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TRUTH IN ACCOUNTING.

"What is truth" asked Jesting Pilate but did not stay for an answer. Mr. Kenneth Macneal has, however, in his book* grappled with elusive truth and endeavoured to depict her as she should appear in Accounting. The book has been advertised on the wrapper as sensational and this description is not far from being correct.

The main purpose of the book is to advocate a radical reform in the preparation of the balance-sheet and of the profit and loss statement of companies and corporations. After giving a short and succinct account of Accounting and early Accounts, Mr. Macneal has described the current principles of accounting and traced their origin. Then follow chapters on "Nature of values," "Money" and "Market prices." As the keystone of the entire thesis is "Market price" its definition in the author's own words may be given, *viz.*, Market price is the price which prevails in a competitive market, a market where exist threefold competition of buyers with sellers, buyers with buyers and sellers with sellers, such price serving automatically as economic value.

How the ideas of the author compare with the current orthodox ones on the several questions arising to be dealt with in current practice may best be exhibited by means of some illustrations. The reader is presumed to be conversant with the latter and I shall proceed to present the author's ideas only.

Land.—All land whether for permanent use or for re-sale should be exhibited at a figure as near to its economic value on the date of the balance sheet as is possible.

Buildings.—Buildings should be shown at their present replacement cost, *i.e.*, the cost of reproducing them *plus* a profit sufficient to provide a motive for so doing. The difference between the original cost and the replacement cost should be treated as capital gain or loss as the case may be.

Machinery, tools and equipment should be valued at present replacement cost *less* adequate depreciation. Where a market price is not available, the author explains that the reappraisement of the old items will consist merely of translating the cost composing them into terms of current commodity price and wage levels.

Investments.—All marketable investments should be valued at market rates whether this be above or below cost and this should be done whether they are considered temporary or permanent investment.

Inventories.—(Americanism for goods or stock which forms the staple of a company's activities) should be valued at market rate wherever an acceptable market rate exists. When the inventories include goods in process or goods which have no acceptable market they should be valued at replacement cost.

Goodwill.—Considering the case of a going concern taken over and incorporated, the author remarks that the amount paid for goodwill is really a present sacrifice or loss of capital for the expected benefit of future gain. He

* *Truth in Accounting* by Kenneth Macneal, C.P.A., University of Pennsylvania Trust, Price \$. 5.

holds that if goodwill is exhibited in some balance-sheets, badwill should be likewise exhibited in others and that both should be re-valued with the preparation of each new balance sheet. In this opinion goodwill should have no place in any balance sheet.

Depreciation should be calculated with reference to the age of the asset and its present value in new condition. Thus if an asset having ten years' life and original cost Rs. 1,000/- has a replacement value of Rs. 500/- at the end of five years, Rs. 250/- should be shown as its value in the balance sheet, Rs. 500 as capital loss and the balance of Rs. 250 as depreciation allowed for five years. *Per contra* should the replacement cost be Rs. 2000, Rs. 1000 should be shown under asset and an equal sum under depreciation and there will be neither a capital gain or loss.

Wasting Assets.—Accepting the current practice to show wasting assets like mines, oil-wells, quarries at their original cost *less* estimated depletion based on such original cost, Mr. Macneal points out that it may sometimes happen that the value of a wasting asset rises because a demand is created for it for a use different from the one for which it was acquired. Thus the growth of a city near an exhausting oil-field gives the land great value for building purposes. In such a case the land should be written up to its economic value for surface use and charges for depletion should be discontinued.

Organisation expenses (or Preliminary expenses) which comprise incorporation fees, legal fees, commission, advertising expenses etc., and other deferred charges and even the early operating losses of a new business which are expected to produce benefits in the future and are under current practice treated as an asset to be written off in the course of the following few years should have no more place in a truthful balance sheet than goodwill.

Bonds (or Debentures) Bond premiums and discounts should be treated as capital profits and losses respectively.

Enough has been said to indicate how our author's ideas run counter to the principles now accepted by orthodox practice. His refrain is that the balance sheet on any specified date should exhibit the assets and liabilities at their current market prices, the only exception he has allowed being non-marketable and non-reproducible assets in respect of which he allows the original price to be retained, apparently, as a necessary evil.

Mr. Macneal correctly holds that present-day business organisations differ vastly from the earlier ones. They are no longer like trading ventures, the accounts of which used to be closed after the completion of each venture may be after a year or a longer period, nor business owned by a small number or group of people. Nowadays hundred, nay thousands, of shareholders are interested in individual companies and corporations. Few of them have a permanent interest in them ; most of them have only a temporary interest. They are interested in the present value of the concern and not in its future or continued well-being. He maintains that under-valuation of assets and secret reserves and other devices ordinarily adopted in the interest of the concern are prejudicial to that of temporary share-holders in the concern.

After giving unbiassed consideration to the author's proposals, it must regretfully be concluded that they are not worthy of acceptance. Their adoption will not make the balance sheet and the profit and loss statement of a concern more easy to understand for a shareholder nor more helpful to him to decide whether he should acquire a holding in a company or retain his holding or sell it. It is difficult to evaluate with any satisfactory degree of accuracy lands and buildings acquired many years ago at the commencement

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of a business. If goods on hand are priced at current rates, such rates being higher than cost price, any fall therein will bring about a loss in the next return as against a fictitious profit in the current return. Kaleidoscopic alterations in capital by the presentation of capital gains or losses varying from year to year in the balance sheet will simply bewilder the shareholder.

This is not to say that the present position is perfect. The extreme of conservatism and safe accounting which culminates, for example as pointed out by the author, in the entire omission of the land and buildings of the Bank of England from among its assets in the balance sheet or the exhibition of real estate and fixed plant by German companies at a nominal sum of a single mark is certainly to be deplored. At the same time it must be admitted that money spent on the acquisition of land and the construction of buildings and the equipment of machinery at the commencement of a business are plainly speaking *sunk* in the concern and cannot be considered as available except in the event of a liquidation. There is consequently no harm in exhibiting such assets in the balance sheet at their original cost (this being so indicated). To evaluate goods on hand for sale at cost price or the sale price whichever is lower is also advisable inasmuch as this safeguard against possible loss in the event of the rate falling before the sale actually takes place. This is a step of prudence in these days when the tax-gatherer is prowling about seeing what he may devour by way of tax and super-tax and excess profits tax. Once a concern has been floated, the shareholder should be interested only in its capacity to earn profit and to declare dividends and for this purpose the balance sheet and the profit and loss statement as now prepared are quite ample, though the several headings therein might be made clearer by verbal amplifications. The interests of the concern are paramount and these may be said to be identical with those of the permanent shareholders. At any rate the temporary or the fleeting shareholder or more correctly the mere speculator need not have the sympathies of the Accountant ; he is generally not interested in the history of the business or the dividends declared by it and one balance sheet is as good to him as another. Any passing whim of the moment in the share-market or political rumour or a distant event is more than ample to induce him to buy or sell shares.

Notwithstanding the above conclusions, it must be admitted that Mr. Macneal's book is thought provoking. The Accountant is inclined more than any other professional to complacency and a perusal of this book will give him a healthy shaking, make him review the existing position and satisfy himself whether everything is all right. Books on Accounting are of such a prosaic and soporific nature that a book like Mr. Macneal's which provides stimulating reading should be welcomed.

K. V. IYER.

FINANCIAL CONTROL AND THE ACCOUNTANT.

The title of my address embraces so vast a field that it would be impossible to touch even the main points in the space of time reserved for this lecture. One thing is certain however and this is that the accountant through his books and records is supposed to safeguard the finances of the enterprise for which he is working. Thus any method or system which will give him a closer control, more information and better supervision should at least be examined as to whether or not it can be applied under existing conditions.

When considering the accuracy of Balance Sheets, Financial Statements, Statistical Charts or other means of conveying a picture of the status of any enterprise whatsoever we must always keep in mind that the very severe and generally strictly observed rules of book-keeping should exclude mathematical errors. On the other hand we must, however, never forget that all book-keeping is based on the accuracy and genuineness of the original vouchers *i.e.*, the posting media. In other words a Balance Sheet, Statement or Chart may be mathematically accurate and correspond in every respect to the established principles of accountancy but the picture conveyed can be wrong because the original media is faulty. Although it is one of the specific tasks of an Auditor not only to make sure that Balance Sheets, Statements etc., are compiled in accordance with the recognised rules, but also to ascertain that the ledger entries are covered by corresponding Journal entries and that these in turn are sustained by genuine vouchers, no auditor will ever be able to carry out a complete check over each and every item. He will have to limit himself to certain sections and periods and if these prove correct he can presume that the rest is correct too. The usual auditor's statement thus always contains a reserve to this effect, because as mentioned above, it is humanly impossible for a single man to check the accounting of a half or full year unless he would do the whole job again from voucher to balance sheet.

For this reason an efficient book-keeping system provides a row of internal checks forming an unbroken chain from day to day and month to month and balance sheet to balance sheet and if these checks are thoroughly carried out the job of the auditor is greatly simplified and he can concentrate mainly on checking the original posting media, upon genuineness, eventual alterations, etc.

From the accounts point of view it is, therefore, important to know :—

1. That the material he gets for posting to the accounts is genuine and accurate.

2. That he gets an effective check on his work not only at the end of each day, but continuously from one balance sheet to the next.

1. As regards making sure that the original posting media is correct before it comes to the hand of the accountant who as we mentioned above can only deal with the figures he eventually gets but is hardly in a position to judge its genuineness and accuracy except in case of crude and obvious cases, the only certain way of protection, has been to provide the vouchers at the moment of payment with a validating stamp under the supervision of the

paying or receiving person. This voucher validation certifies the posting media with the amount with a control number, a classification symbol and the date. The amounts thus validated are simultaneously accumulated in one or several totals establishing thus controlling totals for paying and receiving cashiers and for the subsequent book-keeping entries. Simultaneously with the validation a list of all vouchers thus certified is compiled under lock and key in the order of occurrence in other words a day book or journal. Vouchers thus validated cannot be altered or get lost undetected, and because the same information is printed on the customer's receipt we get the best known protection against fraudulent alterations or loss of vouchers between the moment they are created and the time they were actually dealt with in the Accounts Department.

A concrete example of this unique way of voucher protection in India are the numerous installations in Electric Supply Companies, Municipalities, Government Receiving Offices, Railway Goods Sheds, Toll Offices, Telegraph Windows, etc. etc.

As the Railway goods sheds will be of special interest to you we give hereafter a brief description of the system in use at Shalimar Goods Sheds of the B. N. Railway.

This system works as follows. Customers when paying the freight charges are handed a ticket showing date, consecutive number and amount paid. This ticket is issued and printed automatically by a National Cash Register Receipting machine. The ticket is perforated and the stub showing the same information is attached to the railway receipt. It forms thus the proof that the amount of freight has already been paid and under what number it can be traced on the cash sheet compiled inside the Cash Register machine. At the same time all amounts thus receipted are automatically added and the cashier can balance his cash at any instant.

The advantages against the common methods of receipting are obvious :—

Rubber stamps cannot tell for what amount they have been used and thus are a direct invitation to frauds. Adhesive value stamps can be used again. Besides they require separate accounting.

Signatures, initialling, hand dating offer no security because a direct connection between the book entries and the customers' receipt is lacking.

With the National Receipting machine the cash book is compiled and added automatically by machine. The customers' receipt and the stub for the railway receipt are printed, numbered and dated and issued simultaneously. Thus all records are forcibly the same and cannot be altered. The Accounts Department gets accurate daily figures of the total amount received and the cashier can balance his cash any moment without having to write and add up a separate cash sheet.

The use of the National Voucher validating machine is only little known in India as far as railway accounting is concerned. In fact in other countries they are even used for certifying the way bill at the sending station by overprinting 3 forms simultaneously, *i.e.*

1. The copy that serves as the senders' receipt.

2. The copy that accompanies the shipment,

3. A duplicate way bill,

Either copy shows clearly the amount of freight prepaid by the sender. As the amount has been added into the corresponding totals, the railroad is certain of getting the money and no subsequent alterations of the handwritten amounts are possible.

The introduction of Double Entry Book-keeping in its various forms has contributed a lot in this respect and its fundamental principles are as good today as they were in the past. Only the numerous variations of the various double entry book-keeping forms, the adaptations to specific needs, the desire to use mechanical means advantageously have brought about so many complications that the average book-keeper is familiar with the routine in his enterprise but has lost the big connections in the day to day work.

It might thus be welcome to have closer look at one of the principles of Double Entry Book-keeping because this will enable us to make sure whether or not the chain of internal checks holds tight in every place and leads direct from one balance sheet to the next.

One of the fundamental principles is that no ledger entry should be made without a corresponding journal entry. In the original double entry book-keeping the General Ledger, Trial Balance with total debit & total credit for each account allowed to check up on this immediately because total debits and total credits of the last Trial Balance plus Journal debits and credits of the period had to agree with total debits and credits of the new Trial Balance.

In most of the modern machine book-keeping system this check is no longer available. Some people believe that this is not necessary and that a Trial Balance of the balances will offer the same protection but this line of thought is erroneous and can have serious consequences. It would not reveal entries made on the ledger only, *i.e.*, not going through a journal as long as the General Balance is not disturbed.

The Code Napoleon, which is still in force in a number of countries and which in a way has formed a serious handicap for mechanisation, prescribes bound books for all prime entries and in spite of this handicap has certainly the merit of making later alterations or addition in the prime entry book difficult if not impossible. With adoption of loose-leaf ledgers and journals we certainly have every interest to maintain a check on the corresponding entries of the ledger with the journal entries. An adequately designed procedure with or without machine will give this control.

It is true that some of the machines now on the market do not lend themselves easily to carry forward total debits and total credits on the ledger in addition to the Balance. It is, however, not quite right to think that a running balance can serve the same purpose with the motivation that the majority of the accounts carry always either a debit or a credit balance and that the balance represents thus the movement debit or credit. It is also not quite right if in order to determine the movement for a particular month we subtract the balance at the beginning from the closing balance. A trial balance showing total debits and credits in addition to the balance gives much more valuable information to the Accountant and the Management who base their decision on the figures furnished by the Accounts Department.

The attached chart of an accounts system will show the connection between opening and closing trial balance and the check provided through the Journal Addition.

E. WUERGLER.

Opening Balance January 1st.

	Assets : Rs. A. P.	*Liabilities :* Rs. A. P.
Cash	660 0 0	
Current Account	140 0 0	
Debtors	28,700 0 0	
Merchandise	64,000 0 0	
Furniture & Fixtures	6,500 0 0	
Creditors		19,500 0 0
Bank		20,500 0 0
Capital		60,000 0 0
	1,00,000 0 0	Rs. 1,00,000 0 0
January Journal Addition	1,62,560 0 0	1,62,560 0 0
Trial Balance Control	2,62,560 0 0	2,62,560 0 0

Actual Trial Balance 31st Jan. (Improved system)

Account	Current Month. Dr.	Current Month. Cr.	Year to Date. Dr.	Year to Date. Cr.	Balance. Dr.	Balance. Cr.
Cash	3,250 0 0	3,449 0 0	3,910 0 0	3,449 0 0	461 0 0	
Current Account	22,409 0 0	21,906 0 0	22,549 0 0	21,906 0 0	643 0 0	
Debtors	53,083 0 0	33,217 0 0	81,783 0 0	33,217 0 0	48,566 0 0	
Furn. & Fixt.	875 0 0		7,375 0 0		7,375 0 0	
Creditors.	33,915 0 0	33,623 0 0	33,915 0 0	53,123 0 0		19 0 0
Bank	9,258 0 0	16,819 0 0	9,258 0 0	37,319 0 0		28,061 0 0
Capital.				60,000 0 0		60,000 0 0
Personal	700 0 0		700 0 0		700 0 0	
Tot. Finance a/c	1,23,490 0 0	1,09,014 0 0	1,59,490 0 0	2,09,014 0 0	57.745 0 0	1,07,267 0 0
Merchandise	35,815 0 0	53,522 0 0	99,815 0 0	53,522 0 0	46,293 0 0	
General Exp.	3.255 0 0	24 0 0	3,255 0 0	24 0 0	3,231 0 0	
Tot. Operating a/c	39,070 0 0	53,546 0 0	1,03,070 0 0	53,546 0 0	49,524 0 0	
Recapitulation						
Finance a/c	1,23,490 0 0	1,09,014 0 0	1,59,490 0 0	2,09014 0 0		49,524 0 0
Operating a/c	39,070 0 0	53,546 0 0	1,03,070 0 0	53,546 0 0	49,524 0 0	
Trial Balance	1,62,560 0 0	1,62,560 0 0	2,62,560 0 0	2,62,560 0 0		

UNDER-WEIGHING OF CONSIGNMENTS: A SOURCE OF HUGE PECUNIARY LOSS TO RAILWAYS.

Those of us, who have had a chance to work in the Traffic Audit/Accounts Branch of a Railway Audit/Accounts Office, will, I am sure, bear me out in my statement that a huge sum of money is being lost to the Indian Railways in the shape of non-recovery of freight charges on goods consignments which are fraudulently under-weighed by booking stations in active collusion with the public. The fraud is being systematically carried on, notwithstanding that Booking stations, under the Railway rules, are required to weigh *all* outward goods consignments and to detail, in token of their having done so, full particulars of such weighments on the lower portions of consignment Notes. But, in order to fulfil this requirement, false particulars of weighments are recorded and their total so skillfully worked out as to agree with the false total weight of the consignment declared by the consignor on the upper portion of the consignment Note.

In order to stop this fraud, Railways have, from time to time, adopted various measures, both individually and in combination with one another; but none of these has been found productive of the desired result. The reason for this failure is not far to seek: the measures adopted have for their basic principle the "detection" of the fraud, while what is actually required is the "prevention" of the fraud. It is, no doubt, true that by adopting such detective measures, railway freight on excess weight is recovered at destination stations; but this is and can be done in those cases only in which excess weights have been found as a result of reweighing consignments. Such cases are not only few and far between but infinitesimal, as compared with those which remain undetected. The station staff, have long realised the helplessness of those who are out to prevent the fraud and have, therefore, re-doubled their fraudulent activities.

Put in a nut-shell, the important measures adopted from time to time by Railways in this direction, both individually and in combination with one another, are :—

(*i*) Surprise reweighments by Travelling Inspectors of Accounts and Traffic Inspectors after consignments have been formally accepted for despatch at booking stations ;

(*ii*) Occasional reweighments at transhipment stations ;

(*iii*) Special reweighments at destination stations ;

(*iv*) Reweighments by destination stations to the extent of 10 per cent. of Inward consignments ;

(*v*) Reweighments of goods at certain stations by a specially appointed staff, generally called "Reweighment Inspectors"; and

(*vi*) Exchange of statements between Railways detailing excess weights found as a result of reweighments at destination stations.

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Let us now examine how far these measures have really contributed to the desired result being achieved :

(1) SURPRISE REWEIGHMENTS BY TRAVELLING INSPECTORS OF ACCOUNTS AND TRAFFIC INSPECTORS AFTER CONSIGNMENTS HAVE BEEN FORMALLY ACCEPTED FOR DESPATCH AT BOOKING STATIONS.

Except at stations, where the Travelling Inspectors of Accounts and Traffic Inspectors are headquartered, these reweighments are nothing but a sheer waste of time. The Goods staff, knowing that the inspector is at the station, invoice correct weights. In fact, they eagerly wait for the inspector to come to the goods-shed to reweigh a few accepted outward consignments so that they could impress upon him strongly, if not indelibly, that they are quite honest and straight-forward in their dealings with the public. When, however, this does not happen, they manage to have a false complaint verbally made to the Inspector by merchants in respect of undue strictness being observed in charging excess weights of a couple of seers only apparently due to the difference of scale and weather conditions. Impressed by these complaints, the Inspector issues instructions through the Inspection book to ignore such excess weights, covered by the provisions of para 16 of the Indian Railway Conference Association Goods Tariff in force.

(2) OCCASIONAL REWEIGHMENTS AT TRANSHIPMENT STATIONS.

Reweighments at transhipment stations, if carried out by Inspectors in their own presence, are really helpful. When, however, these are entrusted—as is often done—to the Transhipment goods staff, no benefit accrues. For consignments are not *actually* reweighed by the Station Staff, bogus particulars of reweighments being manipulated to agree with the invoiced weights of consignments. This is generally done with the three-fold object : (*i*) to avoid the botheration of attending personally the reweighments of goods consignments, (*ii*) to save the loading and unloading contractor from engaging an increased number of porters that are actually required for timely performances of transhipment work and (*iii*) to avoid responsibility for any shortages that might be reported by destination stations.

(3) SPECIAL REWEIGHMENTS AT DESTINATION STATIONS.

Reweighments, carried out at destination stations by Audit Inspectors, are useful, indeed. But overburdened with other work as the Inspectors always are, they are generally able to spare *very* little time for this work. The result therefore, is that only a *very* small number of cases in which short weights have been invoiced by booking stations are brought to light by them.

(4) REWEIGHMENTS BY DESTINATION STATIONS TO THE EXTENT OF 10 PER CENT. OF INWARD CONSIGNMENTS.

This rule is not in actual practice observed by the destination station staff. The reason for this is that the staff at destination stations remain in the same way influenced by consignees as the staff of booking stations, for, unless this is done, the collusion entered into at booking stations can never pass through. What, then, actually happens is that small and odd consignments are generally actually reweighed and the results of their reweighment recorded in the Unloading Tally Book ; while big consignments to regular traders are not reweighed at all, though, in all these cases, false particulars of reweighments are entered in the Unloading Tally Book merely with the object of (1) hood-winking the inspecting staff and (2) of completing the record to show that the instructions for reweighment of a suitable percentage of inward consignments were duly complied with. Apart from these, there is another reason to avoid actual reweighment of consignments: On some Railways the handling contract is given to an outside contractor, while on others, to Stations Masters and Chief Goods Clerks. In either case it is not to the advantage of the contractor to actually reweigh inward goods consignments; for if it were done, an additional number of porters would have to be engaged for unloading of wagons which is required to be performed within a prescribed time limit.

(5) REWEIGHMENT OF GOODS AT CERTAIN STATIONS BY A SPECIALLY APPOINTED STAFF GENERALLY CALLED "REWEIGHMENT INSPECTORS."

To appoint Reweighment Inspectors to reweigh both outward and inward goods consignments is undoubtedly a step in the right direction. These Inspectors can also carry out such re-weighments at Transhipment Stations. Working honestly and independently of the influence of merchants and the station staff, they can produce best of results, thereby justifying their appointments as well as those of travelling porters working with them. But as their check is only in the direction of detection, it brings to light only a very small number of cases of consignments having been booked underweighed.

(6) EXCHANGE OF STATEMENTS BETWEEN RAILWAYS DETAILING EXCESS WEIGHTS FOUND AS A RESULT OF REWEIGHMENTS AT DESTINATION STATIONS.

This is really a good measure; but it brings to light only a few cases of certain principal stations of particular railways. The station staff of the booking station continue invoicing correct weights of consignments, only till such time, as they receive an intimation from consignors of the surveillance having been removed from receiving stations.

From what has been stated above, it will be seen that out of the six measures adopted by railways only three are really helpful, the remaining three, (1), (2) and (4) serving no useful purpose. It can be reasonably argued that since the adoption of the measures at (1), (2) and (4) does not involve any extra expenditure to the railway, there should be no objection to their continuance, unless and until some distinctly better measures, either detective or preventive or both are suggested for adoption. This point has been given very careful and anxious consideration the outcome of which are the following suggestions :—

(1) The consignment Note filled in by the consignor is virtually an agreement between the sender and the Railway. That being so, the sender is required to declare correct description and weight of the goods tendered for despatch. If, however, this is not done, and it is found at the destination station that the contents were deliberately mis-declared in order to obtain the benefit of a lower rate, such a consignment is charged at double the highest rate in force, *viz.* 9th class in the case of ordinary goods and 10th class in that of explosives and other dangerous goods. The rule in this connection appearing in Indian Railway Conference Association Goods Tariff in force reads :—

"Rule 21. *Penalty for false declaration.* (1) If, on arrival at destination, it is found that goods have been improperly described and that a lower rate than that correctly applicable has been thereby obtained, charges at double the highest rate in force, *viz.*, 9th class (10th class in case of explosives or other dangerous goods classified 10th class) will be levied calculated on the entire distance over which the consignment has been carried.

(2) If a materially false account is delivered with respect to the description of any goods, the person who gives such false account of and if he is not the owner, the owner also is, on conviction by a Magistrate, liable to a fine which may extend to Rs. 10 per maund or part of a maund of goods, and such fine will be in addition to the rate to which the goods may be liable."

If this rule is made applicable also to the mis-declaration of weight by the consignor on the consignment Note, the cases of under-stating the weights will be as rare as those of mis-declared contents of consignments. The practical effect, in that case, of the proposed rule would be to charge all the weight in excess of the invoiced weight based on the sender's declared weight at double the highest class rate on the entire distance on which the consignment has travelled. According to para 19 of the Indian Railway Conference Association Goods Tariff in force, the sender is required to declare on the consignment Note the weight with description; and since mis-declaration of the description of goods is penalized, there seems no reason why mis-declaration of weight should not be dealt with, likewise.

(2) As the weight of the consignment is mis-declared by the consignor, the consignee should not be made to pay in the mis-declaration charges at destination. He should be required only to certify in writing the correct weight of the consignment reweighed in his presence. This declaration should be sent by the station master of the destination to his Audit/Accounts Office with a report together with a copy of the relative invoice. The Audit/Accounts Office should, on receipt of these documents, work out charges at the highest class rate and debit them to the Booking Railway through the Goods Division Sheets in hand. The Audit/Accounts Office of the Booking Railway should, on receipt of the Division Sheets, transfer the debit to the Booking Station through the Schedule of Errors, a report being made to the Traffic/Commercial authority for disciplinary action being taken with the staff at fault only in the event of the debit having been recovered from the consignor. If, however, the debit is paid from pocket or recovered through the pay of the staff at fault, no disciplinary punishment would, for obvious reasons, be justified. Therefore, in order to ascertain whether the debit has been recovered from the consignor or paid from pocket by the staff at fault, the Station Master or the Chief Goods Clerk should be instructed to intimate the actual fact to his Traffic/Commercial Officer and also to issue a Freight Receipt (T. 1369) to the consignor as a proof of the recovery made.

(3) In order to make the staff of the destination station really interested in actually reweighing as many inward consignments as possible, a small cash reward out of the penalty recovered should be given to them. With this allurement, the staff at destination would always be on the look-out for excess weights and would not, at the same time, be easily led away by the agent of the consignor.

(4) The Inspecting Staff of both Traffic/Commercial and Audit/Accounts Departments, whose duty it is to visit stations and/or to inspect their accounts should be encouraged by passing commendatory remarks in their service sheets for paying special attention to reweighing goods consignments and for bringing to light cases of excess weights. The Travelling Inspectors of Accounts can give best of results, if relieved a little of their copying work and stereotyped checks which are, for the most part, based on far-fetched ideas and generally result in a wild-goose chase.

(5) It will be found very useful, if Reweighment Clerks with a suitable number of porters are specially appointed and kept at transhipment and big goods traffic stations. Their sole duty should be to reweigh goods consignments and to weigh loaded wagons on weigh-bridges and intimate excess weights to destination stations and the Audit/Accounts Offices of the Booking and Destination Railways. The Reweighment Clerks, if appointed, should be placed under Audit/Accounts Department so that they work independently of the Station Master or the Transhipment Supervisor. Honest persons with a

clean record of service should be selected for this post and in order to keep them above pecuniary want, a decent pay should be given to them.

It will be interesting to know that, on a certain Class I Railway an Inspector of Accounts, while performing his inspection work at stations made it a point to reweigh, now and then, as he could get a little time, inward goods consignments and was instrumental in collecting undercharges on excess weights amounting to Rs. 37,393-11-0 during the period of the preceding fifteen years. The Inspector would have certainly been able to collect above a lakh of rupees, if he had been able to carry out reweighments at *all* the stations he visited. This, however, he could not do, due to paucity of time and for want of porters. On the same Railway, the Head of the Commercial Department, being alive to this perennial source of pecuniary loss to the Railway, deputed temporarily a Traffic Inspector to visit a few traffic stations to reweigh inward consignments with a view to ascertaining the enormity of the financial loss which the invoicing of less weights by Booking Stations caused to the railway. The Traffic Inspector carried out such reweighments and was able to collect undercharges amounting to Rs. 3,249 during the course of two months.

The figures of undercharges, quoted above, unmistakably indicate the systematic perpetration of the fraud which, when stopped, would very substantially add to the earnings, derived from goods traffic, by several lakhs of rupees which is, in itself, a strong justification for spending a few thousands of rupees necessary for (1) adoption of special measures (2) employment of special staff and (3) grant of pecuniary rewards, as suggested above.

I may state, in conclusion, that the fraud discussed in this paper is causing a considerable more pecuniary loss to Railways than the "Ticketless Travel" to prevent which lakhs of rupees have been and will now continue to be spent, even though the Railways have armed themselves with special powers through the recent amendment of the Railway Act dealing with this offence. Time, however, has now arrived that the subject discussed in this paper should be dealt with in right earnest, and it is just in the fitness of things that such an initiative will be taken through the medium of the Institute of Railway Accountants and Auditors.

J. R. BENJAMIN.

TRENDS IN TRANSPORTATION AND WHAT ANALYSTS CAN DO TO IMPROVE THEM.

[*The following extracts are Published from an address by Mr. J. G. Lynne, Associate Editor of the American* RAILWAY AGE *at the 51st Annual Meeting of the Railway Accounts Officers at Denver, United States. The address aroused considerable interest and has been reprinted several times. Mr. Lynne has discussed certain aspects of railway administration which will be found to be of special interest to readers in this country.—ED.*]

While the accounting officer has no cause for perturbation about the high competence and great integrity with which his department is functioning—nevertheless the setting in which his professional work is being done is growing continuously more uncertain. That is to say: the accountant may carry his professional performance to the point of perfection and still be thwarted in attaining the success to which his attainments entitle him—not because of any fault of his own; but because it is his misfortune to serve an industry which is so beset by adverse political forces (and I do not use the word "political" in any partisan sense.)

Those observations are in the abstract. To put them concretely—a man may be ever so good at backyard gardening, and yet the neighbour's chickens can undo all his labour. In such a circumstance—it may behove him to take some steps against the neighbours' chickens rather than to continue exclusively the backbreaking cultivation of his vegetables. The observation of the neighbour's chickens in the railroad garden has been an avocation of mine for the past ten years. Hence I hope that I may be able to disclose something about their manner of operation, which may be helpful to the victims of their depredations.

The most dangerous chicken in the railroad garden is lack of sound information on the economic situation of the railways on the part of railway employees. Thirty or forty years ago, it was not necessary that employees should have such information, because at that time it was not considered to be the function of railroad employees to determine some of the major conditions surrounding railroad operation. There was such a thing in those days as telling a group of railroad union leaders that their demands were unreasonable and for that reason denying them.

I have no animus against the railroad unions, even though I often disagree with their policies. I was raised among the railway rank and file, and I have been in association with them all my life. A fairer, more intelligent and more capable group I do not believe it would be possible to find. It seems hardly fair that these men should be expected to make reasonable decisions regarding their wages and working conditions in the absence of clear and unbiassed information on these questions. For instance, I wonder how many railroad employees understand that—while their union activity has undoubtedly helped certain individual employees—it has not in 20 years improved the situation of railroad men as a whole in the slightest degree. This is a strong statement, but I believe the figures bear it out. Let us consider them.

From 1921 to 1940, inclusive, the highest percentage of gross railway revenues paid out in wages in any one year was 50 per cent., and the lowest percentage paid out in any one year was 45 per cent. The average was slightly more than 47 per cent. This relationship is highly significant—because it strongly suggests that neither labour unions nor anybody else has done anything directly in the past twenty years to increase the total amount of money paid to railway labour, or even the " share " of labour in total railway revenues. The amount of money received by labour appears to be determined automatically by two factors, *viz.*, (1) the total amount of railroad revenues and (2) internal processes of the railroad industry which limit the amount of money paid out to labour to somewhat less than 50 per cent of total revenues.

These figures indicate that there is one way, and only one way, to improve the condition of railway labour as a whole, and that way is to increase gross railway revenues. In recent years railway employees have awakened to this fact—at least to the extent that they are seeking to curtail the special favours enjoyed by their competitors ; but so far not many of them appear to understand that unduly high labour costs on the railways will destroy railroad jobs just as surely as political favours to rival forms of transportation destroy them.

The figures strongly argue that the total well-being of all railway employees cannot be improved by upward revisions of wages. All that unduly large wage increases or restrictive working conditions do is to divide among fewer men an amount of money over which employees have no direct control. This means that wage increases are paid for, in large part, by furloughing men at the bottom of the seniority roster ; or by failing to hire men who otherwise would be employed.

When we look around and see the number of industries in which, nowadays, wages are arbitrarily fixed at high levels by some form of coercion—it is quite easy to see why unemployment persists. Labour organizations insist that " labour is not a commodity " to be sold in the open market for whatever it will bring, and to this view many of us are sympethetic. On the other hand the fact cannot be escaped that the things which labour produces are commodities—and if such commodities are priced too high (which must happen if wage rates are out of line) then consumers will not buy so much o them ; and less labour will be employed.

Recently, it is to be noted that several progressive railroads have been issuing their annual reports in a form to attract the attention of the employees and undoubtedly this is a step in the right direction—but I wonder whether we could not go much further than that ; and give information to employees bearing upon their jobs and their welfare, not so much in the form of statistics, but as direct information—say a monthly bulletin, which would tell of all increases and decreases in jobs during the month under review, giving the reasons for these changes. Then an item, for example, as this one :

" The *A* and *B* mill on the Squeedunk branch shifted its tonnage to truck movements owing to our inability to give them special train service for the average of five cars a day out-bound which they have ready at 5 P.M. everyday and which they are unwilling to hold until the following morning for our mixed train. The traffic manager for the *A* and *B* people wanted us to send a switch engine up from Whiffletree Junction, 5 miles away, to get these cars but this we could not afford to do because the crew would have to be paid an extra day's wages at the road rate—or $39·50—for this job. The loss of the *A* & *B* tonnage makes the Squeedunk branch a still more losing proposition than it was already, and, quite likely it will have to be abandoned. The branch now gives direct employment to 16 men—a train crew, 3 agent-operators, and 2 section gangs of four men each ; besides the employment it provides on the main line for clerks and freight handlers, who keep track of and handle its traffic ; and the mechanical department employees who maintain its equipment in serviceable condition."

There is scarcely a railroad in the country of any size which could not make some such statement as that ever so often. This sort of information is not propaganda, it is just plain fact. The more popular labour union is, when some working rule limitation is put over on a railway, or a " full crew " law is passed—the result is clear gain for employees at the expense of "capital." The actual facts do not support this conclusion, but the employees are seldom given such facts. Men are laid off and they are not told of the budgetary origin of their misfortune.

In a number of instances, railroads have been mulcted in large amounts by decisions of referees of the National Railroad Adjustment Board—and probably budgetary necessities have forced the carriers to retrench the employment of other labour to offset these coercive payments. Quite likely most employees believe that these awards come entirely out of the pockets of railroad security holders—instead of in considerable part from wages which might have been paid to other employees. A straightforward and objective statement by a carrier to its own employees regarding awards of this character giving their budgetary impact on other employment might, in the long run, cause a great change in employee attitude towards this situation.

Most railway employees have little interest in abstract statistics, but no one can doubt their interest in what other railway men are being paid ; and if they were given such information they would form their own opinion as to whether these other employees were entitled to these payments or not.

These figures are not put forward as conclusive economic studies upon which final decisions can be made. They are intended merely to suggest a type of information which is not given to employees today in a form understandable to them—the lack of which information prevents employees from realizing that their own prosperity and the safety of their jobs is inextricably interwoven with the integrity of railway investments. Since an important part of the policy of the railroad industry is now largely in the power of railroad employees themselves, it is difficult to see how wise decisions can be expected until these and other significant facts are presented to employees in a form which they can assimilate.

We need not here discuss the moral behaviour of large scale enterprise as far as the railroads are concerned. Because we all know that—while the industry is not perfect—it certainly acts in a public spirited manner most of the time. But as to doing a better job than we are doing and letting the public and the employees know the fact no criticism is implied in suggesting that there is still much more than can be done. Mention has already been made of the desirability of more and better information for the employees.

The doing of a better job by large scale private enterprise is largely a matter of adequate *information.* Time prevents going into this question into detail—but a few major considerations may be mentioned. Just for instance, take the matter of the average rate charged by the railroads to their customers. We are told quite honestly, that the average rate charged to the shipper per ton per mile was 0.729 cents in 1913, 1.294 in 1921 and 0.946 in 1940. From this it is seen that the average shipper is paying to the railroads 27 per cent less than in 1921. This is an honest fact. On the other hand, a large part of this increase has come, not by a decrease in rates, but by a shift in the character of traffic. The railroad's loss has not been the shipper's gain.

The individual shipper is not much interested in the general averages. What he is interested in is the rate on his own commodity ; and if the railroads cannot so conduct their business as to quote him a constantly decreasing price as the efficiency of railroad service improves, then he may cease to be so good a customer; and, if that happens, all of us in the railroad business will suffer—and the country's largest and oldest large scale private enterprise will have some demerits chalked against it in the public mind. To get a little closer to the customer's point of view than these ton-mile averages, I asked a large shipper of a standard food produce to summarise in a few sentences his industry's transportation history over the past thirty years, and here is what he wrote:

"This important branch of the food industry paid 20 cents per hundred less for its raw material in 1940 than in 1913; sold its product for 50 cents less per hundred; but was charged 8 cents more per hundred for railway transportation. We decentralized; and by decentralization we were able to engage in trucking. If it had not been for this change our average freight charge would have been in 1940 more than double what it was in 1913.

By giving the public, in a reduced selling price, the advantage of its research and economy, this industry increased its sales volume 800 per cent during this 27 year period. But while we were reducing our sales price below the 1913 level, and largely increasing our volume, the railway rates levied upon us increased more than 100 per cent.—and their traffic volume from us has remained almost static.

A large part of the shipments of this industry are still moving by rail, but competition will eventually force greater decentralization, and more truck and water shipment if the present trend continues."

I would not say that the situation described by this shipper is typical. I do suggest, however, that railway managements cannot give a service which will enable it to escape criticism and political attack unless it *knows* how many shippers there are, who feel as this one does, and unless it knows whether or not there is substantial truth in such statements.

The reason for the existence of large scale enterprise is the superior efficiency with which it performs service to the community; and if there is any respect in which the railroads may be doing a less satisfactory job than they might do, then railroad managers should be the first to have the information. Since satisfied customers mean so much to both the economic and political success of the railroads, there can hardly be any more useful and important information (however painful) which can be laid before railroad managements, provided it is accurate. No normal person enjoys unearthing unpleasant facts, and it is not a task which is certain of immediate reward. However there is nothing so salutary as facing facts, however painful. The duty to get out the facts is a moral one, which is concerned with the continuance of the American system of private enterprise. If that system is worth saving, it is also worth some personal sacrifice.

Averages are never so satisfactory as basis for managerial action as are the details from which the averages are compiled. And if these are tackled road by road—by analysis on each individual property—the result will be much closer to reality, and hence more suitable for managerial action, than they can be while they remain only nationwide. As a tool for railway management to work with, such information would be more helpful if each railway had its own chart of actual and potential traffic; and if it knew, furthermore, every shipper who composed that "potential" curve—and the concessions necessary to turn "potential" into actual.

The performance of no industry, however, can be understood merely by internal examination. It has to be seen with reference to the economy as a whole, because unless what is happening outside the industry is taken into account—it cannot be known whether the things found inside can be corrected there or not.

I have touched on a few of the directions in which more analysis of railway operations might prove fruitful. I now give you a word from two recognised authorities in this field—Professor W. J. Cunningham of Harvard and Professor Kent Healy of Yale. Professor Cunningham believes that, and I quote him, "the present need in railroad organisation is not so much a formula for the indication of trends as a sympathetic point of view toward research" of this character. "In that respect," Professor Cunningham goes on to say, "the railroads are far behind the typical American industry."

Professor Healy suggests that a comparison of the railroad rate level over the past 40 years with the prices of the products moving under these rates would be a fruitful subject for investigation. He believes that such a study would explain shifts which are constantly occurring in production areas in this country; and he implies that study by railroads of prices and costs of their customers, in comparison with railroad costs and prices might prove a help in forestalling the loss of traffic—and disclosing, perhaps, how traffic and revenues might be enlarged. Other topics suggested by Professor Healy as worthy of investigation are the relationship of railroad finance to trade cycles and how the railroads might, possibly, ease the impact of trade depressions and hence remove the extension of government "planning"; the relation of rate and wage policy to trade cycles; and trends in costs and prices of railroad equipment.

By these observations, I do not mean to suggest that the railroads are not carrying on analyses of this kind. Many of them are and of the most able and far-reaching character. It is merely my conviction that the harvest to be garnered in this field is large; while the labourers therein are comparatively few. And also, unless men within the railway industry occupy this sector more intensively than they have done so far—there is likely to be a steady invasion of it from the outside. There are many able economists in this country who know transportation and who are not connected with the railroads, and I think the studies of such men in this industry should in every respect be encouraged. But as a general observation, it seems to be that such theoretical economics as must be understood for enquiry of this kind is much easier to acquire than the detailed knowledge of railroad figures and their significance. In other words, it is easier and quicker for a man who knows railroading to learn economic analysis than it is for a theoretical economic analyst to learn railroading.

OFFICE OF THE REGISTRAR
29 MAY 1943
MADRAS

REVIEWS.

SOUTH AFRICAN RAILWAYS AND HARBOURS IN WAR TIME.

The South African Railways and Harbours Administration has brought out an interesting pamphlet with a large number of photographic reproductions illustrating the contributions made by it to South Africa's war effort. This booklet presents an interim report on what has been done in the first two years of the war. Apart from the successful working and satisfactory financial results, the resources of the Administration in men, material and equipment, have been placed at the disposal of the defence services. The diverse articles of military value turned out in the workshops and the special service rendered in carrying the men, munitions and materials of war to the various theatres all are described in an interesting style. The booklet concludes with a review of the activities of the Harbours and the Airways Department.

OFFICIAL PAPERS.

INDIAN RAILWAYS, 1940-41[1].

The financial results of the Indian Railways for the year 1940-1941 exceeded the earlier estimates by a substantial margin. The agricultural season which is vital to the economic life of the country, was generally favourable. Crops under sugarcane, jute, rape and mustard and cotton showed considerable increases as compared to the previous year. Only rice was some 15 per cent lower. This factor, together with the general rate increases of the previous year and the increased military and other traffic due to the war produced a record level of gross traffic receipts, namely, Rs. 111.94 crores, or Rs. 14.29 crores higher than the previous year. After meeting all the charges—operating expenses, depreciation and interest charges—the surplus amounted to Rs. 18.46 crores as compared Rs. 4.33 crores in the previous year. Out of this, Rs. 12.16 crores were placed at the credit of the Central Revenues, made up of Rs. 8.14 crores in full payment of Contribution for the year and Rs. 4.02 crores towards arrear contribution. The balance of Rs.6.30 crores was credited to the Railway reserve fund.

The increase in the traffic earnings is recorded under both passenger and goods traffic. The improvement under the former is not so remarkable as that under the latter. The effects of the war on rail earnings are thus summed up by the Railway Board's report :

"The primary effect of the war was a large increase in military traffic and in traffic in the commodities used for war purposes. The shortage of shipping for postal traffic diverted to rail traffic that would normally have been carried by sea. The increase in the cost of petrol and other motor accessories also resulted in the diversion of considerable traffic from road to rail. The difficulty in obtaining necessary industrial products from abroad gave a stimulus to indigenous industries and resulted in a large movement of traffic in products of Indian manufacture. On the other hand, the loss of the European continental markets for the export of certain commodities had an adverse effect on railway earnings. The net result was, however, a very substantial increase in earnings. . . . . As a result of the increase in traffic, there was also an increase in the working expenses of the railways. The rise in the prices of stores, employment of additional police for the protection of railway property and the adoption of measures for protection from air raids also resulted in an increase in expenditure. The

[1] Report by the Railway Board on Indian Raillways for 1940-41, Volumes I and II.

increase in the cost of living necessitated the grant of a war dearness allowance to low paid staff . . . . Similarly there was less expenditure on works due to shortage of materials."

The traffic factors expressed in terms of passengers, passenger mileage, tons and ton mileage, given below, indicate the character of the improvement in the performance of the Indian Railways :

(All Railways. In millions).

		1938-39	1939-40	1940-41
No. of passengers	..	531	530	596
No. of passenger miles	..	18,743	18,522	19,933
No. of tons	..	88	92	93
No. of ton miles	..	22,159	23,492	25,289

Higher operating efficiency is indicated by the train mileage effected to carry a relatively large passenger and goods traffic, better punctuality of Broad Gauge passenger trains, reduction transit time of small consignments, larger train loads and improved engine and wagon user.

The year under review witnessed the purchase of the Bengal and Dooars Railway and the decision to terminate the contracts of the B. B. & C. I. and the A. B. Railways. The programme of economy with a view to reduce expenses was continued and some eight unremunerative branch lines were closed.

The period covered by the present report is the first complete year of the war and the contribution made by the Indian Railways towards the war effort has been substantial. Quite apart from handling exceptionally heavy traffic on account of military requirements, three large railway workshops were handed over complete for munitions production and by the end of the year the greater part of the spare capacity of other railway workshops was being utilised for the production of numerous war requirements including shells, grenades, and articles used in clothing, feeding, arming, transporting and housing the fighting forces. Skilled labour was trained in the railway shops.

The record of the Indian Railway during 1940-41 has been quite gratifying. The Railway Board's Report is thinner than usual and the photographs and maps have been omitted from the present edition, obviously for reasons of economy.

PUBLIC ACCOUNTS COMMITTEE'S REPORT[1].

The Report of the Public Accounts Committee on the Accounts of 1939-40 has commented on the financial administration of the State-owned Railways during the period. Only two excesses over the voted grants have to be regularised as compared to six in the previous year. Accuracy of budgetting seems to have improved and the Committee were pleased to refer to the close correspondence of the actual expenditure to the total grant and appropriation over a number of years. After cautioning the railway administrations against unnecessary Supplementary Grants, the Committee discussed the question of unsanctioned expenditure. They accept the conclusion of the Railway Board that there is no necessity for any radical change in the rules regarding the preparation of formal estimates ; and that the limit of Rs. 10,000 observed hitherto in regard to the exhibition of the date of unsanctioned expenditure in the Appropriation Accounts is unnecessarily low and should be raised to Rs. 25,000. These changes would have the advantage of bringing to the attention of the Committee matters really deserving of their notice and preventing their time being taken up by matters only technically objectionable and not intrinsically of much importance.

[1] Volume I, Report 1941.

After a careful examination of the financial irregularities mentioned in the Audit Report, the Committee came to conclusion that "the losses that have resulted have only occasionally been due to defects in the system" and that "where a defect has been disclosed, adequate steps have been taken to remedy it."

The accounting of losses on strategic railways was discussed from the point of view of the propriety of including it in the Defence Budget. The Committee concluded that there is no necessity to change the present procedure, at any rate during the war, as the Defence Budget is no longer a contract budget and it will make no ultimate difference to the incidence of this expenditure whether it is included in the Civil or the Defence side of the Budget.

RAILWAY AUDIT REPORT, 1941[1].

The Director of Railway Audit, commenting on the Appropriation Accounts of 1939-40, concludes that considering the magnitude of the transaction on the railways, the results of audit may be regarded as generally satisfactory.

General results of appropriation audit revealed an increase in the percentages of variation both in the case of voted and non-voted expenditure over the corresponding percentages for the previous year. But there has been an improvement in the number of excesses and amounts involved. The Director has made a detailed review of the appropriations and expenditures under the several grants calling attention to cases where financial principles or procedure have been infringed. There is next an enumeration of financial irregularities—cases of losses or write off or of expenditure which may be regarded as nugatory to a greater or less extent—in connection with Engineering works, Stores, Rolling Stock, Pay, allowances, etc., Earnings, etc.

[1] Report on the Audit of Accounts of the Railways in India, including the Appropriation Accounts for 1939-40.

NOTES AND MEMORANDA.

RAILWAY BUGDET, 1942-43.

The Railway Estimates for 1941-42 and 1942-43 presented during the Railway Budget discussions were remarkable for the record levels touched for Gross Traffic and Net Receipts. The accounts for 1940-41 showed a considerable increase over the anticipations of last year, and the revised figures for 1941-42 suggest that the performance for the year is likely to prove better than was expected that year. The Budget estimates, framed in a spirit of caution, assume a slightly lower level of receipts. The railway estimates for the years 1941-43 compared to the actuals of 1940-41 are presented in Table I.

The Revised Estimates for 1941-42 had to allow for a considerable increase in earnings which was never anticipated in the original estimates last year. The Gross Traffic Earnings are placed at Rs. 127 crores. Working expenses are slightly higher on account of certain adjustments carried out during the year, namely, Rs. 60.45 crores, which along with the depreciation charges amounting to Rs. 12.68 crores and net miscellaneous transactions of about a crore, leave a Net Revenue of Rs. 54.81 crores. Interest charges are estimated at Rs. 28.61 crores, and the Surplus at Rs. 26.20 crores. A payment of Rs. 19.12 crores is to be made to the Central Revenues, leaving the balance to be applied to repay part of the loans from the Depreciation Fund.

The Budget Estimates for 1942-43 allow for a slight retraction in receipts. The Gross Traffic Receipts are put down at Rs. 125 crores. Working Expenditure is slightly lower and taking depreciation charges and the net miscellaneous transactions into account the Net Revenue is estimated at Rs. 56.30 crores, the highest attained in our railway history. This leaves, after meeting interest charges amounting to Rs. 28.35 crores, a surplus of Rs. 27.95 crores from which the State is to receive Rs. 20.13 crores.

Such phenomenal increases in traffic receipts could only emerge out of exceptional factors, such as an abnormal increase in traffic caused by increased production, diversion of freight from coastal shipping to inland rail, extensive military movements and larger civilian demands. To the general enhancements of freights and fares on March 1, 1940, must be attributed a substantial part of the increased receipts. It is encouraging to observe that all this increase has been secured without any corresponding rise in the costs of working. This is shown by the amount of the net receipts.

Although the financial record of the last and the current years leave little to be desired, there is yet one feature which cannot be considered as quite satisfactory. In spite of the large surpluses, the moratorium is to be continued. The surplus revenues are being applied not to wipe out the temporary loans from the Depreciation Fund, but the suspended contributions. It is true that some payment has been made towards the former, but the present procedure seems to sacrifice financial principle to expediency. The taxpayer, of course, has come in for preferential treatment and his zeal for fidelity of accounting may well be tempered with an appreciation of the emergent needs of a war economy. The larger payments to the general exchequer represents so much relief in general taxation.

If the financial picture is quite gratifying, the physical aspects of rail transport disclose certain elements of uncertainty. After giving up rolling stock, rails, and other equipment, for military requirements, it is not surprising that Indian Railways, in face of exceptional traffic, are showing signs of strain, which could only be met by drastic restrictions or adequate stock. Their contributions to war effort, direct and indirect, through meeting the full transport requirements of the military forces and releasing workshop capacity to production of war requirements, have been considerable. While these are very important during a period of national emergency, adequate and efficient transportation is even more important. The ability to provide it appears now to be a problem of setting right the deficiency of locomotives and other rolling stock and prompt replacements and renewals.

The financial prospects of individual railways according to the Revised and the Budget Estimates may be seen from the statistics given below.

TABLE I.—STATISTICS OF OPERATING RATIOS ON THE PRINCIPAL STATE-OWNED RAILWAYS.

Exc. Depreciation. Inc. Depreciation 1924-25=100.

Railways.	1940-41	1941-42	1942-43	1940-41	1941-42	1942-43
St. managed.						
B. & A.	60.6	61.9	61.7	74.6	75.1	75.2
B. B. & C. I	43.3	43.7	41.7	51.7	51.5	49.7
E. I.	44.9	49.2	43.8	55.1	58.5	53.1
G. I. P.	43.1	42.9	42.0	54.1	51.6	50.9
N. W.	50.7	47.7	47.0	63.3	58.6	58.0
Com. managed.						
B. N.	50.6	50.2	52.3	61.3	60.2	62.6
M. & S. M.	46.9	44.9	46.1	57.6	54.2	55.7
S. I.	50.0	48.1	50.9	62.7	59.1	62.1
Total.						

TABLE II.—FINANCIAL RESULTS OF STATE-OWNED RAILWAYS. [IN LAKHS OF RUPEES.]

Railways.	Gross Traffic Receipts.			Total working Expenses.			Net Receipts.			Profit or Loss.		
	1940-41	1941-42*	1942-43†	1940-41	1941-42*	1942-43†	1940-41	1941-42*	1942-43†	1940-41	1941-42*	1942-43†
St. managed.												
B. & A.‡ ...	8,85	9,63	9,45	6,68	7,32	7,19	2,17	2,31	2,26	—70	—66	—62
B. B. & C. I. ...	14,08	15,20	15,20	7,27	7,80	7,51	6,81	7,40	7,69	3,93	4,24	4,91
E. I. ...	24,35	26,97	26,38	13,43	15,78	14,02	10,92	11,19	12,36	5,10	5,41	6,72
G. I. P. ...	16,56	20,88	20,52	9,00	10,81	10,47	7,56	10,07	10,05	3,53	6,10	6,14
N. W. ...	19,02	22,14	21,72	12,09	13,01	12,64	6,93	9,13	9,08	1,29	3,55	3,37
Com. managed.												
B. N. ...	12,13	13,05	12,80	7,43	7,85	8,00	4,70	5,20	4,80	1,49	1,94	1,59
M. & S. M. ...	8,14	9,30	9,10	4,69	5,05	5,06	3,45	4,25	4,04	1,11	1,91	1,74
S. I. ...	5,85	6,73	6,60	3,65	3,97	4,08	2,20	2,76	2,52	48	98	73
Total§ ...	111,94	127,00	125,50	65,65	73,13	70,76	46,29	53,87	54,74	18,46	26,20	27,95

* Revised Estimates. † Budget Estimates. ‡ Totals of the E. B and A. B. § Including the figures of smaller systems.

TABLE III—ORDINARY EXPENDITURE ON STATE-OWNED RAILWAYS.

1924-25=100.

Railways.	Gen. Admn. 1940-41	Gen. Admn. 1941-42*	Gen. Admn. 1942-43†	Rep. & Maintenance. 1940-41	Rep. & Maintenance. 1941-42*	Rep. & Maintenance. 1942-43†	Operation. 1940-41	Operation. 1941-42*	Operation. 1942-43†	Fuel. 1940-41	Fuel. 1941-42*	Fuel. 1942-43†
St. managed.												
B. & A.‡ ...	125	140	130	144	168	171	113	119	121	99	96	98
B. B. & C. I ...	117	117	115	95	105	102	108	110	110	75	71	72
E. I.	112	120	116	98	104	107	93	93	94	94	100	102
G. I. P. ...	99	104	107	83	98	104	135	166	168	48	57	57
N. W. ...	125	133	137	88	95	95	90	89	89	95	103	102
Com. managed.												
B. N. ...	138	148	154	131	139	140	111	121	126	106	118	118
M. & S. M. ...	118	123	124	100	104	108	117	122	124	82	102	99
S. I. ...	138	143	145	81	99	102	126	136	139	89	98	109
Total.§	119	126	126	101	110	112	111	118	119	83	89	90

* Revised Estimates. † Budget Estimates. ‡ Totals of the E. B and A. B. § Including the figures of smaller systems.

DEPRECIATION ACCOUNTING ON AMERICAN RAILWAYS.

In the Fifty-fifth Annual Report of the Interstate Commerce Commission, United States, there is a brief discussion of the recent changes in regard to the system of depreciation accounting on American railways. The relevant extracts are reproduced below :

"By order entered in Telephone and Railroad Depreciation Charges, 177 I. C. 351, decided July 28, 1931, we prescribed depreciation accounting for steam railroads, the order covering all depreciable property, including fixed property as well as equipment. The order became effective with respect to the latter. The railroads had never theretofore, except in sporadic instances, included in operating expenses annual charges for accruing depreciation of their fixed property. It was evident that a radical change from the replacement or retirement accounting for such property which had been followed for many years to a system of depreciation accounting would cause much initial expense of installation. Because of this fact and the extraordinary depression of railroad earnings, which then existed, we postponed the effective date of the order indefinitely, so far as it related to fixed property. The present earnings of the railroads, under the stimulus of the national defence programme make this an opportune time to inaugurate the new accounting. Furthermore, the rapid intensification of competitive conditions in transportation, which has occurred since our depreciation order was originally entered has made depreciation a factor of continually increasing importance, especially the depreciation which results from obsolescence. Accordingly, the matter of requiring depreciation accounting for fixed railroad property, has been given renewed consideration by the Bureau (of Accounts) and has been taken up with the carriers with a view to making such accounting effective on January 1, 1942, if possible.

* * * * *

During the year we issued 91 orders having their inception in the work of the Bureau. Of these, 10 prescribed initial depreciation rates for certain steam railroads, and pipe lines, and 65 modified previous depreciation orders in such respects as were found necessary as a result of continuing supervision of the depreciation rates of those classes of carriers. The other 16 orders pertained to our accounting regulations for steam railroads, electric railways and pipe lines, and in the main were designed to modernise the regulations the better to meet the present day needs. Among the more important of the latter orders is one strengthening the rule requiring steam railroads to adjust their accounts when the value of their investments in securities has been permanently impaired."

The question of the correct treatment of the element of depreciation has also cropped up in connection with the investment accounts of reorganised railway systems. In the accounting classifications prescribed by the Commission, investment in physical property is stated on the basis of cost to the accounting carrier. Where a carrier purchased the property of another as a going concern, another account, " Cost of road purchased " was provided. This account was intended to reflect the cash cost of any road or portion thereof thus purchased. But as both depreciation and retirement accounting are generally based on cost, the use of the account-referred to above) for recording the acquisition of properties by the new company would have caused complications upon retirement of equipment units and their replacement by new units. In case of property, other than equipment, it might also upon retirement of a unit which was replaced, have resulted in unfairness to the reorganised company when compared with carriers in its territory which had escaped reorganization. There was also the possibility that it might cause the reorganised company certain hardships upon retirement of property not replaced, as when some portion of the railroad was abandoned.

Accounting classifications adopted by other Federal agencies in recent years have required that investment be stated on the basis of original cost, that is, the actual money cost of the property at the time when it was first dedicated to public use, whether by the accounting company or a predecessor.

There is, the I.C.C. Report states, a sound basis in the insistence in these accounting classifications upon accounting which will include and preserve a record of the original cost of property used in public service. While it is probable that the need for the accounting prescribed in these classifications was discerned because of the fact that plants had been acquired as going concerns for prices materially in excess of their original costs, and while in reorganization cases we are dealing with a reverse situation, there is, nevertheless, equal need for the statement of property in the accounts at original cost, or the best estimate thereof which is obtainable. The advantages of a uniform and continuing basis for the depreciation and retirement charges on account of railroad property, regardless of whether the accounting company has or has not undergone financial reorganization, or whether it has acquired units of property new or as parts of going concerns, are clear.

The Interstate Commerce Commission have accordingly concluded that the existing accounting classifications, form the balance sheet and annual report form should be so modified as to provide that property acquired be stated in the accounts at original cost as of the time the property unit was first devoted to railroad service, such cost, if not known, to be estimated by the Bureau of Valuation; that the difference between the original cost and cost to the new company of acquiring the property, whether from another railroad or from a receiver or trustee in bankruptcy, be shown in an adjustment account to be carried on the assets aside of the balance sheet; and that the cost of the accounting company be measured, when securities are given in exchange, or liabilities assumed, by the face value of those securities, or, in the case of stock without par value, by the amount at which such stock is carried as a liability by the accounting company with the approval of the Commission.

* * * * *

According to an order dated January 19, 1942, the Interstate Commerce Commission have issued accounting rules covering optional depreciation accounting for roadway and structures in modification of the previous rules. Depreciation accounting for fixed property is made optional, which is looked upon, according to a summary published by the *Railway Age*, as a review of the long-pending mandatory order to come into effect on January 1, 1943.

The present charges attempt to substitute the group plan for the unit plan of accruals. Under the unit plan, depreciation was accrued for each individual structure which a railway may desire to depreciate, that is, it might accrue depreciation for one station but not another. Under the group plan accruals are at a composite rate covering all units of a primary account group such as "station and office buildings." This deprives the railway of the option to discriminate between station units for purposes of providing depreciation. It will now have to provide depreciation for the "Station and office buildings" group as a whole or not at all.

The "depreciable" accounts for purposes of the group plan are:

Tunnels and subways;	Grain elevators;
Bridges, trestles & culverts;	Storage warehouses;
Elevated structures;	Wharves & Docks;
Ties;	Coal & Ore wharves;
Rails;	Telegraph & Telephone lines;
Other track material;	Signals & interlockers;
Fences, snowsheds & signs;	Power plants;
Station & office buildings;	Power transmission systems;
Roadway buildings;	Miscellaneous structures;
Water stations;	Roadway machines;
Fuel stations;	Shop machinery; and
Shops & engine houses;	Power plant machinery.

It is stated that separate composite annual depreciation rates shall be used in computing depreciation charges for each primary account covering depreciable property on which the carrier elects to accrue depreciation. The percentage rates "shall be based on the estimated service lives of the road property developed by a study of the carriers history and experience and such engineering and other information as may be available with respect to future conditions." Provisionally, until such rates are computed, carriers are to use percentage rates prescribed by the Engineering section of the Bureau of Valuation of the I. C. C.

Consequent on these changes, the classification of operating expenses is modified by the cancellation of some 27 of the present depreciation accounts and the substitution in lieu thereof two accounts, namely, Road Property—Depreciation; and Shop and Power-plant Machinery—Depreciation.

These changes are expected to appeal to the American Railways, especially those emerging from reorganization, as they might find it easier to put through a comprehensive depreciation accounting system at the present time.

EXCESS MACHINE CAPACITY AND DEFENCE NEEDS.

There is one place in the railway industry, writes, Mr. H.C. Wilcox, Associate Editor of the *Railway Age*, where excess capacity exists, namely, in the machine shops of the medium and large locomotive repair shops. The existence of excess capacity is shown by the machine load factor, which indicates the number of hours of actual use as compared to that they might be used. The potential capacity of a shop containing 300 machine tool units may vary from 624,000 machine hours on a single shift 40 hour week basis to 874,000 machine hours in a single shift 56-hour week basis with necessary allowances made for machine servicing time.

Mr. Wilcox instances how recent studies have disclosed that the machine load factor on a single shift 40-hour week was as low as 35 per cent leaving an excess capacity of 65 per cent; with the same performance measured against a seven-day week the load factor drops to 25 per cent and the excess increases to 75 per cent. The idle hours thus revealed may be used in defence work to the advantage of the nation and the railways. This is especially true of the available machine of large size and heavy-duty design. The problem that will have to be faced is that of additional skilled operators, who could be found either by a transfer from less important machines and new trainees to take their places.

RAILWAYS AND PUBLIC OPINION.

In the United States the technique of sounding public opinion has been perfected and the reading public are afforded occasional glimpses into the complex mental workings of millions of people with their diverse ideas and prejudices. The Association of American Railroads has recently obtained from the Opinion Research Corporation through its scientific sampling process a survey of public opinion on various aspects of railway transport in the United States. The survey revealed that on many questions the public had distinctly favourable views and where its opinions were unfavourable to the railways were found to be based largely on misinformation and misconception

Some of the conclusions of the survey are interesting. Thus 56 per cent. of the persons interviewed believed that American Railways have done a good job in preparing to handle emergency traffic. A large majority (68 per cent.) expressed the belief that railways were more important to the defence programme than either trucks or barges. When asked which form of transport had done its defence job best, 46 per cent. answered "Airplanes"; 20 per cent. Railways; 19 per cent. shipbuilding; 12 per cent. automobiles and only 6 per cent trucks. How well-informed the public were on railway questions may be seen from the fact that 42 per cent. of those interviewed either did not know that Railways were operated by Government or believed that they were privately operated. Strangely enough, women, large city dwellers and the lower income groups which showed majorities for Government operation in war-time were also the groups which had the highest opinion of the performance of railway managements.

ESSENTIALS OF DEFENCE TRANSPORTATION.

President Roosevelt set up by an executive order in December last, the Office of Defence Transportation, the duties of which were stated as follows :

"Subject to such policies, regulations, and directions as the President may from time to time prescribe, the Office of Defence Transportation shall :

(*a*) Co-ordinate the transportation policies and activities of the several federal agencies and private transportation groups in effecting such adjustments in the domestic transportation systems of the nation as the successful prosecution of the war may require.

(*b*) Compile and analyze estimates of the requirements to be imposed upon existing domestic transport facilities by the needs of the war effort; determine the adequacy of such facilities to accommodate the increased traffic volume occasioned by the war effort; develop measures designed to secure maximum use of existing domestic transportation facilities; and stimulate the provision of necessary additional transport facilities and equipment in order to achieve the level of domestic transportation services required; and in this connection advise the Supplies Priorities and Allocations Board as to the estimated requirements and recommend allocations of materials and equipment necessary for the provision of adequate domestic transportation service.

(*c*) Co-ordinate and direct domestic traffic movements with the objective of preventing possible points of traffic congestion and assuring the orderly and expeditious movement of men, materials and supplies to points of need.

(*d*) In co-operation with the United States Maritime Commission and other appropriate agencies, co-ordinate domestic traffic movements with ocean shipping in order to avoid terminal congestion at port areas and to maintain a maximum flow of traffic.

(*e*) Perform the functions and exercise the authority vested in the President by the following, subject to the conditions set forth in paragraph 3 of this order :

(*f*) Survey and ascertain present and anticipated storage and warehouse requirements at points of transfer and internal areas and encourage the provision of increased storage, loading, and unloading facilities where necessary.

(*g*) Represent the defense interest of the government in negotiating rates with domestic transportation carriers and in advising the appropriate governmental agencies with respect to the necessity for rate adjustments, caused by the effect of the defence programme.

(*h*) Advise upon proposed or existing emergency legislation affecting domestic transportation, and recommend such additional emergency legislation as may be necessary or desirable.

(*i*) Keep the President informed with respect to progress made in carrying out this order and perform such related duties as the President may from time to time assign or delegate to it.

4. In the exercise of its functions and authority with respect to transportation priorities and preference, the Office shall be governed as to the relative importance of deliveries required for defence by such instructions, certifications, and directions as may be issued by the office of Production Management pursuant to the provisions of the executive order of August 28, 1941; and the Office shall take all lawful steps within the scope of its authority to effect such deliveries through appropriate public or private agencies.

5. In the study of problems and in the discharge of its responsibilities, it shall be the policy of the Office to collaborate with the existing departments and agencies which perform functions and activities pertaining to transportation and to utilise the facilities and services to the maximum. Particularly, it shall maintain close liason with the United States Maritime Commission in the consideration of problems involving the relationship of ocean shipping with coastwise and intercoastwise shipping and inland transport; with the Interstate Commerce

Commission on problems of rates, routing, and car service; and with the War and Navy Departments with respect to the Strategic movements of troups and supplies by domestic transportation carriers. The Office may arrange for the establishment of committees or groups advisers representing two or more departments and agencies or private transportation groups, as the case may require, to study and develop plans for the co-ordination and most effective use of existing domestic transportation facilities."

To facilitate unity of policy and action and the use of existing governmental services, the heads of the departments connected with the defence and other services are required to designate a responsible representative or representatives to maintain formal liason with the Office of Defence Transportation. The order also provides for the creation of divisions to deal with different forms of transport and such other staff or operating divisions as the Director may determine.

The President has appointed Mr. Joseph B. Eastman, Chairman of the Interstate Commerce Commission, who has distinguished himself in the field of transportation as member of the I. C. C., and more recently as the Federal Co-ordinator of Transportation.

BRITISH RAILWAYS LOOK AHEAD.

It is understood that the British Railway Companies have decided to appoint a commission charged with the task of enquiring how the efficiency of the undertakings can be improved by schemes of post-war reconstruction or reorganisation. The measure of the importance attached by the Railways is shown by the fact that Sir Ernest Lemon, one of the ablest officials of the industry, and the Vice-President of the L.M.S., is to act as fulltime Chairman of the Commission. According to the London *Economist*, the Commission will be concerned largely with the ways and means of improving the technical efficiency of the railways and with adapting their facilities to post-war needs. The scope is, therefore, considerable, and on the purely technical side investigations of the possibilities of new equipment, extension of main-line electrification, closer collaboration between the four main-line companies, and the relationship between railways and other means of transport are indicated.

RAILWAY WORKING IN WAR-TIME.

The remarkable efficiency with which British Railways are carrying on in face of tremendous difficulties has drawn a well-deserved tribute in a special article in the *Modern Transport*, London, (Jan. 3rd. 1942), which states:

"Since the War began there have been 576 air raid alerts; there have been 86 raids on consecutive nights, the longest lasting for 14 hours. Immediately around the yard there have been many incidents; on the yard itself, there have fallen high explosive bombs and incendiaries. Throughout all these, the 214 men employed in the yard have been continually at work; indeed, the only time they went to shelter was on the initial Sunday morning when first alert of the war sounded. As to damage, on one occasion, high explosive bombs closed a number of roads. The affected tracks were carrying normal traffic by 4 P.M. on the following afternoon. One man was killed by a bomb and 4 were seriously injured. Resourcefulness in the face of sudden abrupt emergency is as needful as courage under bombardment. To take but one example, there is the case of a wagonload of valuable freight, fired by incendiaries which was saved by being quickly run under a locomotive water column. Throughout all the war period the yardmaster has been present at the yard in every single raid, day and night. Quite apart from the actual bombings, the yard has to be completely blacked out during a night alert. But the speed of marshalling operations on those miles of sidings may not be reduced. It is not reduced; indeed, where humping is concerned it cannot be reduced. So railwaymen carry on steadfastly by daylight or blackout, siren or no siren, feeding the population, feeding the factories, and supporting the Armed Forces. They deserve the gratitude of their fellow citizens."

This record which refers to a marshalling yard of the L.N.E.R. near London is one of which any railway may be justly proud.

STOLEN IN TRANSIT.

Under this title, the *Modern Transport*, London, commented in a leading article (February 28, 1942) on the effects of pilferage in the present emergency. Loss of goods in transit, whether by petty pilfering or large-scale robbery, it observes, " represents in the aggregate a serious brake on the national war effort." A high proportion of the time of many executives is taken up and large staffs have to be employed to enforce preventive and remedial measures and to handle claims. Carelessness in packing, absence of skilled labour in the packing departments and shortage of paper have led to exceptional difficulties which have offered opportunities for pilferage. The evil appears to have reached large proportions. The *Modern Transport* quoted the recent statement of a well known North of England haulage contractor to the following effect : " Goods are being stolen from road and rail vehicles and from warehouses at a rate which amounts to millions of pounds' worth a year. This plundering has grown even worse during the past three months and it is likely to increase still further. Unless drastic measures are taken by the authorities, I do not think the Ministry of Home Security realizes how grave the situation is." The contractor had good reason for his complaint, for last year, his firm suffered a loss of £20,000 on this account. Better preventive measurements by the police and more rigorous punishment on detected offenders are recommended, particularly those connected with the black market and its agents. The penalty may be " harsh but salutary in its effect on others who may be on the brink of temptation but are deterred when shooting is the penalty for racketeering."

STAGGERING THE HOURS OF WORK.

Staggering of holidays with a view to spread holiday traffic has now been applied with considerable success on British Railways. This has had the effect of relieving the congestion during a limited period and enabling the railways to get more work done during slack time. The same principle now appears to have been applied with significant success in the London area with a view to easing transport peaks. It has been found, according to an analysis published in the *Modern Transport*, London, that over the peak hour traffic as a whole, there is a sufficient accommodation to provide reasonable travel comfort for all. The problem is illustrated by the figures of the arrival of workers at a group of factories in East London. At 7 A.M. there were 302, at 7-30, 5,574 at 7.45, 56 at 8, 6,337 and at 8-30 A.M. 900 workers arriving. Although the largest number of vehicles have been provided the result of the uneven traffic has been an alternation of wasteful excess of seats and overcrowding, discomfort and delay during the period of maxim demand.

The war emergency has compelled an examination of the question. The existing conditions pleased no one. Overcrowding and long waits were a source of fatigue to the workers and irritation to the transport staff. The black-out conditions, earlier closing of many offices, and the natural desire of workers to be back home earlier accentuated the difficulties, by reducing the peak traffic period from 2 hours to a little more than an hour. The need to maintain essential production was becoming more urgent. The problem was accordingly tackled and the solution found was " the staggering of hours of starting and finishing work, so that a uniform flow of traffic into and out of each area can be obtained during peak periods, morning and evening."

The principle of staggering was applied and according to the *Modern Transport*, there are now 22 " staggered hours " schemes in operation affecting 225,000 workers. An earlier start for some means, of course, domestic re-

arrangements, not quite pleasant during the winter, these were more than offset by other advantages, namely, " less waiting time, less crowding of vehicles speedier journeys, greater safety, less fatigue, and longer evenings, giving more time for recreation or other voluntary work of national importance." With the success already experienced, the principle may be extended to other cases, such as the rearrangement of the school hours, so as not to collide with other traffic during the peak periods. What has been accomplished by staggering may be seen from the following figures quoted by the *Modern Transport*.

	No. of workers arriving.	
	Old rate.	New rate.
7 A.M.	302	302
7.15 "	....	3,000
7.30 "	5,514	2,514
7.45 "	56	3,556
8 "	6,337	2,067
8.10 "	....	870
8.30 "	900	900

PREPARATION OF STATEMENT OF UNSANCTIONED EXPENDITURE.

In a memorandum prepared by the Railway Board for the Public Accounts Committee, the method of the preparation of the statement of unsanctioned expenditure is discussed. The Committee in the connection with the appropriation accounts of the previous year raised two points, namely, (*a*) the examination of the necessity for the amendment of the rules regarding the preparation of formal estimates in certain cases ; and (*b*) the improvement of the exhibition of the particulars of unsanctioned expenditure in the appropriation accounts.

In regard to (*a*), the cases to which the Committee devoted particular attention were scattered renewals of permanent way—a matter which was then reported to be under correspondence, and wagons which had been put out to tender. The former has been settled by the amendment of the Code. As regards the latter, the Railway Board have come to the conclusion that estimates should continue to be prepared so that the sanctioning authorities may be aware of the allocation of expenditure between capital Depreciation Fund and Revenue, and the Accounts and Audit authorities may have an opportunity of checking it. In regard to the rules generally, the Railway Board consider that no radical change is called for.

As regards (*b*) the following conclusions have been arrived at in consultation with the Director of Railway Audit and the Auditor-General.

1. The limit of Rs. 10,000 observed hitherto in regard to the exhibition of the data of unsanctioned expenditure in Annexures 'A (*i*)' and 'A (*ii*)' (to which the Committee's criticism was mainly directed), should be received as used for the local offices, but a selection should be made by the Controller of Railway Accounts and the Director of Railway Audit, of the important items that deserve to be exhibited in these annexures. As Annexures 'A (*i*)' and 'A (*ii*)' should show only important items, the totals of the figures therein will not agree with those in Annexure 'A' as at present. The headings of the Annexures should, therefore, be suitably modified. In making the selection the following principles will be borne in mind :

(*a*) Works or schemes relating to the year under review, which have been sanctioned by the Railway Board or the Standing Finance Committee will be excluded ;

(*b*) Expenditure on advance purchase of certain specified materials such as wheels and axles, under-frames etc., relating to the year under review, will also be excluded, provided that it has been included in the sanctioned programme of the year ;

(*c*) The intention is generally to exclude from the Annexure items of expenditure relating to the year concerned and which do not indicate irregularities of a serious nature or risk of nugatory expenditure.

CANAL DEVELOPMENT TO DIMINISH PRESSURE ON RAILWAYS.

In pursuance of the policy of improving communications of all sorts the Madras Government have in their budget for 1942-43 included a provision for improving the canals on the West Coast, which will establish through communications between Badagara and Cochin *via*. Calicut. It is also stated that works estimated to cost Rs. 2.87 lakhs were under execution in 1941-42 for deepening the Buckingham Canal north of Madras with a view to relieve pressure on railway transport. A special staff has also been sanctioned for the organisation of boat traffic in the canal for quick transport of essential commodities from Rajamundry and Bezwada to Madras.

CANADIAN RAILWAYS, 1940.

According to the Preliminary Report on the statistics of Steam Railways, recently issued by the Dominion Bureau of Statistics, the Canadian Railways earned more than $400 millions for the first time since 1931. The revenues for the year amounted to $429 millions, while operating expenses stood at $335 millions. Taxes were higher by 45 per cent. as compared to the previous year, namely, $. 4.5 millions, and interest on funded and unfunded debt increased to $ 80 millions. As the United Kingdom Government redeemed the Grand Trunk Railway 4 per cent. perpetual consolidated debenture stock held in the U. K. and this was purchased by the Canadian National Railways through a 3 per cent loan from the Dominion Government, there was a substantial reduction in annual interest charges for the Canadian National.

The average miles of road operated during the year stood at 42.676. Revenue freight train miles increased by 13.8 per cent and passenger train miles by 2.1 per cent. but revenue freight ton miles increased by 20.4 per cent. to 37.898 millions, which has been exceeded only once in 1928. Passengers carried increased by 7.3 per cent. and passenger miles increased by 24.2 per cent. The average passenger journey was 99.1 miles, the longest ever recorded for any year.

The number of employees increased by 4.9 per cent. to 135,700. The number of female employees increased by 30 per cent. to 6,300 probably the effect of the war.

The statistics of operation for the two principal systems, the Canadian National and the Canadian Pacific are given below.

Statistics of working on the Canadian National and Canadian Pacific Railways, 1940.

		Canadian National	Canadian Pacific.
Average mileage operated		23,603	17,159
Capital	(in millions of $)	1,108	753
Operating Revenues	„	248	182
Operating Expenses	„	203	137
Net Revenues	„	45	46
Fixed charges	„	53	26
Passenger earnings	(in millions of $)	22	18
Passengers carried	(millions)	11	8
Passenger miles	„	1,125	925
Freight earnings	(in millions of $)	195	136
Volume of freight	(„ tons)	55	37
Ton miles	(millions)	21,532	16,028
Freight train miles	„	35	23
Passenger train miles	„	19	17
Operating Radio	(Per cent.)	81.82	74.98

PASSENGER TRAFFIC DIFFICULTIES IN THE U. S. A.

Those who feel the inconveniences of the present restrictions on passenger traffic in Indian Railways to be needlessly irksome may draw some comfort from the experience of the United States before her entry into the present war. According to the *Survey of Current Business*, October 1941, quickened activity throughout the nation has been manifested in the general expension in all modes of travel, railway, motor, air. The influence of a higher level of income and increased need of public officials commercial representatives, and the Army, are all reflected in the advance. Thus, the number of air passengers rose 37 per cent in the first half of 1941 over the like period in 1940. Travel by parlour and sleeping car increased 27 per cent. while railway coach travel expanded 15 per cent. At the same time, the number of passengers conveyed by Class I motor carriers advanced about one-third, while private passenger automobile usage was the heaviest on record, if gasoline sales up 11 per cent. in the first eight months over a year earlier.

According to the *Current Business*, military travel, both official and on leave, has been an important factor contributing to increased motor and rail operations. Nearly 1,900,000 members of the armed forces were carried by the railways on Government account during the first eight months. While military travel of this sort represented only 10 per cent of the aggregate increase, week-end leaves and visits to camps appreciably raised the direct and indirect military contributions. Soldier movement has also been instrumental in lengthening coach trips by rail about 12 per cent. Air and parlour and sleeping car trips have changed little in length on the average.

With the exception of air transport, facilities thus far have been adequate to meet the increased requirements for travel. But the railways have been forced to utilise old equipment that have been maintained in serviceable condition for " stand-by " purposes. Moreover, partly in anticipation of a further expansion of requirements, next year, passenger train schedules are being readjusted to eliminate duplicate services by two or more railways, where it is advisable. In addition, some unnecessary trains on poorly patronised branch lines and on secondary main line services are being discontinued. In the case of commercial air transport all requests for seats, particularly at peak hours, cannot now be filled and the air lines are making efforts to induce use of the lines at off-peak times.

A more serious bottle-neck in passenger transport exists in certain urban centres, where new defence plans have made necessary a heavy influx of additional labour. Passengers carried by local transit lines numbered only 6 per cent. more in the first eight months of this year than in the like period of 1940. But the gains have been concentrated in a relatively few areas and new planes, as a rule, are located somewhat further on the homes of workers than are old plans. Any shortage of gasoline will, of course, create a more difficult transport situation in these areas. Meanwhile, producers of motor carriers for urban passenger transport have been given a very high blanket priority rating for necessary material.

ROUNDING OFF DECIMALS.

An article in a recent issue of *Power* calls attention to the degrees of error which may be introduced into calculations by rounding off decimals ending in 5 to the next higher figure. A new standard prepared by the American Standards Association (*Publication* Z 25-1-1940) points out that the correct method is to round off to the nearest even figure, *e. g.* 3.25 to 3.2 ; 0.215 to 0.22 ; and so on. To illustrate the importance of this matter : The correct value of :

2 x (0.5 plus 1.5 plus 2.5 plus 3.5) is 16

but by the uncorrect method, approximating to the next higher figure the result is

2 x (1 plus 2 plus 3 plus 4)=20

on the other hand by rounding off to the nearest even figure the result is

2 x (0 plus 2 plus 2 plus 4)=16.

It is a coincidence that in this particular case the latter result is exact, but by taking other examples it will be found that the even-figure rule is always much more nearly accurate than the next-higher rule which results in cumulative errors. Of course in many cases the rounding off of decimals consists mainly in simplifying the constituents of the known (or readily ascertainable) result, especially in conversions from metric measurements and one effecting the calculations could obviously avoid presenting constituents which failed to total accurately. The rounding off rule facilitates this.

INSTITUTE NEWS.

JOURNAL.

The delay in the publication of the present number of " Railway Accounts and Finance " is regretted. Owing to factors beyond our control, this could not be avoided. Our readers will, we hope, appreciate the difficulties which all professional and technical publications have to face in the extraordinary conditions created by the war. One of our regular features, Railway Statistics, has had to be discontinued in consequence of the information in the usual form not being available. Another, Current Periodicals, has also been affected by the uncertainty and irregularity of foreign mails. It will be noticed that the use of smaller type has enabled us to keep the usual amount of literary matter without any substantial reduction. The features now omitted will be restored as soon as conditions permit.

ELECTION.

Mr. P. C. Choudhury, Chief Accounts Officer and Financial Adviser, East Indian Railway, has been elected Fellow of the Institute.

CHANGE OF ADDRESS.

It is requested that change of address and /or designation be notified without delay to the Secretary, I. R. A. A.

As complaints have reached to the effect that letters have been miscarried, it is requested that all communications be addressed to Post Box 10407, CALCUTTA.

OBITUARY.

SIR TREVREDYN WYNNE, K.C.I.E., K.C.S.I., 1853-1942.

Our readers will have learnt with profound regret of the death in England on June, 28th, at the great age of 89 years, of Sir Trevredyn Wynne, Chairman and Managing Director of the Bengal-Nagpur Railway Company.

His was a remarkable career, closely connected with the administration and development of Indian Railways. Born in pre-Mutiny times, in 1853, Trevredyn Wynne was educated at Brighton College, at Cooper's Hill. He entered the service of the Government of India in October 1874 as an Assistant Engineer, 2nd Grade, in the Public Works Department, Agra Division, on the then Rajputana-Malwa Railway. In 1877, he was transferred to the Dhond-Manmad State Railway now part of the Great Indian Peninsula Railway—and later in 1879 to the Botad Division of the Kathiawar State Railway—now the Bhavnagar State Railway. In 1882 his services were placed at the disposal of the B. & N. W. Railway from which he reverted to Government Service in 1886, to officiate as the Deputy Consulting Engineer for Railways at Bombay. In the following year he resigned from Government Service to accept the position of the Agent and Chief Engineer of the B. N. Railway. That Mr. Wynne should be appointed to so responsible a post at the comparatively early age of 34 is no small testimony to the ability and vigour he brought to his tasks. During the 18 years of his service in this capacity, the Bengal-Nagpur Railway systems expanded its net rapidly. Special mention may be made of the conversion during 1888-91 of the old Chattisgarh State Railway, Nagpur-Rajnandgaon, from Metre to Broad Gauge, a distance of 187 miles while "under traffic" and the new construction of 600 miles, namely, the Rajnandgaon-Asansol, Bilaspur-Umaria, Umaria-Katni, and Damodar-Sanctoria. In these constructions, he was closely associated along with his band of engineers.

While on furlough during 1902-04, he went to North China as Agent and General Manager of the Chinese Engineering and Mining Company at Tientsin. The venture did not apparently interest him and we find him back again at Garden Reach in November, 1904. His work on Indian Railways was recognised by Government in 1903 when he was awarded the C.I.E., on the occasion of the Delhi Durbar.

In the meantime the administrative reforms of Lord Curzon led to the establishment of the Railway Board which required the services of experienced and competent railway experts. Mr. Wynne resigned his post on the Bengal-Nagpur Railway in 1905 to accept membership of the newly established Railway Board. In 1908 he succeeded Sir Frederick Upcott on his retirement as the President of the Board. In the years which followed honours came to him from Government, K.C.I.E., in 1909, and K.C.S.I. in 1911. By now he had combined with his duties on the Board those of an "Additional Member of the Council of the Governor-General for making Laws and Regulations." His tenure of office coming to an end in 1914, he returned to England where he served as Government Director of the Indian Railway Companies in the India Office, London, prior to his appointment in 1915 as Managing Director of the Bengal-Nagpur Railway. In 1930 he was elected Chairman of the Board of Directors of the Bengal-Nagpur Railway Company and served in both capacities up to the date of his death. He was also a Director of the Anglo-Persian Oil Company and of the Burma Corporation.

Judged by any standards, Sir Trevredyn's was a remarkable life. With his close connection with the Indian Railways for 68 years, his name is linked with what may truly be called as the railway era of the country.

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