactory. The value of stores received should at once be brought on to the books of the Railway, by credit to an account head similar to "purchases" in State Railway Accounts, and similarly, stores removed from stock should be credited to account "stores" by debit to a head similar to "sales" on State Railways; these accounts "purchases" and "sales" will be subsidiary to "Capital Advance Account;" see paragraphs 8 to 11 of enclosure to Public Works Department Resolution, No. 210 A.R. of 13th March 1886.

Paragraph 6.—The system of keeping stores ledgers numerically only, and valuing the numerical balances at list rates instead of actual cost is not in my opinion one calculated to give correct results. If it could be satisfactorily established that the results are correct, the excess, ... in value of stores in hand over the ledger balance should be written back to the heads overcharged. I consider the Company should be pressed to put their store accounts on better footing and to adjust differences between ledger and store ledger balances half-yearly as is regularly done by the East Indian and other Companies.

No. 169.

Endorsement by the Consulting Engineer for Railways, dated Madras, 27th Mar. 1893.

Submitted to Government in continuation of endorsement No. 85, dated 15th February 1893 (G.O., No. 380 R., dated 20th February 1893).

2. It is observed that the Director-General of Railways in his No. 230 A.,*

* G.O., No. 2749 R., dated 17th Nov. 1892. dated 2nd November 1892, stated that these need not be submitted to him in future.

ORDER—dated 6th April 1893, No. 662 R., Public Works.

The Government directs that, before further action be taken on the report now submitted by the Examiner, Guaranteed Railway Accounts, Madras, the Agent and Manager, Madras Railway, be asked to inquire into the several points raised therein and furnish Government with an expression of his views regarding them.

(True Extract.)

Major, R.E.,
Offg. Under-Secy. to Govt., P.W.D.,
Railway Branch.

To the Consulting Engineer for Railways.
" Examiner, Guaranteed Railway Accounts.

Exd. A D. Xavier.
Spare Copies

RAILWAY.

Govt. of {1893} Madras.

PUBLIC WORKS.

Dated April, 6th.

Recd.

Encl

G.O., 6th April 1893, No. 662 R.

APRIL.

Store Balances

Requesting that an expression of the views of the Agent and Manager, Madras Railway, be furnished on the several points raised in the report on result of a test examination of the — of the Locomotive Department, Madras Railway.

MARCH 1893, No. 662 R., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Railway.

Read the following paper:—

From the Examiner, Guaranteed Railway Accounts, Madras, to the Consulting Engineer for Railways, dated Madras, 28th February 1893, No. 129 A.

I have the honour, in continuation of my No. 29, dated 18th ultimo, to report the result of a test examination of the store balances of the Locomotive Department.

2. The amount at debit of suspense in the Audit office ledgers on account of the Locomotive Department on 31st December 1891 was Rs. 10,55,975-15-1.

3. In support of this balance I was furnished with the statement hereto annexed and marked A, amounting to Rs. 10,98,530-15-9, which, it may be observed, is Rs. 42,555-0-8 in excess of the Audit office balances.

4. From a perusal of list A, I noticed that the total assets had been unduly reduced by the following items:—

	RS.	A.	P.
Pendencies	21,994	12	9
Credit balance on Indian coal account	8,845	4	4
Total	30,840	1	1

5. In the course of investigation it further transpired that a balance of about Rs. 60,000 expended on articles in course of manufacture but unfinished on 31st December had not been dealt with as an asset of the Company and included in the list.

6. The items referred to in paras. 4 and 5 will still further augment the excess of actual stock over the audit ledger balances.

7. The question of pendencies was fully dealt with in para. 8 (m) of my report on the Engineering Department and the same necessity exists in the Locomotive, as in the Engineering and other departments, of establishing a system by which the large balance of pendencies may be reduced to a minimum.

8. The credit balance on the Indian fuel account is fully reported on in para. 11 (h) hereinafter.

9. The statement marked A previously referred to did not contain any details of quantities and, prices of stock in hand, and for the purpose of test audit, it therefore became necessary for me to see the actual detailed stock lists which were promptly produced by the Locomotive Superintendent.

10. From the lists furnished by the Locomotive Superintendent, I extracted a statement showing the quantities and prices of all articles in store exceeding Rs. 2,000 in value and this statement is appended and marked B.

11 (a) Having thus obtained the details of the principal items of stock in hand, I proceeded to compare the prices fixed on the articles with current market rates and to generally test the accuracy of the balances.

(b) I found that the system in force is to maintain quantity ledgers only, but as in the case of all important articles this system involves the upkeep of separate priced accounts current, I formed the opinion that very little extra labour would be required to keep priced ledgers for all important articles as suggested in my report on the Engineering department.

(c) With the exceptions of coal and firewood referred to in separate paragraphs, the stocks on hand agreed with the ledger balances and had from time to time been tested by the permanent staff of stock-takers employed in the Audit branch.

(d) *Firewood Account, Rs. 1,04,285-5-0.*—

(i) The locomotive stock ledger showed an excess quantity of 23,828,560 lb. over the stock lists owing to wood received and not paid for having been excluded from the audit ledgers.

(ii) A system is necessary as on State lines of taking all stock received to debit of stores and of crediting unpaid bills to the store purchase account; (the value of the firewood omitted from the accounts was Rs. 51,753.)

(iii) The stock taken to account seemed to be as fairly valued as possible on a system of averages, viz, at Rs. 2-3-4 compared with Rs. 2-2-9, the average cost of wood received during the period.

(e) *Coke Account, Rs. 11,024-10-3.*— The value of this stock was under stated by about Rs. 1,468, the value per ton being taken at Rs. 24-5-5, whereas the actual average cost was about Rs. 27-9-3 per ton. This was due to the issue rate having been somewhat too high.

(f) *English Coal, Rs. 3,225-10-2.*— The value of this stock was also slightly under-stated in the lists, the price being fixed at Rs. 25-14-6 against a cost price of Rs. 26-11-7; the reduction in price was due to a small surplus stock brought out by stock-taking and to the fact of specially augmented rates having been charged to other departments and in private work bills.

(g) *Patent Fuel, Rs. 42,353-2-5.*— This stock was also undervalued to the extent of about Rs. 2,388, the price having been fixed at Rs. 21-3-11 against a cost price of Rs. 22-7-1; the reduction in price is due to the same causes as those referred to in para. (f) regarding English coal.

(h) *Indian Coal, Cr. Rs. 8,845-4-4.*—

(i) The stock lists showed a credit balance of Rs. 8,845-4-4 in amount and a debit balance of 333 tons in quantity.

(ii) Valuing the 333 tons at Rs. 14-12-6 per ton, which was the average actual cost of fuel purchased, the value of Indian coal has been understated in the stock lists by Rs. 13,773.

(iii) This understatement would have been still greater but for the fact that an amount of Rs. 5,182 which was deficient on Trincomallee timber account had been transferred in the previous half-year in reduction of the excess balance on the coal account.

(iv) Such adjustments should not, in my opinion, be made without previous sanction and record at official meeting.

(v) The excess on the stock of coal may be due to a system which obtains of adding 5 per cent. for wastage to the actual issues to drivers.

If this is the case, it may be possible to reduce the percentage, as such excesses in stock may lead to speculation.

I cannot find any authority of Government to charge this rate of 5 per cent. for wastage.

(vi) Again 5,451 tons of coal costing Rs. 80,617, received during the half-year have been omitted from the stock lists owing to the want of system referred to in para. (d) of taking unpaid bills to debit of stock and credit of purchase account.

(i) Teak Timber, Rs. 2,68,589-18-10—

(i) The balance on this account was made up as follows:—

	C	FT.	IN.	
Scantling in the mill—				
Best	2,862	7.		
Rough at 96 cubic feet				
per ton	22,339	0		
Waste at 110 do. ...	1,025	0		
" 52 lbs. per cub. ft.	66	0		
Uncut logs	697	4		
Scantlings in the shed,				
best	16,337	8		
	43,327	7	@ Rs. 4-8-1 =	Rs. 1,95,112
Uncut logs	992	3	@ " 2-4-8 =	" 2,273
Do.	34,964	8	@ " 2-0-7 =	" 71,204
Total				Rs. 2,68,589

(ii) The price of scantling shown above was double the price of timber in log, resulting in an apparent loss by wastage and cutting of 100 per cent.

(iii) But as the actual wastage of the period worked out to 50 per cent. only, the price of teak scantling would appear to have been much overstated.

(iv) Thus if to the price in log, Rs. 2-4-8, 50 per cent. be added for wastage and cutting or Rs. 1-2-4, the price of scantling would be Rs. 3-7-0 per cubic foot instead of Rs. 4-8-1 as shown in the stock lists (even a figure of Rs. 3-7-0 is apparently high as the issues of teak timber from the Engineering stocks during the same period were made at the rate of Rs. 2-5-0 per cubic foot.)

(v) The teak scantling account would therefore appear to have been over-valued by at least Rs. 46,260 owing to the excess price on scantling.

(vi) Again, 697 cubic feet of uncut logs in the mill awaiting manufacture have been priced as scantling at Rs. 4-8-1 instead of as uncut logs at Rs. 2-4-8, resulting in a further over-valuation of about Rs. 1,543.

(vii) The teak scantling has therefore apparently been over-valued to the extent of about Rs. 47,800 in all.

(viii) This error is, in my opinion, due to the absence of priced saw mill and scantling accounts.

(ix) Under the procedure in force quantities alone were dealt with and a periodical account current of all receipts, issues and charges was prepared and priced.

(x) The balance brought out by this account was assumed to represent the value of the stock in hand, logs being first valued at cost price and the residue assumed to be the value of the scantling.

(xi) By this system all errors in accounting or pricing were added to the value of scantling. As an instance of how errors have arisen, I may state that in a preceding half-year when the value of the starting balance was Rs. 5-8-0 per cubic foot, the issues to works were made at Rs. 3 per cubic foot and the difference of Rs. 2-8-0 per foot was therefore thrown upon the value of the balance in hand at the end of the period which thereby became unduly augmented to a value of Rs. 7 per cubic foot.

(xii) The following priced accounts would appear to be necessary to permit timber transactions being correctly recorded.

(xiii) A saw-mill account taking to debit all logs and scantling sent in for cutting and the cost of the operations and credit; by issue to works or store accounts of each quality; for the actual value of the outturn.

(xiv) Separate scantling accounts of each quality to be debited with saw-mill outturn and credited by actual issues or sales.

(xv) A log store account to be debited with the actual cost of and charges on, logs taken into store, and credited with the value of the actual issues to saw-mill, works or other heads.

at/-

(j) The following discrepancies were discovered in the value fixed upon the important items, viz.:—

Name of article.	Quantity.		Rate fixed in stock lists.	Average rate paid for actual purchase during the period.	DIFFERENCE IN VALUE OWING TO DIFFERENCE IN RATES.			
					Excess valued in stock lists.		Short valued in stock lists.	
	UNIT.	NO.	LS. OZ.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	
Axles, crank, steel, A class. . .	..	13	..	620 5 3	604 3 0	209 13 3	..	..
Do. do. KA ₂ and KB ₂ ..	..	18	..	620 5 3	611 7 4	159 10 6	..	..
Do. do. BP, BB, SC and SB. . .	..	6	..	620 5 3	632 8 0	..	73 0 6	..
Copper ingots ..	..	..	19,248 4	0 6 2	0 4 5	2,105 4 5	..	..
.. tube plates of classes ..	..	..	10,713 0	0 6 0	0 6 7	..	390 9 3	..
Tyres, wheel, steel, engine and tender, 5' 4 1/2" ..	..	38	..	68 2 9	97 0 2	..	1,095 13 10	..
Castings for cocks, brass ..	..	..	5,627 2	0 7 3	0 7 6	..	87 14 9	..
Valves, Stones, bronze, slide ..	..	42	..	61 7 0	39 2 4	936 4 0	..	..
Cylinders, BA, BB, SB and SC, 17" Pairs. . .	..	3	..	761 12 7	761 2 7	1 14 0	..	..
Rods, piston KA ₂ and KB ₂ ..	..	40	..	70 13 7	70 14 7	..	2 8 0	..
Casings, buffer, W.I. ..	..	753	..	11 14 11	13 1 3	..	862 13 0	..
Springs, buffer (Tremmises patent) 12 1/2 x 5 ..	..	490	..	5 0 6	4 7 7	273 1 2	..	..
Tyres, steel, carriage and wagon, 3' 2 1/2" ..	..	1,085	..	46 10 11	35 7 10	12,144 1 5	..	..
Under-frames, iron, for carriages ..	..	28	..	607 12 2	604 14 2	80 8 0	..	..
Tyres, steel, carriage, 3' 1 1/2" ..	..	314	..	46 0 6	36 11 10	2,917 9 4	..	..
Zinc sheets, plain, 5-9 x 3 x 21 BWG. . .	..	..	26,315 8	0 1 9	0 2 2	..	685 4 10	..
Do. 5-3 x 3-3 x 21 ..	..	..	..	..	..	..	..	..
BWG. ..	..	..	56,431 8	0 1 9	0 2 5	..	2,351 5 0	..
Total ..	..	..	..	..	..	18,828 2 1	5,549 5 2	..
Net difference ..	..	..	..	..	..	13,278 12 11	..	..

(k) The following complicated system of pricing was and is still in force and would appear to require revision, viz.:—

(i) Separate rates of issue are fixed periodically by the Locomotive Superintendent for issues to the Locomotive Department, issues to other departments, issues to Company's servants, and issues to private persons or works.

(ii) Issues to other departments and private persons are priced at considerably higher rates than the rate charged in the Locomotive Department, and, in the event of large transactions, this complicated system must result in a serious derangement of the average prices.

(iii) Again as the increased charges are intended to cover supervision, exchange and charges of a general nature, many of which do not pass through the Stores Account, the system would appear to be absolutely erroneous.

(iv) There should, in my opinion, be one rate of issue only fixed for each article irrespective of the department or work to which it is issued.

(v) Supervision and similar charges payable by other departments or outsiders should be provided for by addition of special percentages, as is the custom on other railways.

(l) The balances at debit of Locomotive Department shown in the audit ledger and the locomotive balance sheets were at the period under review inclusive of both stores and workshop transactions and it was impossible to ascertain monthly from these records the separate value of stores and of workshop balances.

This system has, at my request, been subsequently modified and the locomotive returns made to show the transactions separately.

(m) Stores at up-country depots:—

(i) As in the case of the Engineering Department, a large amount of detailed ledger-keeping is thrown upon Foremen at out-stations which might be avoided by a system of imprests.

(ii) The Foremen now keep unpriced ledgers which are periodically balanced and the result sent to the Head office for valuation.

(iii) It is noticed that a considerable stock of springs, side chains, spare wheels, &c., in the hands of Foremen have not been included in this Head office valuation.

(iv) These omissions may roundly be stated at Rs. 14,000 (vide statement C).

(v) It is stated in explanation that these items have been charged off to works as soon as they were issued to the Foremen which is irregular.

(vi) A system of imprests would also remedy this as well as save time in accounting as suggested in paragraph 1.

(n) It is satisfactory to note that there is not the same reason to complain of the re-urged stores system as there was in the case of the Engineering Department, although there are some few items borne on the books without value at Perambore, which, it is estimated, are worth about Rs. 5,000 (*vide* statement D).

12 (i). Until the receipt of recent orders to reduce the pay of the appointment of the Locomotive Accountant, that officer had been under the direct control of the Company's Auditor.

(ii) Since the reduction, he has however been placed beyond the jurisdiction of the Auditor.

(iii) This was not a necessary sequence to the Government order to reduce the pay of the appointment and in my opinion the old system should be reverted to.

(iv) Although the Board in its No. 867, dated 27th May 1892, suggested the Locomotive Accountant being put under the direct control of the Locomotive Superintendent, the actual sanction by Government was to an accountant for the Audit Office Establishment whose pay should be allocated to Locomotive Department as is the usual custom.

(v) The Locomotive Accountant as on State lines, should, in my opinion, hold the same relations to the Locomotive Superintendent and auditor as an accountant on the Public Works Department does to his Executive Engineer and Examiner.

13. Before concluding, I would beg to recapitulate the following important points noted in this report and to ask you to take such action thereon as you may consider expedient. In this respect, I would further draw special attention to an opinion expressed by the Accountant-General, Public Works Department, in his No. 582 R., dated 18th June 1892, printed as Appendix A on several of the points herein raised;

(a) The audit ledgers and locomotive balances should at once be made to agree.

(b) The manufacture balance should be treated as an asset and added to the audit ledger balances.

(c) As suggested in my report on the Engineering Department—

(i) The system of pendencies should be improved.

(ii) Priced ledgers should be kept for all important articles.

(iii) A system of imprests should be introduced to reduce ledger-keeping at out-stations.

(iv) All stores standing on the books without value should be appraised and taken to account.

(v) All important stock adjustments should be submitted for the approval of the Consulting Engineer to Government.

(d) The following apparent discrepancies should be investigated and explained and, if necessary, adjusted in the accounts and stock lists; the net reduction in value being met by reducing the total excess of locomotive stock over the audit balances before making the adjustment suggested in paragraph (a).

	Excess value entered in stock lists. RS.	Short value entered in stock lists. RS.
Coke para. 11 (e)	...	1,468
Patent fuel, para. 11 (g)	...	2,388
Indian coal, para. 11 (h, ii)	...	13,773
Teak, timber, para. 11 (i, vii)	47,800	...
Sundry items — <i>vide</i> para. 11 (j)	13,279	...
Total ...	61,079	17,629

(e) To prevent such large items as Rs. 51,753 on firewood and Rs. 80,617 Indian coal being omitted from the stock lists, a system should be introduced of taking to account all articles received into store, whether paid for or not, by means of a purchase account.

(f) The system of charging varying prices for the same article should be abandoned, and supervision, &c., arranged for by the addition of special percentages.

(g) The system of accounting for timber should be considered and if thought necessary revised — *vide* para. 11 (i) XII.

(h) The question of the position of the Locomotive Accountant should be considered and finally settled—*vide* para. 12.

(i) The rate allowed for wastage on coal should be tested and a rate for future guidance recorded at official meeting.

14. The net financial results of my investigation would appear to be as follows:—

	RS.
(i) The lists of locomotive suspense balances submitted amounted to	10,98,531
(ii) These lists omitted the following items, viz.:—	
Unfinished works about	60,000
Short value on stores— <i>vide</i> para. 13 (d)	17,629
Coal and firewood received but not paid for— <i>vide</i> para. 13 (e)	1,32,370
Debits to clear pendencies— <i>vide</i> para. 4	21,994
Stores borne on the books without value— <i>vide</i> paras. 11 (m) iv and (n)	19,000
Total omissions	2,50,993
(iii) And included the following errors:—	
Over-valuation owing to excessive prices— <i>vide</i> para. 13 (d)	61,079
(iv) Resulting in a net omission of	1,89,914
(v) and a total value of stores and unfinished works in charge of the locomotive of	12,88,445

instead of Rs. 10,98,531 as shown in the lists submitted for inspection.

(vi) The above figures show that the locomotive stock lists as submitted are nearly Rs. 1,90,000 short of the value of the stock in charge of the Locomotive department and that a very serious error has apparently been made in pricing the stock of teak timber.

(vii) The Audit office books, moreover, understate the value of the Locomotive department assets by Rs. 2,32,469 and omit liabilities for stores purchased to the extent of Rs. 1,32,370.

15. Attention having recently been called to the heavy store balances of the Madras Railway, I would finally point out that the balances complained of in the Government of India letter do not fully state the value of the stock in hands of the Company owing to the system referred to in this report of omitting to take into the stock lists the value of stores purchased on credit and to the system in the Engineering Department of omitting to price certain returned stores.

(Signed) J. LIGHTFOOT.
Examiner, Railway Accounts, Madras.

ENCLOSURES.
STATEMENT A.
MADRAS RAILWAY—LOCOMOTIVE DEPARTMENT.
Stock of Stores on hand on 31st December 1891.

Ward.	Number of Ledgers.	Amount.	Total.
		RS. A. P.	RS. A. P.
A or Metal ward	1	67,080 7 11	
	2	85,773 15 7	
	3	67,679 2 2	
	4	24,217 5 2	
	5	47,212 14 2	
	6	25,756 0 2	
	7	12,095 14 1	
		3,29,815 11 3	
Less pendencies		12,964 11 6	
			3,16,850 15 9

C. Parthasarthy

6

TH MARCH 1893, No. R., PUBLIC WORKS.

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STATEMENT A—continued.

Stock of Stores on hand on 31st December 1891—cont.

Ward.	Number of Ledgers.	Amount.	Total.
		RS. A. P.	RS. A. P.
B or Hardware ward...	{ 1 2 3	33,003 11 7 17,017 15 3 20,979 6 10	
Less pendencies ...	...	71,001 1 8 3,618 3 2	67,382 14 6
C or Dry saltery ward ...	{ 1 2	21,942 9 8 15,663 1 9	
Less pendencies ...	...	37,605 11 5 3,253 14 6	34,351 12 11
D or Carriage iron work ...	{ 1 2	70,819 4 4 1,16,297 9 8	
Less pendencies ...	...	1,87,116 14 0 870 7 7	1,86,246 6 5
B Duplicate parts of Engines	1	23,452 6 0	
Less pendencies ...	...	1,287 8 0	22,164 14 0
Fuel—	1		
Coke ...	...	11,024 10 3	
English coal ...	...	3,225 10 2	
Patent fuel ...	...	42,353 2 5	
Indian coal ...	...	8,845 4 4	
Firewood ...	...	1,04,285 5 0	1,52,043 7 6/-
Timber—	1		
Teak ...	...	2,68,589 13 10	
Mango planks...	...	913 1 5	
Trincomallee ...	...	5,735 12 9	
Verundidu ...	...	18 0 0	
Red cedar wood ...	...	2,556 12 2	
Erool wood ...	...	170 15 6	
Wite cedar wood ...	...	140 12 7	
Irambugam ...	...	3 8 4	
Chola benteak ...	...	13 0 0	
Poon planks ...	...	747 1 9	
Benteak wood ...	...	2,725 5 5	2,81,614 3 9
Stores at upcountry stations—			
Madras (Rayapuram) ...	...	5,299 10 9	
Salt Cotaura ...	...	666 7 0	
Central Station ...	...	760 7 11	
Arkónam ...	...	744 3 4	
Kátpádi ...	...	391 3 1	
Jolárpét ...	...	4,905 7 11	
Bangalore ...	...	2,442 4 7	
Bangalore City ...	...	476 6 9	
Salem ...	...	1,819 12 4	
Pódanúr ...	...	9,100 13 10	
Olavakód ...	...	63 0 3	
Calicut ...	...	967 14 3	
Rénigunta ...	...	3,419 3 7	
Cuddapah ...	...	1,535 0 11	
Gooty ...	...	3,864 13 8	
Raichur ...	...	1,419 6 9	37,876 4 11
Grand total ...			10,98,530 15 9

STATEMENT B.

MADRAS RAILWAY—LOCOMOTIVE DEPARTMENT

Lists of items of stores exceeding Rs. 2,000 in value on 31st December 1891.

Name of ward.	Ledger.	Description of articles.	Quantity.	Rate.	Amount.			
	Vol.	Folio.	UNIT.	NO.	lbs. oz.	RS. A. P.	RS. A. P.	
A.	I.	4	Axles, crank steel, A class	13	..	620 5 3	8,064 4 3	
		5	" " KA ₂ and KB ₂	18	..	620 5 3	11,165 14 6	
		6	" " BP, BB, SC & SB	6	..	620 5 3	3,721 15 6	
		89	Brass, old	..	24,851 4	0 3 0	4,659 9 9	
		107	" tubes, boiler, 11-1×2	..	24,495 0	0 6 0	7,654 11 0	
	II.	118	" Repd., 11-2×1½	521	11,464 0	0 4 0	2,868 0 0	
		216	Blocks, brake, C. Engine Fd.	711	..	3 1 9	2,210 12 3	
		200	Copper back plates of classes	..	7,176 0	0 6 0	2,691 0 0	
		238	" ingots	..	19,248 4	0 6 2	7,418 9 6	
		237	" scrap	..	24,006 7	0 4 0	6,001 9 9	
		340	" rod, ½"	..	7,954 0	0 5 7	2,777 2 10	
		348	" " 1"	..	7,482 6	0 5 7	2,611 0 7	
		415	" tubes, boiler, for repair, 1½"	..	8,357 0	0 4 0	2,089 4 0	
		419	" plates of classes	..	10,713 0	0 6 0	4,017 6 0	
		935	Iron boiler plates, 6-10½×3-8×½	30½	16,036 2	0 2 1	2,088 0 7	
	III.	944	" " 7-3×3-8×½	..	17,682 0	0 2 1	2,295 13 4	
		549	" round, ½"	..	51,586 0	0 0 9	2,418 1 6	
		511	" scrap	..	1,655,447 8	0 0 2	17,244 8 11	
		486	" peg	..	441,013 0	0 0 4	9,187 12 4	
		974	" tube plates A and SB	..	14,331 0	0 2 9	2,463 2 3	
	V.	66	Steel springs, 3½×½	..	21,913 0	3 2 0	2,739 2 0	
		70	" " 4×½	..	42,393 0	0 2 0	5,299 2 0	
		612	Tyres, wheel, steel, engine, and tender 3-4½	170	..	68 8 5	11,649 6 10	
		623	" " " 5-4½	38	..	68 2 9	2,590 8 6	
		652	" " " 4-7½	22	..	91 3 6	2,006 13 0	
VI.	657	Castings for cocks, brass	..	5,627 2	0 7 3	2,549 12 8		
VII.	1	Bars, fire	..	24,035 0	0 2 3	3,379 14 9		
							1,33,861 1 7	
Items less than Rs. 2,000							1,82,989 14 2	
Total							3,16,850 15 9	
B.	I.	207	Brasses, Axle, of classes	71	..	36 2 7	2,567 7 5	
		51	Handles, brass, for carriage door, with malleable staples	1,563	..	1 8 6	2,393 5 8	
	III.	632	Valves, stones, bronze, slide	42	..	61 7 0	2,580 6 0	
		152	Cylinders, A, 18"	Pairs. 4	..	936 13 2	3,747 4 8	
	IV.	164	" BA, BB, SB and SC, 17"	3	..	761 12 7	2,283 7 9	
		400	Rods, piston, KA ₂ and KB ₂	40	..	70 13 7	2,843 15 4	
								16,415 14 8
	Items less than Rs. 2,000							73,131 13 10
	Total							89,547 12 6
	C.	I.	869	Oil, lubricating	..	19,770 0	0 1 10	2,265 5 0
Items less than Rs. 2,000			..	..	..	32,086 7 11		
Total		..	..	..	..	34,351 12 11		
D.	I.	3	Axles, steel, for carriage, 3½"	320	..	39 14 3	12,765 6 0	
		5	" Guards	814	..	9 10 10	7,877 2 4	
		46	Casings, buffer, W. I.	753	..	11 14 11	8,985 0 3	
		550	Chains, centre, iron	617	..	3 15 0	2,429 7 0	
		862	Plates, corner, outside, for HSOG	2,209	..	1 2 4	2,531 2 4	
	II.	892	Rods, buffer, for wagons	340	..	15 9 4	5,298 5 4	
		56	Springs, bearing 16 plates, carriage	117	..	31 1 5	3,637 5 9	
		68	" buffer, HSOG, 19½"	374	..	5 9 0	2,080 6 0	
		106	" " (Trimmises patent)	490	..	5 0 6	2,465 6 0	
		127	Tyres steel, carriage and wagon 3' 2½"	1,085	..	46 10 11	60,650 4 7	
		130	Under-frames, iron, for carriages	28	..	607 12 2	17,017 4 8	
		138	Tyres, steel, carriage 3'1½"	314	..	46 0 6	14,453 13 0	
		208	Zinc sheets plain, 6-9×3×21 BWG.	..	26,315 8	0 1 9	2,878 4 2	
		212	"WG. " " 5-3×3×21 B	..	66,431 8	0 1 9	6,172 3 2	
Items less than Rs.2,000							47,005 6 10	
Total							1,86,246 6 5	

Name of ward.	Ledger.	Description of articles.	Quantity.				Rate.	Amount.
Vol. L.	Folio.	Fuel.	TONS.	CWTS.	QRS.	LBS.	RS. A. P.	RS. A. P.
		Coke	453	2	2	24	24 5 5	11,024 10 3
		English coal	124	12	3	3	25 14 6	3,225 10 2
		Patent fuel	1,993	13	2	2	21 8 11	42,353 2 5
		Firewood	..	..	..	47,218,400	{ 2 3 4 per 1,000 lb }	1,04,285 5 0
		Indian coal	533	8	3	19	2 0 0	8,845 4 4
		Total ..	..	..	..	..	..	1,52,043 7 6
		Timber.						
		Teak	C. ft.	79		284-6	Various.	2,58,589 13 10
		Trincomallee	"	2		097-1	Do.	5,735 12 9
		Red cedar wood	"	2		553-10	Do.	2,556 12 2
		Ben teak wood	"	2		467-11	Do.	2,725 5 5
		Items less than Rs. 2,000 ..	..	..	..	..	..	2,79,607 12 2
		Total ..	..	..	..	..	..	2,81,614 3 9
		Stores at up-country stations.						
		Items less than Rs. 2,000 ..	..	..	..	..	..	37,876 4 11
		Grand Total ..	..	..	..	..	..	10,98,530 15 9

5/-

Reminders

STATEMENT C.
MADRAS RAILWAY—LOCOMOTIVE DEPARTMENT.
List of articles kept at up-country stations under safe custody without value on 31st December 1891.

Description of articles.	Quantity.	Madras.	Salt Cothure.	Central Station.	Arkonam.	Katpadi.	Jalarpet.	Bangalore.	Bangalore City.	Salem.	Podanur.	Calicut Station.	Benigantha.	Cuddapah.	Goody.	Katchur.	Total quantity.	Rate per unit.	Amount.	Remarks.
Spring, engines ..	No.	11			3		16					4	6		2	4	45	75 10 0	3,403 2 0	
Do. tender ..	"	10			2		6					4	4		5		35	60 8 10	2,119 6 2	
Do. carriage ..	"						2					3	4				18	30 11 0	652 6 0	
Do. wagon ..	"	4			2		5					3	1				23	22 14 4	526 9 8	
Do. brake-van ..	"				1		5										4	12 0 6	72 3 0	
Do. steel, for slide valves	"						1										4	6 2 4	0 9 4	
Wheels, engines ..	Pairs.						1					3	4				833	12 4 4	3,335 1 4	
Do. tender ..	"						1										2	500 0 0	1,000 0 0	
Do. carriage and wagon	"						3										62	294 3 0	1,470 15 0	
Chains, centre ..	No.				9		8					13	1		12	11	36	3 15 0	244 2 0	
Do. side ..	"				6		14								6		6	4 10 0	166 8 0	
Arresters, W.I., for engines	"														5		5	127 3 10	763 7 0	
Valves, brass slide ..	"														5		5	35 15 8	179 14 4	
Tubes, brass, boiler ..	"						4										5 or 130 lb.	0 5 0	40 10 0	
Tender drag bar spring	"									1							2	per lb.	11 3 4	
Scoops, W.I., smoke	"	12															12	5 9 8	84 5 0	
Fittings, C.I., for smoke scoops	"														3		3	5 7 0	8 2 6	
Buffer plank with buffer head	"																1	per set.	9 9 0	
Lamps, hand ..	"																4	2 2 0	4 4 0	
Do. gauge ..	"																4	0 15 0	3 12 0	
Twine, English ..	lb.			11/16			1										11/16	0 7 0	0 4 10	
Guards' lever for wagons	No.						6										6	5 13 0	34 14 0	
Files of sorts and sizes	"																6	0 2 0	0 12 0	This cannot be priced as the weight is not known.
Pipes, copper ..	"																1	0 6 0	..	
Paint, black, mixed	Gallons.																2	per lb.	7 5 4	
Chairs, camp, iron ..	No.																1	12 6 4	12 6 4	
Bolts and thimbles	"																16	0 7 0	7 0 0	
Handles, wooden, shovels	"																23	0 2 0	2 14 0	
Sockets, W.I., for spring pin, of sizes.	"																2	0 2 4	0 4 8	
Planks, teakwood ..	"																14	..	..	These cannot be priced as their capacity is not known.
Do. dealwood ..	"																6	..	..	
Do. mango ..	"																40	..	..	
Total ..	..																..	..	14,061 13 10	

• This is an assumed rate.

STATEMENT D.

MADRAS RAILWAY—LOCOMOTIVE DEPARTMENT.

LIST of articles kept at Perambūr under safe custody *without value* on 31st December 1891.

Ledger folio.	Description of articles.	Quantity.	
		No.	lb. oz.
1.	Articles of furniture	15	...
2.	Fittings for boiler-makers' foreman inspection van	3	...
3.	Fittings for Agent's carriage	4	...
4.	" ambulance "	1	...
5.	" inspection "	24	...
6.	Blocks, wooden, triple sheave, iron strapped	10	...
7.	" " " without sheaves	1	...
8.	" " double rope strapped	1	...
9.	" " " without sheaves	1	...
10.	" " single sheave, iron strapped ...	17	...
11.	" " " double rope strapped	1	...
12.	" " double " " " " " "	2	...
13.	" " snatch	2	...
14.	" galvanized double sheave	22	...
15.	" iron, double sheave	4	...
16.	" " triple "	27	...
17.	" " " without sheaves	1	...
19.	" " double sheave for chain	1	...
20.	Basin	1	...
25.	Boards, wooden, for decoration	3	...
26.	Brackets, brass, hat	70	...
28.	Beams, iron, for tripod scale	4	...
29.	Box, sand, with gearing	2	...
31.	Coats, drill	4	...
32.	" serge	2	...
33.	" waterproof	7	...
36.	Cover, cap	1	...
38.	Chains, iron, for tripod scale	3	...
39.	" iron $\frac{1}{8}$ "	...	668
40.	" " $\frac{3}{8}$ "	...	236
41.	" " $\frac{5}{8}$ "	...	1,021
42.	" " $\frac{1}{2}$ "	...	124
43.	" " $\frac{3}{8}$ "	...	239
46.	" centre	129	...
49.	Cock injector	1	...
50.	Flags	85	...
51.	Desk top	1	...
54.	Hooks, iron, for rope blocks	5	...
60.	Punkahs, large	1	...
61.	" canvas in two pieces, with fittings	1	...
62.	" " " " " " " "	2	...
63.	Pulleys, wooden, blind	9	...
65.	Pipes, brass, hand rails	2	48
66.	Pipes, iron, gas, of sizes	14	477
68.	Piston heads, C.I.	3	...
70.	Rope, coil, hemp, tarred, 4" ...	...	686
73.	" " $5\frac{1}{2}$ "	...	401
74.	" " 7"	...	2,511
75.	" " 10"	...	730
79.	Lamps, hand, signal, repaired	27	...
80.	Ring, iron, for rope blocks	2	...
81.	Regulator	1	...
84.	Spikes, iron, decoration, flag	5	...
85.	Staves, wooden, decoration	21	...
86.	Screens, scenery, canvas	3	...
87.	Lamps, gauge, repaired	2	...
88.	Pipes, copper, of sorts and sizes	...	2,117
91.	Turban	1	...
93.	Trowsers, drill (European watchman)	6	...

LIST of articles kept at Perambūr under safe custody *without value* on 31st December 1891—*cont.*

Ledge folio	Description of articles.	Quantity.		
		No.	lb.	oz.
102.	Lamps, head, engine, repaired	29	...	...
106.	Chains, side or safety	281	...	...
155.	Helmets, red	2	...	...
161.	Springs, bearing, engine, driving	12	...	...
165.	" " trailing	1	...	...
168.	" " tender, of classes	15	...	...
171.	Tubs, bath, iron	1	...	...
180.	Locks, draw, brass	5	...	...
182.	Lamps, hand, porters, repaired	1	...	...
183.	" " country, repaired	1	...	...
185.	Machine, weighing, complete	1	...	...
200.	Bolts, C.I., head, $1\frac{1}{2} \times \frac{3}{4}$	...	...	184

APPENDIX A.

EXTRACT from a letter from the Accountant-General, Public Works Department, Simla, No. 582 R., dated 18th June 1892:

Paragraph 5.—The system of store accounts as described by you does not appear to me at all satisfactory. The value of stores received should at once be brought on to the books of the Railway, by credit to an account head similar to "purchases" in State Railway Accounts, and similarly, stores removed from stock should be credited to account "stores" by debit to a head similar to "sales" on State Railways; these accounts "purchases" and "sales" will be subsidiary to "Capital Advance Account"; see paragraphs 8 to 11 of enclosure to Public Works Department Resolution, No. 210 A.R., of 13th March 1886.

Paragraph 6.—The system of keeping stores ledgers numerically only, and valuing the numerical balances at list rates instead of actual cost is not in my opinion one calculated to give correct results. If it could be satisfactorily established that the results are correct, the excess, ... in value of stores in hand over the ledger balance should be written back to the heads overcharged. I consider the Company should be pressed to put their store accounts on better footing and to adjust differences between ledger and store ledger balances half-yearly as is regularly done by the East Indian and other Companies.

PUBLIC WORKS DEPARTMENT.

OFFICE OF CONSULTING ENGINEER FOR RAILWAYS,

Madras, 27th March 1893.

Letter from the Examiner,
Railway Accounts, Madras, No.
129 A, dated 28th February 1893.

No. 169

SUBMITTED _____ to Government in

continuation of endorse-
ment No. 85, dated 15th
February 1893 (G.O. No. 3808,
dated 20th February 1893).

2. It is observed that
the Director General of
Railways in his No. 230 A,
dated 2nd November 1892,
stated that these need not
be submitted to him in
future.

* G.O. No. 27498
17.11.92

and will
for Cons. Eng. for R.

From

THE CONSULTING ENGINEER

FOR RAILWAYS,

Madras,

No.

169

Dated

27th

Received

28th

} March 1892.

No. of ENCLOSURES.

Subject.

Report from the Engineer
of Ry. Accts. Madras in the
result of a test examination
of the share balances of the
Locomotive Dept. Madras
Ry.

149
A. 662 R 6 April 1893.

149
3 Apr 5/4

The Government directs
that before further action
be taken on the report
now submitted by the Engineer
Quartermaster Railway Accounts,
Madras, the Agent & Manager
Madras Railway be asked
to inquire into the several
points raised therein and
forward Government with
an expression of his views
regarding them.

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3/4

R

15/4
To the Consulting Engineer
for Ry. Accounts.