9 OCT 1956

The RAILWAY ACCOUNTANT

A MONTHLY JOURNAL DEVOTED TO RAILWAY ACCOUNTS, AUDIT & FINANCE.

Published on the 15th of every month

Vol. III No. 6 SEPTEMBER 1956 Re. 1-4-0

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Subscription:
Payable in Advance:
Annual: Rs. Ten.
Half-yearly: Rs. Five.

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For Groups of *Twelve**
Subscribers: *Annual*: Rs. 96.
For Libraries,
Institutes etc.: Rs. 9.

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The Managing Editor,
"The Railway Accountant"
14, Balakrishna Road, Mylapore,
MADRAS - 4.

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ACKNOWLEDGMENTS

The following Journals and Magazines have been received since the last issue :

Eastern Ry. Magazine	*July 1956*
Northern Railway Magazine	*August 1956*
Western Railway Magazine	—
Chartered Accountant	—
Southrailnews	*August 1956*
Railcoach	—
Indian Railway Gazette	*September 1956*
Accountants' Journal, New Zealand	*Aug. '56*
Central Railway Magazine	*August 1956*
Central Railway Newsletter	*August 1956*
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S. Ry. Accounts Society Bulletin	—
Australian Accountant	*August 1956*
Careers & Courses	—
Wednesday Review	*W. E. 5-9-1956*
Railway Herald	*W. E. 13-8-1956*
Monthly Railway Statistics (Rly. Board)	*December 1955*
Educational Review	*August 1956*
North-Eastern Railway Magazine	—
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The RAILWAY Accountant

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EDITED & PUBLISHED BY L. V. GOPALAN

A MONTHLY JOURNAL DEVOTED TO RAILWAY ACCOUNTS, AUDIT & FINANCE.

Vol. III SEPTEMBER 1956 No. 6

Divisionalisation of Railways

The formation of divisions on Railways previously not on the orthodox divisional pattern, is in full swing. On the Western Railway, all the Divisions are formed on the same date, while on the Central and Southern Railways, a phased method is being followed. So far as the Southern Railway is concerned, full fledged divisions have been formed at Madras, Olavakkot and Tiruchirapalli. At Madurai and Bezwada, divisional Offices have been set up, but the Accounts Branch is still functioning at Trichinopoly and Madras respectively, presumably for want of accommodation for Office, and more so for staff, at the divisional headquarters (Madurai and Bezwada). Three divisions are yet to be formed (at Guntakal, Hubli and Mysore), and are likely to start functioning in the next two or three months.

The Divisional Accounts Office will deal with only the General Accounts side of the activities of the Railway, thus covering Establishment, Expenditure, Provident Fund and Cash & Pay, with small sections for Budget and Booking, etc. It will not deal with Workshops, Stores or Traffic Accounts, which will form separate units by themselves.

One important matter that the administration may note is that sufficient notice should be given to the staff who are to be transferred, and secondly having regard to the human aspect, the transfers should be effected only after the school academic year is over, so that the employees who have children studying in schools may not be put to hardship. If this is not done, the result is a discontented staff at Divisions and it is easy to imagine the quality of work of such staff who will naturally be anxious about the education of their children. When the Goverment itself is anxious to do all in their power to help the young ones, it is not too much to expect that there should be no impediment placed by the Railways in the continuous study of their employees' children without break in their academic career.

It is also not improbable that there will be serious difficulties in getting admission for the children in the schools at the new places; and there may also be variations in text-books, standards of teaching etc. These may, therefore, lead to maintenance of duplicate establishments, which incidentally mean worries and financial difficulties to low-paid staff.

Apart from this, the separation of records for each Division, particularly of the Accounts Department, may be a slow process and some reasonable period of a few months may be required for this purpose. Just to cite one instance: the preparation of Skeleton Provident Fund Ledgers for each Division. Unless timely decision is taken about the staff allotted to each Division, this work cannot be done satisfactorily, and being a very important personal record, great care is needed in making it foolproof and accurate. Rushing this work through at the last stage in an incomplete state would detract from efficient work, and in fact, would lead to much avoidable correspondence, delay and inconvenience to staff later. If, therefore, there is sufficient advance notice of the jurisdiction of the Division, the change-over would be a simple affair. And more so, if the date is so adjusted as not to clash with any accounts period or any busy season.

We might easily take a lesson from Private Institutions like Business firms, Banks etc., who are able, by systematic advance planning, to close down at one place overnight and start work in another the next working day, without any hindrance to customers. Not only detailed and careful thought is necessary, but the execution should be effected with the co-operative efforts of the staff concerned who should realise their sense of duty towards their employers.

Another point on which we would like to touch is the need for the Authorities taking into confidence the staff representatives well in advance to ensure their whole-hearted support. It is certainly not helpful to tell the concerned staff at the eleventh hour about their transfers to other places with the least possible delay. There is nothing out of the way in this, since the administration would certainly have decided upon their programme some months ahead. Concerted action is always very healthy and goes a long way in smooth working.

Dr. Appleby's Report

The Second Report of Dr. Appleby on the Indian Administration was discussed in the Lok Sabha on the 10th Sep. 1956, but owing to limited time, only preliminary matters could be gone into. The discussion was initiated by Mr. C. P. Mathen and it was elicited that the report had to be viewed purely from the standpoint of expeditious execution of the Second Five Year Plan. Mr. Nehru in his reply pointed out that the Report was not intended for general publication but was to be treated as a private document for the consideration of the Government and one intended to "shake things up". The right approach to the report, therefore, he stated, was not to consider it deregatory on the Parliamentary Institutions or the administrative set-up, but as a frank and free survey by a very experienced expert of how the Indian Administration functioned and how the Government was adapting itself to changed conditions. Mr. Nehru pointed out that the Government had already profited to a surprisingly good extent by the previous report of the Expert and desired that the House should concern itself more with Dr. Appleby's criticism of Parliament than with that of the Auditor General, which formed only a minor part of the Report.

Mr. Nehru has thus given the background to the Report from which a review of the criticisms, particularly in regard to the functions of the Auditor General, should be made.

We shall revert to this subject in greater detail in the subsequent issues of this Journal.

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Basic Aspects of Claims Prevention

(BY SRI P. P. AYYAR)

(Continued from page 145 of August 1956 issue)

RESEARCH

There must be another section *i. e.*, the Research Section on the Prevention side. This Research Section will utilise the data from the Statistical Branch as well as from the reports of the outdoor Inspectors. In fact, this section will study the pathology of claims in regard to packing, labelling, marking etc. Whenever a particular type of packing is causing damage, deficiency or shortage, suggestions for improving the packing will be examined in detail by practical demonstrations and methods adopted to improve the position. The actuarial value of the risk involved in respect of a particular commodity in the present form of packing will be examined by this section and suggestions put forward for any improvement or rectification of any lacuna. In fact, the actuarial study of the risk of damage has not been made until now in Indian railways.

In time to come there is bound to be research on this aspect and actually the freight structure will have to be tuned up to this aspect. Sri Brown has suggested a high level research organisation to study the behaviour patterns of different commodities handled by the railway. As in foreign countries, we will have to analyse the claims paid for every rupee of freight earned. Where the trade has obtained a rebate in booking in the form of Owner's Risk rate and the claims preferred by them are lower than the reduction in rate, the claims will not be admitted.

Sri Crawford who examined this question of actuarial risk expressed difficulty in regard to accurate commutation of the risk in Indian Railways which are of continental nature with varying climatic conditions and different gauges. But time is not far off when we will have to find out ways and means of actuarial study so that suitable action can be taken for adjustment of freight or for improvement in the packing condition. The following are some of the important items, in my opinion that need detailed investigation by this Research Branch.

(i) *Reorganisation of small service.*—The SQT Service must be reviewed from time to time to see how far quicker transit of smalls can be achieved and responsibility of staff can be fixed, thereby reducing heavy payment of claims on this score.

(ii) The question of lac sealing-vs-lead sealing must be examined in detail to see which type of sealing should be adopted. The type of rivet used and the E. P. lock used for locking of wagons must be subjected to detailed examination from time to time in consultation with the Mechanical Department.

(iii) Various valuable commodities like ingots are subject to frequent running train thefts and yard thefts resulting in payment of heavy claims. This definitely calls for a system of provision of tin wagon frame inside the wagon so that these types of vulnerable traffic can be immuned from outside interference.

This Research section will also examine various aspects of delays to parcels and goods traffic to see how far these delays can be countered by improved method of working. The various aspects of mechanisation of commercial operations in important goods sheds and transhipment points will have to be explored by the Research Section of the Claims prevention branch. Palletisation of traffic by introduction of fork-lift working will have to be adopted to ensure increased velocity of commercial operations. In the transhipment sheds there must be perambulation of traffic; re-orginasation of goods sheds and traship sheds to accommodate modernisation will have also to be examined.

The question of low temperature transport of perishable traffic will also come in for research. In foreign countries perishable traffic is afforded refrigerated movement in such a manner that damage is controlled by proper ventilation, insulation and use of substances like "Drikold" as transport refrigerente. This Research section will have to examine the marking of packages in a scientific manner to see how far there can be improvement—thereby reducing the holdings of unconnected goods which are a standing problem in Indian railways. In short, this research organisation, with the help of competent outdoor staff, will be able to examine critically various aspects of railway working and suggest measures to redress the position.

STAFF RESPONSIBILITY SECTION

Another subject that is of very serious import in regard to claims prevention is the question of staff responsibility. In fact there has been heavy dilution of this aspect after relaxation of rules, introduction of convention system of claims settlement etc., during the war period. Human inefficiency has contributed largely towards payment of compensation claims. Sri Brown in his report has commented strongly on the weightage to be given to this problem, While the Payment of Wages Act, and the revised Disciplinary and Appeal Rules have put a brake on the possibility of deterrent action, at the same it is possible to take if prompt time is taken of the irregularities or the faults.

If action is taken at the over-ripe stage of claims settlement, the action actually is ineffective. In order to ensure more live measures to be taken in this regard there must be a separate section known as the Staff Responsibility Section under the Claims prevention branch. On the basis of anticipatory claims data available, action should be initiated towards fixation of responsibility so that there will be early follow-up in this regard with mitigating effect on claims arising from irregularities. For staff consistently involved in irregularities a Staff Index Card will have to be maintained in the Claims prevention branch and prompt action will be taken. There is a positive side to this question, *i.e.*, grant of rewards and encouragement to good work done by the Staff for claims prevention. There must be a small fund known as the claims prevention Fund at the disposal of the Commercial Headquarters and the Divisions or Districts from which such rewards will be given to the deserving staff.

It will also be necessary to create competitive spirit amongst the various traffic units to achieve results in claims prevention. Claims prevention weeks must be observed and the working of stations must be examined by a team of officers who will judge the merits of the stations and award suitable rewards to the deserving staff. There is also the problem of staff education. Claims prevention must be made a compulsory subject in Railway's training schools. All the staff must be given refresher course on railway rules and regulations in such a manner that the staff get a good grounding in the grammer of working so that claims arising out of inefficiency of staff will be obviated.

While the organisation, the tolso of which is indicated above for the Head quarters, will function, it is necessary to have a reflex organisation functioning in the Divisions or Districts in order to achieve substantial results. There must be an 'intelligence and dossier' section

in the Divisions where, D. D. messages are registered, indexed and action taken, the general mode of action taken being reported to Headquarters from time to time. There must also be a staff responsibility section in the divisions to follow up cases of irregularity.

Every unit down to the stations in the divisions or districts must be charged with the claims prevention drive. In fact, in respect of each station, it is necessary for the supervisory staff and the station masters to know on what items of traffic claims are anticipated and what are the causes that give rise to this. The officers in immediate charge of these stations must make a drive from their side to reduce claims and take prompt action in concert with the Headquarters and in co-ordination with the foreign railways.

Our attack from the divisional side on the problem of claims prevention must be on the basis of selected stations where claims are heavily paid instead of diffusing the claims prevention activeties among a large number of stations. There must be outdoor staff detailed in the divisions for checking up of various aspects of working and taking steps for remedying any defective feature noticed.

Part to be played by Security and Police Organisations.—Quite a lot has been achieved by the re-organisation of the Security Branch in the different railways. The Security force is beginning to assume Police complexion. The results have also been found to be satisfactory. Sri B. N. Mullik has gone into the question at length as to how the District police organisation in the different States and the Railway police will have to be re-organized in order to combat the high incidence of crime.

It is not proposed to go the into details of the various measures suggested for improving the position except to emphasise that more live liaison must be maintained between the Railway Claims prevention branch, the Railway police and the State police so that by a concerted action much can be achieved in crime prevention. In fact, it may be necessary for the different security organisations to tender their opinion from the security point of view in regard to remodelling of yards and goods sheds.

Public co-operation.—This is actually becoming one of the imponderables. In fact much can be achieved if there is spontaneous co-operation from the side of public, specially the trade. In foreign countries there are stringent packing conditions for commodities. The Indian trade seems to be allurgic to improvement in packing conditions. In fact in England, the emphasis that is given to the internal packing conditions of commodities cannot be overestimated. The water-resisting quality and tensile strength and thickness of packing materials are subject to critical examinations by packaging organisations to see that these packings can stand the strain of rail transit.

This is specially necessary in view of the continental nature of Indian railways in the back-ground of high crime. The trading public can help the railways by improving their packing conditions of goods and suggesting various new modes of packing so that claims can be reduced by scientific packaging. The trading public also should relay all possible information about thefts and pilferages so that the railway can exploit the data to its advantage. In regard to marking and labelling also the trade can improve the position, thereby reducing the number of consignments that go astray.

They can address packages properly thereby giving a chance to the Railway to connect goods.

Besides the various suggestions indicated above, I want to make a few more suggestions which I feel will definitely be a useful step to control claims.

(i) Time has come for reservation of certain claim-conscious vulnerable traffic for special treatment. Such traffic must be shadowed from the time of booking to the delivery at destination. As in foreign countries, it may be necessary to set in motion 'traffic security parties' drawn from efficient and honest staff of the different railway departments to pursue the movement of these vulnerable traffic which will be earmarked for such special scheme. It will also be necessary in the divisions or districts to have a shadow control organisation under the Security branch which will follow the movement of such vulnerable traffic from the starting point up to the destination.

(ii) While quite a lot has been achieved in regard to connection of unconnected consignments, it is felt that the claim bills can be reduced considerably further by improvement in the system of marking. PLM weeks are being observed from time to time in different railways whereby staff are educated in proper marking and irregularities are also taken up. In order to reduce the number of consignments becoming unconnected, the following suggestion is offered. Besides the present railway marking, the packages must also have a circle stencilled indicating the railway district of the destination. A small code book indicating the different railway districts must be made available to the staff. On the basis of this supplementary marking the scope of packages getting unconnected will be circumscribed to enable quicker and easier connection of anonymous consignments.

At the present moment, a heavy number of unconnected consignment are being sold from the L. P. Os of the different railways by public auction and the railways realise only a fraction of the value of the goods.

In order to improve the position in this regard it is suggested that 'claims Commutation Scheme' can be operated successfully in the different railways. There will be a joint standing committee consisting of members of Chambers of Commerce and other trade bodies and railway officers who will examine claims received for loss of goods and also take inventory of the goods lying in the L. P. O. for barter set-off on valuation of these goods against the claims received. In this manner the railway will find a better market for the unconnected goods and the trade will also be benefited in as much as goods belonging to the same family are made available in lieu of the goods lost instead of by monetory payment. Much depends on the co-operation of the trade which has to play a very vital part in the success of the scheme. L. P. Os will then no longer be 'tombs' of traffic but a 'live package exchange'.

What has been indicated above is only a very elementary approach to the great problem of claims prevention. With the general moral awakening and security schemes launched by the railways in times to come, we will be able to look upon the problem of claims prevention with great optimism. After all, Indian railways are not alone in facing the problem which is also a burning question with the railways in foreign countries. The problem has to be tackled purely from a commercial bias so that money spent will actually mean money withdrawn from payment for losses and damage to public goods. Besides, the Railway would have recovered the goodwill from their clientele. Then the trading public will no longer have nightmares, of pilferred goods, broken packages or damaged consignments in regard to transport by rail.

Cost Accounting in Railway Workshops

BY D. R. KAR

(Continued from page 148 of August 1956 issue)

Note :—Ef — Estimated factory overhead for Budget.
El — Estimated direct labour cost per budget.
Ep — Estimated production in terms of units.
Elp — Estimated direct labour hours per unit.
Emp — Estimated machine hours for budget.

Methods :—

1. Percentage of Direct labour cost : $\frac{Ef}{El}$ = % of direct labour cost.
2. Production in terms of units : $\frac{Ef}{Ep}$ = Overhead rate per unit.
3. Direct Labour hours : $\frac{Ef}{Elp}$ = Rate per machine hour.
4. Machine hours : $\frac{Ef}{Emp}$ = Rate per hour of direct labour.

Having dwelt at some length on the *modus operandi* of the modern cost accounting practices, we are in a position to examine the costing system as it has been evolved for the Indian Railway Workshops. Railway Workshops were built originally purely for the purpose of carrying out the repairs and renewals of locomotives and rolling stock. In recent years, however, the range of work performed in them has come to comprehend a considerable amount of Capital Construction Work. A growing keenness for the manufacture, locally, of rolling stock and a heavy programme of replacements and renewals involving usually heavy outlay on Capital have been responsible to a large extent for this change.

Railway Workshops continue, however, to be, in the main, 'repair shops' and the nature of the works organisation and accounts suitable for them cannot be based on models copied from Commercial Concerns which produce definite manufactured articles for sale in a competitive market. The amateur costing enthusiast does not allow his mind to dwell long enough on the magnitude of this difference and proclaims that the panacea for all evils is the immediate adoption of a complete costing system. On the other hand, the old stager who has identified himself with the growth of these institutions is likely to forget that new conditions require an alteration in outlook as much in the Workshop Accounts Officer and Works Manager as in the politician and the methods which might have been proved quite satisfactory at a certain stage in the development of institutions might fail at some other stage.

A remarkable feature of the system in vogue in Railway Work Shops today is the minute sub division of work orders. There, shop is the ultimate unit where they are not further divided into sections. It is also, therefore, the unit for purposes of initial accounts. The work carried out at each shop has to be accounted for initially before the accounts of the workshop can be compiled. The extent to which the expenditure incurred in a workshop (i.e., cost of jobs) should be further analysed depends very largely on the information that is required by the authorities controlling such expenditure. There is no higher limit for such analysis, except that of the cost of the analysis itself which has to be determined by practical considerations and the actual needs of each Railway Administration. There is, however, a lower limit owing to the need for,

(1) recording expenditure under the detailed and sub-detailed heads of accounts classification under Capital or Revenue;

(2) identifying expenditure that has to be separately recorded for the reason, say, that it has to be billed for and recovered, whether recovery has to be made from another department or division of the railway or from outsiders.

TIME BOOKING PROCEDURE

The methods of time-keeping in vogue in Indian Railways Workshops have been sanctified by custom and usage and have much to recommend them. There are, however, one or two improvements which it will be advantageous to introduce in order to make the organisation of time-booking more coherent than at present. Time-keeping and time-booking will have to be ultimately done by means of time recording clocks and in Chittaranjan Works at least time-recording clocks have been installed in all the shops. The attendance of the workmen should be recorded on Gate Attendance Cards, each workman being allotted a card at the beginning of the month. Time attended by a workman in a month is available on Gate Attendance Card from day to day as the time is punched both at the time of entering and leaving the shop. The time on the cards would be totalled at the end of the month and posted to pay bills which form the basis on which the wages are calculated. Gate Attendance Cards can also be used as Pay Tickets. Eventually job cards should be introduced in all the shops. No job card should be closed until the job for which it was issued has been completed. As, at the end of the month, some jobs would be in progress, to enable reconciliation of the time booked to jobs during the month and the time attended by the workmen for which the payment is made, supplementary job cards would have to be prepared in respect of the jobs in progress on which the time worked up to the end of the month is recorded by the Time Clerk. These cards would have to be submitted to W.A.O. for completion of the total time booked for the purpose of reconciliation with the total time paid for.

In addition to the direct expenditure on labour and materials that is incurred on jobs and is accounted for certain other expenditures of the nature of 'on-cost' are incurred and are analysed under:—

1. Proforma on-cost 2. General on-cost 3. Shop on-cost. These on-cost charges are distributed amongst the various jobs in proportion to their labour charges. Pro forma on-cost stands for the indirect charges which are not included in the cost of work done in Railway Workshops, but which would be included in Commercial costing. This consists either of expenses charged off directly to final heads of working expenses or of charges not included in the working expenses of the Railway. General on-cost denotes all on-cost other than Proforma on-cost that is incurred in common with more than one shop or department within a workshop. Shop-on-cost includes all on cost incurred within an accounting unit such as a shop or a department or a section.

The distribution of General Charges on a percentage on labour basis is not above criticism since it postulates in the simplest case that the cheapest and the most inefficient labour needs the least looking after. The best method of on-cost loading in a workshop is admittedly one in which the distribution of 'on-cost' is effected in the ratio of the time i.e, man hours spent on each job and not in the ratio of the money value of such time.

The revision suggested by the late K. C. Srinivasan with regard to the methods of 'on-cost loading' is worth quoting here in full:—

(a) We shall have a Shop on-cost Account corresponding to the present standing work order, for each shop. To this will be debited the actual charges on account of labour and material on account of the general work done in the shop that cannot be allocated to any particular work order. The wages of shop staff such as foreman, chargeman etc., will also be debited to it, in the first instance and not partly to General Charges as has still now been the practice.

(b) There will be a General Service On-cost Account corresponding to the old standing work orders for yard shop etc., to which will be debited the charges of all "General Service Departments" such as the wages of the yard and despatching staff, the salaries of Time-keepers, Gate Keepers etc., and the contingent expenditure on stables and carriages.

(c) The charges debited to this account will together with the moiety of office on-cost charges that will fall to its share be cleared monthly by distribution to the various shop on-cost accounts in suitable and naturally varying proportions which once fixed have only to be reviewed periodically. A moiety of the cost of the Stores Departments should just be debited initially to the General Service on-cost Account to be finally absorbed in the Shop On-cost account.

(d) Besides these two on-cost accounts, there should be one which may be styled Office On-cost Account to which will be debited the pay of the superior technical staff inclusive of the Works Manager. If it is decided to provide against depreciation of buildings, fire insurance and workmen's insurance, Evening Technical school for apprentices etc., these charges will also be first debited to this account.

The substance of the above recommendations made as early as in 1924 has been gradually incorporated into the Indian Railway Mechanical Code. The suggested 'Office On-cost' has been provided for in the so-called 'Proforma' On-cost budget which annually estimates charges attributable to:—

1. Supervision 2. Provident Fund Contribution and Gratuity Payable to workshop staff 3. Repairs and maintenance 4. Interest and Depreciation.

The percentages of total Proforma On-cost under the four heads to the total labour of the whole workshop are then worked out. These percentages vary from workshop to workshop and from year to year, owing principally to alterations in the total Capital Outlay, the variation in the quantum of the total labour in the shops and any changes in the rates of interest charges to be applied. The percentages of Pro forma On-cost as worked out above for each workshop will be brought into use whenever it is found necessary to include one or all of these items of On-cost in the cost of work e.g., when work is undertaken for private parties, other departments of Government or on Capital Account.

The structure of on-cost loading as well as other details of costing, as envisaged in the Indian Railway Code for the Mechanical Department, still leaves considerable room for improvement as is, to some extent, apparent from the remarkable changes that have been introduced in the classification and booking of overheads at the Chittaranjan Locomotive Works. Space does not permit a more detailed analysis of the latter than a bare mention of the four classes of overheads, Factory, Administrative, Township and Stores, after the four Spending

Departments of the Chittaranjan Locomotive Works.

Here it is pertinent to note that the so-called factory overheads consist not only of indirect labour and stores of the Production Shops but even proportionate share of the different service shops as well including Depreciation on building, machinery and plant etc. The considerations regulating the provision of Depreciation have undergone in recent years a decided change of emphasis in even the most orthodox business circles, which calls for a similar change of outlook in Government Factory Organisation as well.

It is, however, symptomatic of a general recognition of this and other allied aspects of cost accounting that, on the Railways, an Officer on Special Duty of the rank of a FA & CAO has been appointed by the Railway Board to recommend a system of cost accounting more in tune with present day conditions in the Indian Railway Workshops. His recommendations and the eventual decisions of the Railway Board thereon would be one of those things the Railway Accounting Circle would look forward to with something more than mere academic interest.

Eastern Ry. Magazine.

Dr. Appleby's Report

A SUMMARY OF THE REPORT

In his second Report on the Administrative System of India placed before the two Houses of the Parliament on the 13th of Aug. 1956, Dr. Paul H. Appleby, American Expert on Public Administration (Consultant on Public Administration to the Ford Foundation) stated, among other things that there is no lack of idealism or great vision in India or its Government, but far too much of dynamism and imagination characterising the setting of objectives smothered in procedures dominated by small thinking".

"Perhaps, nowhere else have so many systematic barriers been erected to prevent the accomplishment of that which it has been determined should be done" .....Far too many proposed actions are reviewed and the review is far too often in an "useless and frustrating fashion".

Dr. Appleby remarks: "by a curious proliferation of conceptions of Parliamentary responsibility and Cabinet responsibility and by reliance on excessive procedures of cross-reference, there has been built an extraordinary evasion of individual responsibility and a system whereby everybody is responsible for everything before anything is done".

Dr. Appleby's criticisms are also directed against the "exaggerated importance" given to the functions of the Comptroller and Auditor General and Parliament's "negative influence" on administration.

His suggestions for reform of the Administration emphasize the need for a reorientation of the present practices of review from a preponderantly "negative concern for precedent and rupee-pinching" to a positive one of expeditious action in pursuit of agreed-upon objections.

Dr. Appleby says that great achievements in recent years have been made beyond the capacity of the administrative system.

"By working key personnel very excessive hours, by giving special attention to a very disproportionate number of transactions, by stubborn persistence of programmatic officials in the face of frustration, great results have been

achieved. There is an early limit, however, to what may be done in this fashion. It puts too much reliance on a very small number of individuals, where for a much greater achievement reliance must be on a greatly improved organisational performance of systematic character".

In regard to the process of review by the Finance Ministry, Dr. Appleby observes that in reality a question raised by an assistant has the effect of being in a good many instances a "disapproval" by the Ministry of Finance. Similarly, the withholding of approval at each successively higher level is actual and effective disapproval in most instances, and the failure of the Minister of Finance to approve is actually a disapproval in all instances when the Ministry making the original proposal is unwilling to burden Cabinet with the dispute. Even when approval is secured at any of the intermediate levels, the earlier and lower-level questions and withholding of approval were decisions to delay action. Very often delay is highly wasteful, retards achievement of Plan objectives and is particularly tragic when it is based only on trivialities or downright ignorance.

In his appraisal of the functions of the Comptroller and Auditor General of India, Dr. Appleby has expressed the view that the function of auditing is a strictly negative one.

"The Comptroller and Auditor General's function is not really a very important one. Auditors do not know and cannot be expected to know very much about good administration. Their prestige is highest with others who do not know much about administration. What auditors know is auditing—which is not administration. It is a necessary but highly pedestrian function with a narrow perspective and very limited usefulness. Any Deputy Secretary knows vastly more about significant problems in his Ministry than the entire staff of the Comptroller and Auditor General can discover by auditing."

Dr. Appleby finds fault with Members of Parliament for greatly exaggerating the importance of the function of the Comptroller and Auditor General and paying far too much attention to his reports. "So doing, Parliament increases the timidity of public servants at all levels, making them unwilling to take responsibility for decisions, forcing decisions to be made by a slow and cumbersome process of reference and conference in which everybody finally shares dimly in the making of every decision, not enough is got done and what gets done is done too slowly"

Dr. Appleby asks, what special competence for appraising objectives and appraising administrative performance in general has the Comptroller and Auditor General, what is the Cabinet for, what is the Prime Minister for, what are the individual Ministers for, what is a Secretariat for, and what is a bureaucracy for?

"Parliament is surely at fault in this. It has a greatly exaggerated notion of the importance of auditing to Parliamentary responsibility, and so has failed to define the functions of the Comptroller and Auditor General as the Constitution contemplated it would do. Into the vacuum thus left, the Auditor has moved.

"Beyond the legal definition confining his whole function, however, the Comptroller and Auditor General can make his function most useful by confining himself further. Too many of his reports are mere substitutions of hindsight for the kind of judgment possible and necessary and proper at the time of action. Too many merely raise questions that are really questions of differences in judgment."

Dr. Appleby discusses at length the Parliamentary Control and asserts as his opinion that it should operate only on a high level delegating its powers in detail to Ministers, Secretaries etc., and having only supervisory function thereon.

Among the other suggestions for administrative reform made by Dr. Appleby are:

1. development of Intra-Ministerial financial competence in the programme agencies.
2. transfer of the accounting functions to the Ministries under the general direction of Finance.
3. limitation of the role of the Comptroller and Auditor General.
4. improvement in personnel recruitment and arrangement and
5. and elevation of the approach of Parliamentarians to a more general and positive appraisal of administration.

Dr. Appleby has also suggested that an official of high stature should be designated in the Cabinet Secretariat as Programme Expediter or Plan Expediter, given strong cabinet support and provided with sufficient staff of maturity and status "to enable him to serve as umpire, trouble-shooter, bottle-neck breaker, procedure reformer and structural adviser". He wants to designate in the Ministry of Finance another Special Aide to the Expenditure Secretary, another Official of stature whose function would be to accelerate decision-making in the Ministry.

Dr. Appleby further states that the establishment of too many separate managements for State Enterprises are no good and therefore warns against over-expansion in Government at all levels, where they are responsible for state-enterprises. He instances his remarks with grouping the fertilizer organisation, steel plant organisation and labour welfare activities, etc.

CRITICISMS

This report has called for a lot of criticism in various directions from responsible and authoritative sources.

Mr. A. K. Chanda, Comptroller and Auditor General of India stated that the observations made by the Expert were obviously coloured. While withholding detailed remarks on the Report, especially in regard to the function of the Comptroller and Auditor General, he commented upon the main thesis of the Expert that "Audit saps initiative". He continued: "I notice that he has not limited his observations merely to Audit arrangements which he considers suitable for Government's industrial and Commercial organisations, but also questioned and criticised the Comptroller and Auditor General's responsibilities over the general field of financial administration. The Expert's attitude of mind that audit is a highly pedestrian function with narrow perspective and very limited usefulness must have obviously coloured his observations on the Indian Audit Organisation. This must have arisen for lack of detailed examination and study of the structure relevant, procedural, technical and other rules and regulations of the audit Department, particularly when he had no discussions with those in charge of the organisation.

Regarding Dr. Appleby's observation that the functions of the Comptroller and Auditor-General in India is in a large measure an inheritance from colonial rule, Mr. Chanda said "I do not know the historical basis for such an observation. I do not know any colonial system which had or has an analogous post, independent of the executive with freedom to criticise administrative lapses. The conception of such a post runs counter to that of a colonial or autocratic system. Mr. Chanda pointed out that in a democratic form of Government, Auditor-General's functions were so defined as to secure public accountability of the administration. Even in the U.S.A., the Comptroller General's Audit covered banking and insurance institutions and other corporations in which the Government had any financial interest even when it was not a majority. The U. S. Comptroller General had also been given the power to issue surcharges

against Corporations and individual officers to effect recovery of expenditure which in his opinion was illegal. Mr. Chanda, therefore, doubts whether Dr. Appleby was conversant with the statutes of his own country. Mr. Chanda said that the powers of the Auditor-General in the U. K. were not also different from the present powers of his counterparts in India, except that they were more comprehensively defined. The Audit of the U. K. Comptroller General extended beyond th formality of expenditure to an examin tion of its wisdom, faithfulness an economy.

Criticisms were also levelled agains the Report by Mr. K V. Iyer, C.A.A Ex. M.S.M. Railway, Sri S. A. Vaneswa Retd. Accountant General, Madras Gov ernment, Mr. V. K. Subramanyam, I.A & A. S., (Retd) and others. These wi be dealt with in the subsequent issues o this Journal.

Tender Committees

(Continued from page 112, July '56 issue)

Tender Committees are to be constituted by the authority competent to let the contract. Thus, if the tenders are for a work cost exceeding Rs. 10 lakhs, the Tender Committee should, strictly speaking, be constituted by the Railway Board who are the competent authority to approve contracts of over Rs. 10 lakhs. In actual practice, however, the tenders in such cases may be considered by a Committee of Heads of Departments' level (at least the Chief Engineer or the Engineer-in-Chief and the F.A. & C.A.O.) and the recommendations submitted to the Railway Board through the General Manager for orders. In other cases, either the General Manager or the Head of Department or Divisional Superintendent, as the case may be, may constitute the Tender Committee in each case, *i.e.*, may nominate the members for the Committee. It is, of course, undesirable that the accepting authority should himself be one of the Members of the Tender Committee, for it would, in principle, undermine the purpose of independent and objective recommendaions. The question now arises as to how many members should constitute a Tender Committee. This naturally would depend upon the circumstances and technical features of each case, but, broadly speaking, the Committee should consist of at least two members, one fron the department which has invited th tenders and the other from the Financ Branch as representing F.A. & C.A.O It is usual, however, to lay down tha there should be three members for suc Committees, so that apart from the tw members (one from the concerned depart ment and the other from Finance), third member from a different depart ment may be available for objective dis cussion and formulation of recommenda tions keeping in view the interests of th department concerned as also the view of Finance where these happen to vary. Thus, for instance, take the case of a work of an operating improvement such as provision of a loop line or a siding at a station. The Engineering representative on the Tender Committee, in his understandable anxiety to see that the sanctioned works on his division are quickly executed, may consider that a rate as quoted may be accepted, although it is high, on the ground that the time limit for completion of the work, as given by the tenderer, is very satisfactory. The representative of Finance may say that, in view of the high rate, fresh tender should be called for, to secure more favourable rates. If there is a third Member, say belonging to the Operating Department, it is possible that he might weigh the cost of the work with the attendant benefits on the provision of the loop or siding at the particular station, and justifiably come to the conclusion that the high cost is not warranted; subsequent to the sanction to the estimate, the traffic at the station might have fallen, or the particular season is over and there is no urgency for the loop. The Engineer-member, on being apprised of these circumstances, would not press for the acceptance of the rate.

In certain cases, such as purchase of stores in the open market, it would be an advantage if a member of the particular department for which the stores are to be purchased, is also associated with the Tender Committee either as an expert consultant or as a regular member of the Committee itself. One advantage is that the consuming department will have the opportunity of scrutinising the specifications, alternative or substitute offers, rates, etc., from all aspects affecting the department.

The status of the members of the Tender Committee would, of course, vary with the value of the contract, but it is a good practice that they should at least be Senior Scale Officers. For contracts involving over Rs. 1 lakh, up to, say 10 lakhs (or 5 lakhs), the level should be raised to Junior Administrative. This should be only a general rule and not totally inflexible. Depending upon the exigencies of the situation, the importance of the tenders, and other factors such as freedom from complexities, etc., an officer of a lower status may, in individual cases, be nominated, but not lower than Senior Scale. So far as Finance is concerned, it may not always be possible to spare an Officer equal in rank to the other members of the tender committee; in such cases, an Asst. Officer from Finance or Accounts may be nominated but if the value of the contract is Rs. 1 lakh or over, or if the tenders present any complexities, an officer of higher status should reasonably be nominated. It is sometimes the practice that where an officer of lower status is nominated, the recommendations are subject to review by the F.A. & C.A.O., or his Deputy, before they are sent to the accepting authority, if the amount involved is over Rs. 1 lakh.

The next point that may be considered is what are the details to be looked into by the Tender Committee. The tabulated statement of rates is, of course, available, and the usual scrutiny of the original tenders should be made to see whether they are all right, although this aspect would have been verified by the officers entrusted with the opening of the tenders but where the opening and consideration of the tenders are both done at the same time by the Tender Committee, the scrutiny of the original tenders should be done by the Committee with great care. If there are special conditions put in by the tenderers, these should be prominently noted in the tabulated statement and considered. For instance, a price fluctuation clause, a wage escalator clause, etc., may be insisted on by tenderers, as in the case of supply and fabrication of steel work. A free ballast train service for materials, may be asked for by another tenderer. A third tenderer may have stated that he will not accept certain standard or special conditions of tender, *e.g.*, arbitration, time limit, etc. All these, though they may not occur in the vast majority of the cases, must where they occur, be carefully weighed on a comparative basis in the consideration of the tenders.

Even where it is a simple case where the first reaction is to recommend the acceptance of the lowest tender, consideration will have to be bestowed on whether such lowest tender itself is reasonable and not unduly high; this can be judged by reference to the past rates, prevailing market rates, recent tenders for similar work, rates provided in the sanctioned estimate, etc. In some cases, it may even be necessary to work out rates specially for the several items to see if the rates are reasonable. In

transhipment contracts, it may even be necessary and useful to depute a subordinate, or officer to engage labour departmentally and by a proper time-study find out what rate would be reasonable, of course after taking into account the variations due to the contractor being able to pay lower wages etc. The tenderers should not have reason to think that the Railway is entirely at their mercy and by forming a ring among themselves, they can force the Railway to accept any high rates they quote. While it is true that the law of competition would work and the rates on tenders may come down to reasonable levels, the formation of rings particularly, when they are given to understand that the particular work is very urgently required by the Railway, cannot be ruled out.

(*To be continued*)

An Important Court Decision

In an appeal preferred by a Merchant in George Town, Madras, the High Court allowed a claim against the Union Government, owning the ex-M.S.M. Railway, for damages consequent on a breach of contract.

The Plaintiff, in pursuance of an invitation of the M. & S. M. Railway for tenders for the supply of Jaggery to the Railway Grainshops, submitted a tender on the 27th Jan. 1948, offering to supply fourteen thousand imperial maunds of jaggery at Rs. 11-4-0 per maund. The Defendant Railway addressed its Dy. General Manager on the 29th Jan. 1948, accepting the tender and also the sum of Rs. 7,900/- paid by the Plaintiff as security. An order was accordingly placed by the Dy. General Manager on the 16th February 1948 for the supply of the entire quantity to be delivered in four instalments on various dates. The first instalment of about 3500 maunds was duly supplied to and accepted by the Defendant Railway. On the 8th March 1948, the Dy. General Manager, wrote to the Plaintiff to treat the balance outstanding order as cancelled and the contract closed. The Plaintiff however, protested stating that he had already invested more than a lakh of rupees to perform the contract and that he was ready and willing to supply the goods as per the terms of the contract. The Defendant Railway, however, stood firm on a clause provided in the Tender that the Administration reserved the right to cancel the contract without calling upon the outstanding and the unexpired portions of the contract. The Plaintiff, thereupon, filed a suit alleging that the clause was null and void, entirely repugnant to the existence of a valid contract between the parties and that it should not be invoked unless there were sufficient valid reasons therefor. The claim preferred for breach of contract was to the tune of over Rs. 34000/-. The Judge in the Lower Court held that the clause in question was valid and enforceable without assigning any reasons and that it was not repugnant to the other terms of the contract. The defendents Counsel argued that it would nullify the contract and therefore was strictly repugnant. Their Lordships, however, held that the clause was void and not enforceable and allowed the appeal and at the same time remanded the case to the Trial Court for fixing the quantum of damages.

The above decision raises a very important issue that a unilateral advantage cannot be sought for by the Railway, particularly when it is likely to nullify the entire contract. It would, therefore, seem necessary for the authorities to review all standard contracts and find out and remove any clause of such a nature as will ultimately lead to litigation at later stages.

Subjects of Moment

I

Changes in Classification

Para 12 of the 23rd Report of the Estimates Committee on the Railway Budget for 1956-57 is as under:

"12. The Budget Estimates for 1956-57 for 'Administration' show a rise of 9.89 crores over the figure for 1951-52 constituting an increase of over 40%. This demand deals with the expenditure on the cost of office and subordinate supervising staff of the General Management, Civil Engineering, Mechanical, Electrical, Traffic, Signal and Tele-Communication, Accounts, Cash and Pay and Stores Departments and the Railway Security Force, the cost of Police reimbursed to State Governments and a portion of the cost of the Medical Department. This demand includes the cost of Supervisory Staff of Workshops, running, sheds and carriage and wagon depots which strictly speaking, are not administrative charges as ordinarily understood, but are connected more with 'Repairs and Maintenance' or "Operation". Figures excluding this element have been stated to be not available with the Railway Board. To some extent, therefore, the increase under this is possibly due to the increase in the level of traffic and repairs. Also in recent years, there has been a shift of expenditure from Demand No. 9 'Loss on Grainshops' to 'Cash Demands allowances' accounted for under 'Administration' and other Demands. Similarly the expenditure on Signal and Tele-Communication Department was segregated from the current year and this involves a certain element of transfer from other heads and from other demands. However, in view of the steep rise of expenditure under the demand head 'Administration', the Committee feel that there should be a proper analysis of the increase in expenditure under this head to see how far it is attributable to the various reasons mentioned above. The economics of working a commercial concern require due notice to be taken of such trends and the rise in the expenses on administration should be controlled by careful means, especially, by ensuring greater efficiency. The Committee also feel that it would be advantageous if there is a more appropriate classification under this demand and charges that are purely administrative are segregated from those that directly belong to workshops, depots etc."

The Railway Board have recently decided to implement the Estimate Committee's recommendations and they have sanctioned the following changes with effect from the Accounts for the year 1957-58. Accordingly, the existing heads of account under Demand No. 4 would be split up under Demands Nos. 4, 5 and or 6, as shown below so that Demand No. 4 would represent expenditure on Administrative and Executive Offices only. The Board have further decided that so far as current year's transactions are concerned, allocation registers should be maintained in the manner hitherto followed but expenditure allocable to Demands Nos. 5 and 6 out of the expenditure shown under Demand No. 4, with effect from 57-58 as previously referred to, should be collected separately in a manuscript Register under the revised classifications in order to furnish reliable data for the preparation of Budget Estimates for 1957-58.

The expenditure on A1121, A1122, A1123. etc. should be transferred from Demand No. 4 to Demand No 5. as under:

Abstract "A": A2001, A2002, A2003, A2004, A2005, A2011, A2012, A2021, A2022, A2031, A2041, A2042, A2601, and A2602.

In the case of Abstrcts, B, C, D, E, F and J, the items relating to subordinate supervising staff etc. hitherto booked under Demand No. 4, should be transferred to Demand No. 5 or Demand No. 6 as under:

Demand No. 5.

B2001, B2002, B2003, B2011, B2401, B2402, B2021, B2031, and B 2041.

Demand No. 6.

B3001, B3002, B3003, B3011, B3703 B3704, B3021, B3031 and B3041.

Note: Workshop expenditure would remain under Demand No. 5 and running staff expenditure would go to Demand No. 6. In the case of Abstract C also, workshop expenditure and running staff expenditure would appear respectively under Demand Nos. 5 and 6

Demand No. 5.

C2001, C2002, C2011, C2701, C2702, C2021, C2031, C2041.

Demand No. 6.

C3001, C3002, C3011, C3701, C3702, C3021, C3031, C3041.

The same distinction between workshops and Running Expenditure continues under Abstract D also.

Demand No. 5.

D2001, D2002, D2011, D2501, D2502, D2021, D2031, D2041.

Demand No. 6.

D3001, D3002, D3011, D3903-A, D3904-A, D3021, D3031 and D3041.

In the case of Abstract E, the following heads are transferred from Demand No. 4 to Demand No. 6.

E3906, E3907, E3908, E3909, E3905.

These refer to expenditure on Office and Booking Staff other than those of administrative and executive Offices. In the case of Abstract H, distinction between Workshops Expenditure and Running Staff expenditure is continued, those of the former being transferred to Demand No 5 and those of the latter to Demand No. 6.

Demand No. 5

J2001, J2002, J2003, J2004, J2011, J2901, J2902, J2021, J2031, J2041.

Demand No. 6

J3001, J3002, J3011, J3201, J3202, J3021, J3031 and J 3041.

* * *

Second List of Corrections to the Railway Accounts Code—Part II (Reprint 1951)

Paras 14-AII to 22-AII

(14) 2144–A (II)

After Item (1) of this Paragraph, ADD the following:—

"the check being limited to 10 per cent of the telegrams which come under 10 per cent check, vide paragraph 2145-A, in the case of local forwarded telegrams."

In the first line of Sub-paragraph (4) of this paragraph *substitute* "the sender's foil has" for the words "both the foils have."

(15) 2206-A (II)

Substitute the following for second sentence of this paragraph:—

"The amount of special credit taken by the stations in their Balance Sheets in respect of fodder traffic (Vide paragraph 1387-T) should agree with the amounts shown against the stations in this register."

(16) 2247–A (II)

(17) 2248–A (II)

The substitution of a new Para for 2247 and the introduction of a new Para 2248 have both been dealt with at pages 22 and 23 of Volume I "Railway Accountant."

Regarding Sub-para (6) of Para 2248, a correction has been made subsequently and this has been published at Page 157 of "Railway Accountant" Volume II.

In view of the above, details are not reproduced here.

(18) 2350-A (II)

Add the following as a Sub-paragraph under this Paragraph :—

"Procedure as mentioned above should be generally followed. Any deviation in favour of isolated firms may be authorised by the General Manager in consultation with F.A. & C.A.O.

(19) 2542 A (II)

Delete the words "Unpaid wages" occurring in line 5 of this Paragraph.

(20) 2552-A (II)

Substitute 'Direct' for the word 'District' occurring in line 1 of this Paragraph.

(21) 2553-A (II)

In Correction Slip No. 12-A II READ Rule "2553-A" for "2543-A".

(22) 2902-A (II)

For the words 'in any case' occurring at the end of the first sentence of this Paragraph, *substitute* the following :—

"in the case of large stations and six months in the case of small stations".

* * *

Re: Allocation of Carriage Charges on ballast for maintenance purposes

The carriage charges on ballast required for maintenance purposes should be allocated to Revenue-A2501 Carriage of Revenue Stores, and not to A2113-Ballast.

(R.B. No. 54-AC II 3/5 dated 20-8-56).

Personnel

Mr. Y. P. Kulkarni, Officiating joint Director (Establishment), Ry. Board is confirmed in that appointment with effect from 3rd July '56.

Mr. J. B. Rao, Secretary, Railway Rates Tribunal, Madras, is transferred as Joint Director, Traffic (Transportation), Ry. Board, with effect from July 6, 1956.

Mr. A. P. Sarkar, Dy. Chief Accounts Officer, Eastern Railway, to continue for a further year.

Mr. V. P. Sahney, Dy. C.O.P.S, Northern Railway, appointed as Joint Director, Establishment, Railway Board.

Mr. J. Rama Rao, Dy. F.A. & C.A.O., ICF, Perambur, transferred as Dy. F.A. & C.A.O., Chittaranjan, in place of Mr. Bhandari.

Mr. S. Rajagopalan, Dy. C.O.P.S., Southern Railway, has been placed on special duty to look after the catering arrangement by this Railway in the Dining Car attached to the G.T. Express to and from Delhi.

Mr. K. J. Chandy, Dy. General Manager, Amenities and Planning, has been transferred to the Operating Department as Dy. C.O.P.S. in place of Mr. Rajagopalan.

Mr. M.N. Swaminathan, Jr. Accounts Officer, Southern Railway, Mysore has been transferred as Divisional Accounts Officer, Madurai.

Mr. N. K. Srinivasan, B. A., B. Com., A.I.C.W.A., Sr. Accountant, Railways, TELCO Tatanagar, has been promoted to officiate as Asst. Accounts Officer, Chittaranjan Loco Works.

Mr. S. Parthasarathy Iyengar, Commissioner of Police, Madras, has been appointed as the Chief Security Officer, Northern Railway, with effect from September, 1956.

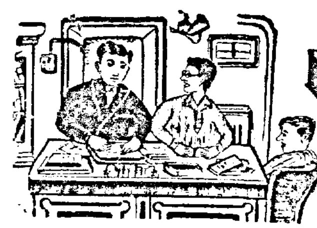
Mr. V. R. Ganesan, Officiating S.A.O., (Construction), Central Railway, is posted as Senior Accounts Officer on special duty from 30-6-56. Central Railway.

Mr. S. Ramachandran, Officiating A.A.O. C.Rly., posted as Divisional Accounts Officer, Jabalpur with effect from 1-7-56.

Mr. J. A. de Souza, Superintendent Accounts Branch, Central Railway, is promoted as Accounts Officer, (Stores and Workshops) Jhansi.

Mr. Rup Chand Sehgal, is transferred as Workshop Accounts Officer, Western Railway Ajmer.

Mr. T. S. Subramanian, Dy. C.A.O. (Finance), Western Railway, is transferred in the same capacity to Northern Railway Delhi.



NEWS, NOTES AND COMMENTS

Call for better methods of work

In his concluding speech at the General Managers' Conference at New Delhi, on the 9th August 1956, Sri Lal Bahadur Shastry, Railway Minister, called upon Railwaymen in India to begin thinking on fresh lines and evolve better methods of work which would achieve the twin objects of improved operational efficiency and economy in expenditure. In the context of the 2nd Five Year Plan, he wanted Railway Officers at all levels to develop policies of leadership and independent judgment. He also expected the rank and files of railwaymen to display discipline of the highest order and to help towards greater productive effort. The Railways, he said, must in dealing with their staff, combine courtesy with firmness and promptly deal with their legitimate grievance. He also called for a determined drive to raise the punctuality standards of passenger trains.

The Dy. Railway Minister, Sri O. V. Alagesan, said that the Railways must develop a genius for improvisation to secure the maximum immediate results from existing assets, pending the procurement of more modern equipment through additional investment. With the help of better planning, he said, the Railways would obtain more satisfactory resuls.

The subjects that were discussed in detail at the conference, included :—

Operational position on each railway

Targets of higher performance for the next busy season, from November 1956 to March 1957

Technical suggestions to speed up goods operations in various directions and improving the present carrying capacity through better methods of work.

Improving standards of passenger transportation

Feasibility reconditioning old coaches to increase passenger accommodation.

* * *

Conference of Chief Operating Superintendents of Indian Railways with the Railway Board

A four-day Conference ended at Delhi on the 24th August 1956. Decisions on a series of far-reaching measures designed to tackle the problem of intensive utilisation of railway rolling-stock on an emergency basis were taken with a view to closing to the largest practical extent the present uncovered gap between freight traffic likely to develop during the Second Plan Period and the resources available for carrying it. It was emphasised that new capital expenditure should be economised through superior organisational efforts. New and higher targets of performance in regard to wagon loading and wagon and engine usage were also set. Frequent meetings at all levels of railway-men were also urged so that a clear perception of the duties of all staff and their share in the fulfilment of the target may be brought home to them. It was decided to initiate immediately a systematic and persistent campaign to streamline all aspects of operation, particularly in regard to faster loading and release of wagon terminal points, expeditious disposal and proper marshalling of goods trains and punctual running of trains from the terminal yards.

An important decision related to the establishment of a number of "traffic control" areas to maintain constant touch over the telephone with the various points which handled wagons, so that individual wagon movement and specific traffic movement could be closely watched with a view to ensuring better output from the existing yards and wagons.

Tele-communication facilities should be strengthened in accordance with individual requirements. It was further decided that tele-printer services should be introduced between important marshalling yards to convey full particulars of wagons despatched on different trains, thereby facilitating advance planning of further movements and disposal of wagons. The wagon chasing organisation should be strengthened by posting selected senior and experienced personnel and watching their results. Loading Inspectors should be acquainted to introduce scientific loading of wagons particularly in big sheds and transhipment sheds so as to ensure better wagon loading. Additional express goods trains should be introduced and run like scheduled passenger trains providing a minimum of a weekly fast service on all the important trunk routes to enable transport of all essential commodities.

Various measures for ensuring better punctuality of passenger trains were also discussed.

* * *

Manufacture of Rolling Stock

The Hindustan Aircraft (Private) Ltd., has entered into a technical assistance agreement with a West German firm for the manufacture of rolling stock in its factory at Bangalore. The Agreement covers the manufacture of rolling stock of different types including integral coaches.

Under this Agreement, the H. A. L. will get number of its technicians trained at the collaborators' works in Nurenburg in the design & manufacture of integral coaches. The bogies offered for this collaboration are expected to provide excellent riding qualities having been recently improved.

* * *

Import of Rail Cars

Under the Colombo Plan, the Railway Ministry have placed orders on Australia for the import of twenty-four rail-cars.

* * *

Electrification of Railway Line to Villupuram

The Dy. Minister for Railways told a Representative of the Hindu on the 1st September at Madras that the electrification scheme of the Railway line to Villupuram would be completed in about two to three years from now. He stated that the necessary power would be supplied by the Madras Government and that tenders for the purchase of electric locomotives had already been called for.

* * *

Route relay system on the Western Railway

The General Manager of the Western Railway inaugurated the route relay inter locking system at the temporary Churchgate Station, Bombay, on the 1st September 1956. He explained that the chief features of this system are :

it simplifies the system of reception and despatch of the trains ;

it enables all signals and points over the entire route to be set by the operation of a thumb switch ;

there are two switches for the simultaneous up and down movements.

This system was designed by the signal Branch of the Western Railway and the entire work of installation of this system was done departmentally, within a short period of two months and at an estimated cost of one lakh of rupees.

This system would be installed in the new permanent Churchgate Station also but with a larger control cabin. The Control panel will show, in addition to the information in the control cabin, the occupation of the lines.

The provision of route-relay inter locking system will enable simultaneous movement of incoming and outgoing trains and thus enable the trains to run with greater frequency.

* * *

Pay Scales of Railway Employees

It is learnt that in accordance with the recent announcement for the employees of Central Ministries, the Railway employees in the categories of Office Clerks, Typists, Accounts Clerks Class II, Ticket Collectors, Distributors or Store Van Clerks or Store Delivery Clerks, Dispensers and Compounders, Train Clerks, skilled-artisans and other categories of clerical and non-clerical and artisans personnel will have their existing pay scales revised as under, with effect from the 1st August 1956:

From

55-3-85-EB-4-125-5-130

55-3-85-4-93-EB-4-125-5-130

To

60-3-81-EB-4-125-5-130

60-3-81-4-93-EB-4-125-5-130

In the case of existing staff *ad hoc* increase of Rs. 5/- over the pay drawn by them prior to 1st Aug. 1956 will be sanctioned except where the maximum scale had been already reached.

Normal dates of increment in the old scale will continue.

* * *

Machinery for I.C.F.

Orders aggregating to about Rs. 10,00,000/- have been placed with Railway Machine Tool Manufacturers in eight European countries so that when these are installed in the I.C.F. at Perambur, the factory may achive its annual target of 350 coaches per year—one year ahead of the originally scheduled date—i.e., in four years instead of five. These machines were inspected on the spot by two senior Railway Officers who recently visited West Germany, U. K., Switzerland, Italy, Czechoslovakia, Poland, Austria and Sweden for the purpose and contracts were finalised on the spot. These negotiations were based on global tenders from nearly 170 firms in fifteen different countries previously received by the Railway Ministry.

* * *

Informal discussion with the P.R.O., S.Ry.

The Public Relations Officer, Southern Railway, stated that by the placing on line of nearly 2000 M.G. Wagons in a few months' time under the Technical Co-operation Aid Plan, the bottleneck on the metre gauge would be broken up. He further stated that metre gauge coach shells are also being received from U.K. and Belgium and nearly 270 coaches fully furnished as 3rd Class in the Golden Rock, Hubli and Mysore workshops are running on the line. Another hundred coaches were expected to be complete by December, 1956. Night lights in the interior and embarkation lights on the exterior are special features of the furnishing.

He also stated that air-conditioned coaches are being constructed rapidly and eleven BG & 12 MG coaches are now running on important trains.

Out of the thirty WP fast passenger locos to be supplied by the Canadian Locomotive works under the Colombo Plan, in a knocked down condition, 28 have already been received.

He also referred to the detailed arrangements for catering on long distance through trains by the Southern Railway—both vegetarian and non-vegetarian.

He also disclosed that the first portion of the Quilon-Ernakulam Railway from Ernakulam to Kottayam would be opened for traffic in the first week of October 1956.

He stated further that rice from Tanjore area was being rapidly moved out and that an increase of 20% over that of the previous year had been achieved and that outstanding requisition for wagons at the end of August was only 146 wagons as against 6292 at the end of June 1956.

* * *

Opening of Olavakkot Division on the Southern Railway

The Divisional system of working was introduced at Olavakkot from 24th Aug. 1956. The Division comprises Jalarpet-Mangalore, Salem—Mettur Dam, Erode-Tiruchi Fort, Coimbatore-Mettupalayam-Ooty, Olavakkot-Palghat, Shoranur-Cochin Harbour-Terminus, Shoranur-Nilambur Sections. The transportation, Commercial and Mechanical Branches of the Divisional Office will for sometime to come continue to function at Podanur. Civil Engineering, Signal and Telecommunication, Electrical Engineering and Accounts Branches of the Divisional Office are located at Olavakkot.

Claims for refund of freights and fares and for loss, damage or non-delivery of goods or parcels will continue to be dealt with by the Chief Commercial Superintendents, Madras and Tiruchi, as at present.

* * *

New Division on the Southern Railway

The New Royapuram Division was inaugurated, on the S.Rly. on the 31st August 1955, with Mr. D. B. Patel as the Divisional Superintendent.

* * *

Role of Managers in Business Organisations

The only test which Unilever applies to determine a man's suitability to enter managerial ranks is that of merit. "There is no question of demanding a particular social or educational background". The company provides ample scope for men with the right qualities to climb up from the lowest levels. Care is taken to avoid any emphasis on privileged categories of manager-trainees. The fundamental principle that is adopted for training managers is "training should be tailored to measure, not ready-made off the peg". In other words, training for all categories of managers, starts on the job.

Lord Heyworth, however, makes it clear that the quality of the management will inevitably be reflected in the working results of the business. That is to say, without good managers, it is practically impossible to carry on a business profitably. Speaking about the needs of his company in this regard, he says:

"As the business expands we shall need more managers and the pattern which is unfolding is one in which the proportion of managers in relation to the whole will continue to rise, and this at a time when the competition to secure the services of managers is everywhere increasing. Therefore, we can never let up. We must not expect the universities, schools and the technical colleges to provide the answer unaided. We must continually examine our methods of recruitment and selection. We must take every opportunity to bring on an upgrade of our own people from the lower levels. We must all of us understand the importance of training."

Being on the threshold of an industrial revolution, we in India can derive considerable profit from Unilever's experience in dealing with one of the most important problems of industrial organisation.

* * *

Surveys

A preliminary Engineering and Traffic Survey for a Broad gauge line between Tarapur and Bhavnagar has been sanctioned by the Railway Board. This line covering about 62 miles is expected to reduce the distance covered for the export and import traffic from Ahmedabad and also facilitate movement of salt from Bhavnagar and of coal via Bhavnagar. The new line is expected to relieve the present pressure on the Sabarmati and Viramgam transhipment points, which would consequently be free to provide additional capacity for other ports of the Saurashtra.

* * *

Khadi purchased by the Indian Railways

Indian Railways purchased large-scale quantities of Khadi, including bed-sheets, table cloths, towels, napkins, Dasuthi thick Blue Khadi etc. The total value of the purchases during 1955-56 was nearly 77 lakhs, or over 7½ times that of the previous year:

The value of non-khadi cloth purchased during 55-56 rose to 72·40 lakhs from Rs. 57·02 lakhs for the previous year.

* * *

Ganga Bridge Project

The targets laid down for the Ganga Bridge Project during the first working season from November 1955 to May 1956 were more than fulfilled in spite of heavy handicaps like late-flood, chance-storms etc. If the consignment of steel from abroad reaches India in time, the erection of steel girders for the main spans of the bridge may be commenced in the second working season from November 1956.

* * *

French Team's Report on Indian Railways' Electrification

We have referred, in a previous issue, to a team of French Experts who toured the Indian Railways in connection with the schemes of electrification of the various Indian Railways. Their Report was formally presented to Mr. G. Pande, Chairman, Railway Board, on the 31st August 1956. At this formal ceremony, Sri Pande said that the team had put in very hard work and that the Report would be most valuable in helping the Government of India in coming to final decision on railway electrification.

The team has expressed the opinion that AC 50 cycles traction system would be more proper for the Indian conditions and substantially cheaper than the DC system. It may be remembered that the French Government not only placed the services of this team at the disposal of the Government of India but met the Team's expenses on travel and stay in India.

The decisions of the Railway Board on this Report are expected to be published very shortly.

* * *

Wagon Deficit in India

The United States Government promised to supply India 8,700 goods wagons under the Government of India-United States Technical Co-operation Mission Agreement. The wagon bodies are made in the U.S.A. and the wheels in Japan. 3000 of these wagons for the Southern Railway are being assembled at Madras by Messrs Binnys Engineering Works Private Ltd. in a factory which is about ten months old and whose ultimate capacity is to assemble 10 to 15 wagons a day.

The first formal presentation of the wagon by the United States Technical Co-operation Mission was made recently by the Director of the Binny's Engineering Works. Mr. Winfree, American Consul in Madras, was also present at the function.

* * *

Executive Vs. Finance

That the Executive almost always looks upon Finance as their opponent is a well-known fact not only in the Railways but on other spheres as well, wherever the proposals of the Executive are required to be forwarded to Finance for scrutiny and financial advice. This does not, however, detract from the value of Finance, and there is no doubt that a tax-payer would always insist on a proper financial scrutiny being made on proposals made by the Executive, although he may wish that developmental schemes etc. should be pushed through quickly. It is stated that even Mr. Winston Churchill, while he was in Office as British Prime Minister, was not all love for Finance and that he humourously expressed the view that Finance was an inverted Micawber. Micawber wanted something to turn up while Finance, according to Mr. Churchill, wants everything to be turned *down!*

* * *

Management Accounting

The British Management Accounting Team which visited the United States of America, under the auspices of the Anglo-American Council on Productivity sometime ago defined the term "Management Accounting as follows :—

> "Management accountancy is the presentation of accounting information in such a way as to assist management in the creation of policy, aid in the day-to-day operation of an undertaking."

In a pamphlet issued by the Association of Certified and Corporate Accountants, London, the Technical Research Committee of that Association has expressed the view that the future of accountancy lies less in the development of meticulous systems of recording and verifying past events and more in looking forward and constructing an instrument, whereby management is able to exercise some control over the future.

So far as the Railways are concerned, Finance Branch and the Statistical Branch are doing some part of the functions of Management Accounting, and recently steps have been taken to establish Efficiency Squads on Railways. The full object and purpose of Management Accounting cannot, however, be achieved by these several Organisations. It would be necessary to instal a separate Organisation to deal with the "Management Accounting aspect and the activities of the Railways, both on the individual Railways and also in the Railway Board's Office". To a large extent the Efficiency Bureau attached to the Railway Board may take up the problems, but it would be necessary to equip the Efficiency Bureau with properly qualified accountancy staff of proved ability and initiative, so that the accounting information, that would be required to assist Management in the creation of policy and in the day-to-day operation of the undertaking, may be collected from proper sources, checked up with analogus data obtained from different sources, and dished up in an intelligible manner.

* * *

Alarm Chain Pulling on Railways :

A recent review of the various incidents on all the seven Zonal Railways during 1955 shows that 87 percent of over 43 thousand cases were unjustified and that the prosecutions in these cases could not be lodged in more than 1½% owing to lack of public co-operation. Eastern and North-Eastern Railways alone have accounted for nearly 60% of the total cases. The Western Railway has, on the other hand, got the lowest record of just under one percent. It is Bihar that has contributed mostly to the unauthorised use of these emergency Alarm Chains and it is here also that ticketless travel has been very frequent. The Bihar Government and the Railway Board have therefore, been discussing these matters and a campaign has been sponsored in which students are taking initiative to guard public opinion against the evils of unauthorised Alarm Chain pulling and Ticketless Travelling. Two Temporary additional Railway Magistrates have also been sanctioned for Bihar to deal with such anti-social practice. The North-eastern Railway has also recently blanked off Alarm Chain operators on trains running over certain sections; leaving guards and Drivers sufficient facilities to stop train in an emergency. To educate public

pinion other Railway Administrations ave also launched publicity campaigns.

* * *

"Wagons Work Harder"

In order to increase the availability of 'agons to carry additional traffic during ie Second Five Year Plan Period, the ;ading and unloading times have been ut drastically and as a first measure :ailway Coal Wagons are allowed only)% of the normal free-period of 6 hours e., the Wagons have to be unloaded 'ithin 3 hours. In the case of other :ailway materials, the free-time has een reduced to 5 hours. Regarding the 'ee-time for the public, orders are to sue shortly about the curtailment of 'ee-time.

* * *

New Locos for Indian Railways

447 new locomotives were added iring the last Plan year, bringing the)tal in the first Five Year Plan to 1299 ew locos. As against this 777 steam locos 'ere taken off the line. On the 1st .pril 1956, 30% of the steam locos on the ne were over-aged.

Out of 1299 new locos referred to, 43 'ere diesel locos and seven electric locos.

* * *

Metre Gauge Wagons

Metre gauge wagons in a "knocked own" condition built by a British firm re being received in Madras. 2000 of iese have been allotted for the Southern :ailway, against which 635 have already een assembled by Messrs Binny Engieering Works at Meenambakkam and elivered to the Railway.

* * *

Training School for Railway Security Force

A Training school for Railway Protecion Force was declared open by the)eputy Minister, Mr. O.V. Alagesan at 'iruchi, on the 1st September 1956. .essons are provided in Hindi, Tamil, 'elugu and Canarese. In the course of his opening speech, the Dy. Minister stated "Now that we have obtained 'Swaraj', and become masters of our own country, every citizen should take a vow not to steal Railway and other public property and should not resort to ticketless travel", The function was attended, among others, by the Chief Administrative Officer, Integral Coach Factory, Madras, the General Manager of the Southern Railway, and Mr. Ramachandran, Additional Member, Railway Board.

* * *

Catering on long distance trains

Elsewhere we have reported that a high-level Officer of the rank of a Dy. Chief Operating Superintendent has been appointed on the Southern Railway to look after the railway catering arrangements on the Grand Trunk Express. Obviously, this is due to an interpellation in the Lok Sabha recently. Though it is very good for the Department to be alive to the necessity of rectifying deficiencies in the administration, still it is not absolutely free from doubt whether this particular defect requires the whole-time supervision of such a high level Officer. In fact, there are other defects in the way which can also be taken into consideration simultaneously, particularly the limited accomodation of the Dining Car which is proposed to undertake three different services viz., Vegetarian, North Style, Vegetarian, South Style, and Non-Vegetarian. Even a casual observer would find that the kitchen of the dining car is so small that it cannot undertake the preparation of big menus. As such, the mixing up of vegetarian and non-vegetarion menus in one and the same place in a country where some scrupulous men still exist, seems to be a point well worth consideration. From all aspects, it would be better if the non-vegetarian kitchen is separated from the vegetarian one. In fact the complaint of bad catering by the previous contractor on the Central Railway must have been due to the identical fact of limited space for this variegated menu. It is hoped that the Special Officer and the Railway authorities both locally and at Delhi would bestow due attention to these matters.

* * *

Appendix III-A Examination 1956

Arrangements for the divisionalisation of the various Railways are going on briskly and there has been constant disturbance to work on the railways concerned, particularly the Southern, Central and Western Railways. Process of divisionalisation or distribution of accounts office staff and separation of records are things which affect the concentration on the part of the examinees on their studies. In fact, this process of divisionalisation may also lead to negativing any request for grant of leave for preparing for the examination. In view of these circumstances, we have been approached by many candidates for representing the position to the authorities concerned to postpone the next examination, normally held in the 3rd week of November 1956, to early in January 1957, so that the students may have some little peace of mind to study and prepare themselves better to face their ordeal. Especially in view of the very large failures in the 1955 examination and of the rather rigid scrutiny of the applications for the next examination, those who take the examination are anxious to acquit themselves well and it would certainly be helpful both in their interests and in the interests of the Railway Administrations to afford them opportunities which may be given without trouble. We hope that the Financial Commissioner for Railways will sympathetically consider the circumstances explained above and do the needful in the matter.

* * *

Special Supplement

We enclose with this, as a special supplement, an article written on certain suggestions for economy in Railway repair workshops, by Sri Yash Pal Puri, M. A., J. D., A. C. W. A. of the Railway Board's Office.

The writer obtained the permission of the Railway Board for publication of the article in this Journal and owing to the urgency and importance of this article, the entire article has been published in one instalment. Spare copies of this article are also available for sale, with the Managing Editor, at Re. 0–8–0 per copy, plus ordinary postage of 2 annas per copy, plus registration charges, if necessary.

The Issue for September 1956, including this Supplement, is priced at Rs. 1–4–0 for stray indentors.

* * *

***Viva Voce* Examination for Marginal Candidates**

A somewhat novel recommendation of the Special Committee of the Institute of Chartered Accountants of Scotland, on the examination and training of apprentices for the profession of Chartered Accountants, is that border-line candidates in the final sections of the written examinations should be called for oral examination, the idea apparently being that, if such marginal candidates fare well in the *viva voce* examination, they should be considered to have passed the examination for qualifying as Chartered Accountants.

[*Note* :—The Reader's attention is invited in this connection to our views at page 139 of the "Railway Accountant" for August 1955 suggesting *viva voce* as supplemental to the written test.

Ed., R.A.]

* * *

Rail Accident near Hyderabad

Regarding the very serious Rail Accident which occurred in the early hours of the 2nd Sep. 1956 on the metre gauge of the Central Railway between Jadcherla and Mahbubnagar resulting in heavy loss of life, the Deputy Minister made a Statement in the Lok Sabha on the 3rd Sep. 1956. The Statutory enquiry commenced on the 4th Sep. 1956 on the spot.

Immediate action has been taken by the Railway Minister to appoint a Committee of Engineers to inspect all Railway Bridges on the Central Railway, since many of them are known to have been built nearly three decades ago. The public are feeling anxious about such accidents and would like to have an authoritative assurance that all foreseeable causes are fully considered by the aforesaid Committee, so that accidents, whether on the Central Railway or on other Railways, may not occur due to preventable causes. It is hoped that the enquiry would also tighten up measures regarding constant supervision of lines—particularly during dark nights and monsoon weather.

In his speech before the Lok Sabha on the 5th September, the Railway Minister, Mr. Lal Bahadur Shastri, explained the facts preceding the accident, in which it was pointed out that there was a previous breach at that spot on the 1st August 1956 and that after repairs, caution had been imposed for all trains upto the 21st of August 1956. He also mentioned that during August, the Bridge had been inspected frequently by the Divisional Engineer downwards to the Permanent way Inspectors eighteen times, and that the running on this line had been registered on two occasions by Hallade Track Recorder and found to be satisfactory. He also stated that regular monsoon patrolling had been in force on this section and that two bridge watchmen were keeping a regular watch on the bridge in shifts.

The Statutory Enquiry is reported to have been completed and the Report thereof is expected to reach the Government very shortly. It is hoped that this will throw more light on the accident and the remedial action for the prevention of similar cases in future.

* * *

Finance Minister

Mr. T. T. Krishnamachari became Finance Minister of the Government of India from 1st September, 1956; but he would continue to hold charge of the portfolio of Iron and Steel.

This latter charge is one of heavy spending, and to allow the Finance Minister to continue as a spending Minister also is likely to detract from a healthy controlling influence of the Finance Minister over all spending Departments. The Finance Minister is not only the watch-dog of Government Funds, and as such, distributes the Funds to various Ministries in the Budget, but he has also to keep a constant and vigilant watch over the expenditures incurred by other Ministries. Hence, his healthy influence over one of the heavy spending Departments, (Iron and Steel) is definitely weakened and it would therefore be necessary in the interests of sound finance to review the situation.

* * *

Indigenous Railway Coach

On the 14th of August 1956, the President, Dr. Rajendra Prasad, turned out the first coach from the Integral Coach Factory, with indigenous parts, components and sub-assemblies, completed there. After referring to the thorough assistance and collaboration of the Swiss and Indian workers, the President referred to the amenities provided for the workers. He stressed the need for building factories not only quickly but also cheaply, and said: "I am glad to notice in this factory, that we have not confined ourselves to any one country or any one firm for the supply of the various machines used here. They come from different countries and they have been taken, having in view their efficiency and cost. If we depend on one country or firm for everything we need, we may have to wait very much longer; and perhaps because prices vary from country to country, we may also have to pay higher prices." The President wanted every worker to remember that he was doing a great work for the reconstruction of the country and made an impassioned plea for promoting good relations among the workers with a view to avoid loss resulting from the cessation and interruption of work.

Earlier, Mr. Sadagopan, the Chief Administrative Officer, I. C. F., stated that 1120 component parts of the coach body shell had already been manufactured in the factory itself ; that 47 more are also being attempted to be manufactured locally leaving only two more to be still imported.

* * *

Pay Bill Frauds

T. S. Krishnamurthi, a former employee of the Southern Railway, was committed by the Second Presidency Magistrate, Madras on August 16, to take his trial at the Sessions for the offences of forging, cheating the Railway of a sum of Rs. 64,185-2-0 and criminal conspiracy. C. Kanniah, was also committed to the Sessions for the offence of criminal conspiracy.

The charge against the accused was that between May 22, 1952, and May 18, 1955 they entered into a criminal conspiracy to fabricate travelling allowance bills and supplementary bills relating to the personnel of the Chief Engineer's Office of the Southern Railway and after fabricating such bills, presented them at the Pay Office and obtained an aggregate sum of Rs. 64,185-2-0. It was further stated that the first accused, who was working as a senior clerk in charge of the Bill Section, Headquarters Personnel Branch, Southern Railway, falsified accounts and the second accused, who was working as a peon in the same office, was a party to the conspiracy.

* * *

Madras Institute of Management

An Institute of Management has been formed for the promotion and development of sound management in business and industry by encouraging appreciation and application of "good management, philosophy and practice" in pursuance of the recommendations of the Planning Sub-Committees. This Institute will have to play an important role in the successful achievement of the targets laid down in the Second Five Year Plan. One such Institute for Madras is to be inaugurated this month. Among the Members of the Management Committee, headed by Dr. A. L. Mudaliar, is Mr. K. Sadagopan, the Chief Administrative Officer of the Integral Coach Factory.

* * *

Improvements to Railway Running Rooms

Running rooms are provided at Stations on the Indian Railway system for the benefit of running staff like Guards, Engine Crew, etc., who have to be constantly away from their Headquarters and rest at outstations before undertaking return journeys. The question of improvement to such running rooms throughout the country and the formulation of standard designs, equipments etc. for them are being investigated by a Committee of four Officers set up by the Railway Board under the Chairmanship of the Director, Traffic (Transportation). The Members of the Committee are already on a tour and will visit all zonal Railways before submitting their Report.

* * *

Chief Engineers' Conference

A two-day meeting of Railway Chief Engineers and Engineers in Chief (Construction) with the Railway Board was held at Delhi on the 5th and 6th Sep. 1956, at which various issues connected with the execution of works on Railways during the Second Five Year Plan were discussed. Measures to secure adequate numbers of technical staff in time to meet the increase in the quantum of work progress were discussed.

The action initiated for the procurement of basic materials like steel, cement and other materials from indigenous and foreign sources was also considered in

detail ; similarly several technical issues like welding of rails, speeds over turnouts, use of imported steel to specifications other than the Indian Railways or the British Standard specifications were also discussed. The punctual completion of the works included in the 1956-'57 Works Programme was emphasised by the Chairman of the Railway Board.

* * *

Assam Rail Link Stabilisation Committee

The Committee held its 3rd meeting at Delhi on the 5th September. After discussing the information so far obtained not only from the North Eastern Railway, but also from actual inspections of the various places, a questionnaire was issued to individuals and bodies interested in the stabilisation of the Assam Rail Link route, inviting their views and suggestions.

* * *

Railway Officers to be trained in Japan

The Railway Board have decided to send the following two Railway Officers to Japan for a six months training in Steel—Casting and for Technical Co-operation Scheme under the Colombo Plan.

Mr. B. L. Sehgal, Assistant Works Manager, Production, N. E. Railway.

Mr. T. S. Rangaswami, Officiating A.M.E., Southern Railway.

* * *

Concession Return Tickets

It is understood that Concessional Return Tickets at one-and-three quarter single journey fares will be issued this year for first, second and third classes on the occasion of Dasara, Diwali and Christmas Holidays by all Indian Railways. These tickets will be available for 14 days for completion of the return journey. They will be issued from 1 to 14th October, 30th October to 4th November, and 15th December to 5th January respectively. The stations should be more than 150 miles apart ; break of journey permitted only on outward journey.

* * *

Dr. Appleby Report

The Lok Sabha discussed the Report of Dr. Appleby on the 10th September for 2 hours, and postponed detailed discussion to a future Session.

* * *

Passenger Card Tickets

The Public Relations Officer, Southern Railway, Madras, reports that owing to non-availability of sufficient quantity of card board of the required quality, it has not been possible for the Railway to print and supply card tickets to all stations in time and that therefore paper tickets are being used in many places as an emergency arrangement. He states further that every effort is being made to procure adequate supplies of Card Board for restoring the position to normal.

(Continued from page 197)

Anti-Corruption Drive on Railways

Mr. Lal Bahadur Shastri, Railway Minister, stated that Government had accepted almost all the recommendations of the Anti-Corruption Railway Enquiry Committee and that these recommendations were now being implemented.

* * *

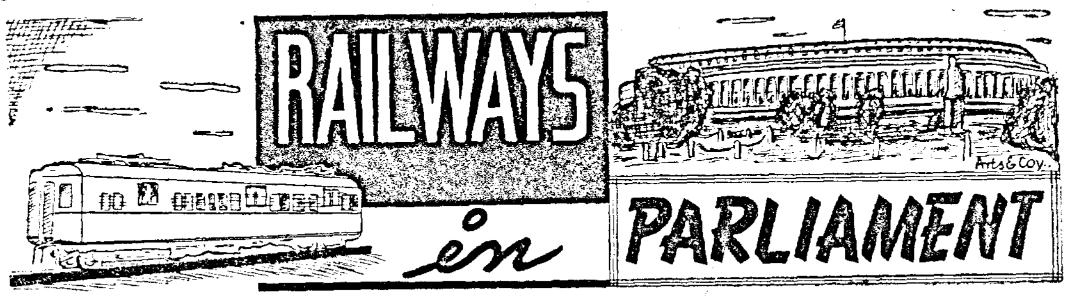
Estimates Committee

Mr. Shah Nawaz Khan, Parliamentary Secretary to the Railway Minister, said that Government had initiated action on all the recommendations contained in the 33rd report of the Estimates Committee, but that action had been finalised only in the case of five items.

* * *

Implementing Recommendations of Important Committees

Mr. Shastri stated that the Efficiency Bureau of the Railway Administration had been asked to go into the recommendations of all Committees on Railways with a view to implementing them as far as possible.



RAJYA SABHA

Re-Distribution of Posts in Various Grades of S. Ms. and A. S. Ms. on Indian Rlys.

The Deputy Minister for Railways stated that the Government was considering an increase in the number of posts in the higher grades. He also stated that Government had not considered the demands made by the All India S. Ms. and A. S. Ms. Assn., in regard to higher scales of pay as the Association was not recognised. He further stated that, if possible, the matter would be discussed with the National Federation of Indian Railwaymen before implementation of the proposals.

* * *

Import of Rail Cars

Mr. O. V. Alagesan stated during question time that as there was no arrangement to manufacture rail-cars in India, orders had been placed with Australia under the Colombo Plan to import rail-cars.

* * *

Strikes on Railways

Mr. O. V. Alagesan stated that the Government had decided to take a very stringent view of the situation caused by frequent strikes on Railways. Accordingly, condonation of the strike period would not be as lenient as before and that the staff were warned about it. He made it clear that it had been their unfortunate experience that the uniformly conciliatory attitude adopted by the Railway Minister in the past had given rise to misunderstanding in certain quarters. He also announced that the loss of Revenue incurred by the Indian Railways as a result of the recent strikes on the Central, South Eastern and the Northern Railways was to the tune of Rs. 40,00,000.

LOK SABHA

Air Conditioned Railway Offices in Madras

Mr. O. V. Alagesan, Dy. Minister for Railways, stated that a multi-storeyed air-conditioned building for the Southern Railway would be constructed at Madras in the compound of the present General Offices Buildings in Park Town, at an estimated cost of Rs. 48,00,000.

Mr. Lal Bahadur Shastri Railway Minister, stated that the weather in Madras being very severe, such an air-conditioned building was necessary and that this facility would be available both for Officers and Clerical staff.

* * *

Association of Labour in Railway Administration

Mr. Abid Ali, Dy. Minister for Labour, stated that Railways were considering the question of associating labour with management through the formation of Management Council. He stated further that questions as to the precise scope and manner of such participation were not being considered.

* * *

Incentive Bonus Scheme

Mr. O. V. Alagesan, Dy. Minister, Railways stated that the incentive bonus scheme in C.L.W. was working satisfactorily and that the Railway Ministry wanted to extend this scheme to other Railway Workshops and a Special Officer was dealing with this question. He further stated that the suggestion of the Estimates Committee that the system of incentive bonuses prevalent on the Western Railway be introduced in the Indian Railways was being considered by Government.

* * *

Overcrowding in Suburban Railways

Mr. O. V. Alagesan, Dy. Railway Minister, stated that the staggering of working hours was being first applied to the Railway Offices in Bombay, Calcutta and Madras, since this Ministry could not compel any other Department or Establishment to fix the Office hours at a particular time.

* * *

Privilege Ticket Orders for Central Government Employees

Mr. B. N. Dattar, Minister for Home Affairs, stated in the Lok Sabha that the question of granting P. T. Os. for Central Government employees going on leave was being actively considered and that a decision would be communicated within a few weeks.

* * *

The Metric System of Weights

The Rajya Sabha agreed with the recommendations of the Lok Sabha to refer the standard of Weights and Measures Bill 1956 to a Select Committee of both the Houses. This Bill seeks to establish standards on the metric system.

* * *

Catering on Indian Railways

In reply to a complaint of bad catering arrangements on the G. T. Express, Sri O. V. Alagesan, Dy. Minister, stated that the quality of food had improved as compared with the food supplied before the introduction of departmental catering. The Minister for Railways also assured the House that he would look into the complaint but that from his personal experience he found that generally the quality of food served in refreshment rooms and dining cars had definitely improved after departmental catering.

* * *

Increase in Production of Rly. Coaches

The Parliamentary Secretary to the Railway Minister stated that the Government had made arrangements for meeting the requirements of 6156 BG and 4786 MG coaches of the Indian Railways during the Second Plan period and that the Government were considering a proposal to set up an MG Coach Manufacturing Factory round about Bareilly in Uttar Pradesh.

He further answered a supplementary to the effect that the cost of coach manufactured in the I.C.F. was Rs. 1,80,000/- plus Rs. 60,000/- for furnishing, whereas the cost of a coach manufactured in the Hindustan Aircraft Factory was approximately Rs. 1,40,000/.

* * *

Durgapur Steel Plant

An agreement with the U. K. Consortium for the setting up of the Durgapur Steel Plant would be finalised before the 15th September for which purpose an official delegation is already in Europe. This information was given by Mr. M. M. Shah, Minister for Heavy Industries, in the Lok Sabha on 1st September.

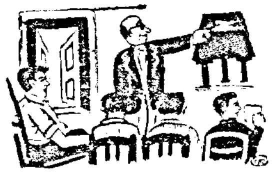
* * *

Manufacture of Railway Coaches at Hindustan Aircraft Factory

The Minister for Defence Organisation stated that the plan was to extend the capacity of the Hindustan Aircraft Factory gradually to manufacture 300 integral type rail coaches every year. A West German Firm would supply the designs and necessary technical data and would give technical assistance in planning the expansion of the factory, and also in actual production work. It would train some Indian technicians deputed by the Factory in its Works in Germany. The Firm would be paid a royalty on production. He stated in reply to a further query that the Railway Board had thought it fit to have two consultants, viz, a Swiss Firm and the West German Firm.

* * *

(Continued on page 195)



Readers' Forum

Direct Recruitment of subordinate supervisory Officers for Indian Railways

At page 157 of the issue for 1956, attention was drawn to the Railway Board's decision to recruit Chartered Accountants for training as Accountants and Inspectors.

One of our Readers in the North feels very much aggrieved over this decision and feels that the prospects of every aspiring employee in the Subordinate Accounts Service have been blasted by this decision. It is but natural that a feeling of despondency should haunt the minds of employees who have been just learning that they should deserve and desire and so long as sincere attempts are made by them to prove themselves more efficient by acquiring sounder and more extensive knowledge every encouragement should be given to them. Among the handicaps they suffer from, are mentioned the following:

(1) Non-availability of certain Codes like the Code for the Accounts Department, Code for the Stores Department and the Code for the Traffic Department etc.

(2) Lack of training facilities.

(3) Non-existence of adequate relief for bona fide examinees from their normal duties in the Office which on the other hand are increasing enormously.

(4) Non-grant of leave to Examinees for preparing themselves for the examination.

The Reader states further that when the Board have deemed it fit to afford all possible facilities to the probationers who are to be recruited under the above decision by the supply of Codes, imparting training through officials and grant of a decent stipend during the period of probation, it does sound natural that employees who have already given their loyal service to the Railways should have such facilities given to them also.

There is no use of shutting our eyes to practical difficulties and to facts as they exist. While it is very essential that fresh blood must be infused into the administration occasionally, still everything is lost by making the existing staff take a hostile attitude.

Further, a certain percentage of vacancies should alone be utilised for such direct recruitment which is nothing new to the Railways. It existed in the past, it went out later and it is come back again in a different form, to suit the present-day circumstances. Everything should, therefore, be done by the Administration to allay the fears of the existing staff that they are likely to lose tremendously by the proposed direct recruitment.

OBITUARY

Mr. V. N. Singaravelu Mudaliar, Retired Pay Master and Cashier, Ex. M.S.M. Railway died on the 30th July 1956.

He had served in various subordinate capacities on the ex. M. & S. M. Rly. and was a very intelligent Accountant with a clear knowledge of Construction Accounts. He served as the Pay Master and Cashier for sometime before retirement. We offer our condolences to the bereaved family.

THE RAILWAY ACCOUNTANT

September 1956

SPECIAL SUPPLEMENT

CONTROL OF REPAIR COSTS IN RAILWAY WORKSHOPS

(Containing Outline of a System Designed for a Carriage Repair Shop)

BY YASH PAL PURI, M.A., J.D., A.C.W.A. (LONDON); GRAD., I.I.A. (LONDON);

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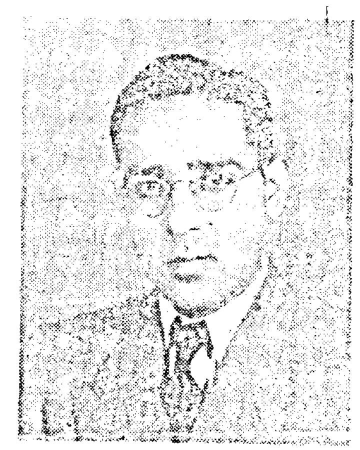
Railway workshops are currently spending nearly Rs. 80 crores per annum on the repair and maintenance of the rolling stock. The Kunzru Committee (1947) had pointed out that "it is possible to improve the output of the (Railways') mechanical workshops to the tune of 25% by able advice and vigorous management." Obviously, an annual outlay of the magnitude of Rs. 80 crores, offers a vast field for the study of possible economies, as measured in terms of money and efficiency.



2. The extent, however, to which repair costs can be controlled in Railway workshops, depends largely on the degree to which these costs can be measured and analysed. But control procedures of measurement and analysis can be installed only if there are already in existence scientific systems for the ascertainment of repair costs.

Many Railway workshops, at present, compute only an "average cost of repair" for the purposes of the *Monthly Statistics* of the Railway Board. For this purpose a month's expenditure is accumulated under a few headings ("Standing Work Orders") and the total is divided by the number of "standard" locos/4-wheeler carriages etc. repaired and sent out in the month. The average thus obtained seldom turns out to be a true index of a workshop's performance. For one thing, even the expenditure on which the 'average' is based is often not the expenditure actually 'incurred' in the particular month: usually there are substantial debits and credits relating to the previous months which are adjusted in the current month's accounts, and conversely there are debits and credits of the current month left over for adjustment in the following month's accounts. A further error is caused by the presence of a varying amount of work-in-progress at the beginning and end of each month. Since the incidence of this factor cannot be isolated readily from a month's activity, the outturn adopted for the purposes of 'average' is the number of locos/carriages etc., *actually* sent out in the month. The outturn, as such, includes the work-in-progress brought forward from the previous month and excludes work-in-progress left over at the end of the month. It, thus, loses value as a measure of the quantum of work done in the month.

3. In the circumstances outlined above, it is not unusual to come across 'averages' according to which a smaller job costs 20 times more than a relatively bigger job in the same workshop, or the repair of a

'standard' locomotive costs Rs. 84,000 in one month, and for no real increase in efficiency, drops down to Rs. 24,000 in just the following month.

At times it so happens that a backlog of credits of a workshop for a month exceeds even the total debits for the month and we are faced with a curious situation of a negative figure as the 'average cost of repair'!

4. Apparently, no control can be exercised on the basis of statistics which do not depict a real situation. In order to have a plan of cost control in Railway workshops, it would, therefore, be necessary to instal procedures capable of indicating what it actually costs to repair an item of rolling stock. Simultaneously, there should be brought into existence systemised cost and statistical records which would indicate whether or not the current performance has been efficient, and in the long run, be also helpful to the executives in deciding whether it is cheaper to repair an item of rolling stock, or scrap it.

5. Such procedures and statistics, in the very nature of things, will have to be developed and improved upon by trial and error. This is because repair costing is a complex problem and has not received concentrated attention in the past. Further, the procedures have got to be sufficiently flexible and adaptable so as to suit the needs of numerous Railway workshops which vary in size and efficiency and whose layout and ancillary facilities are also not of equal level.

The approach, however, to the problem will become simplified appreciably if it is possible to determine, as a guide, the objectives of repair costing in a Railway workshop.

Objectives of Repair Costing in Railway Workshops

6. In conformity with the observations of the Kunzru Committee * on the subject, our repair and maintenance records should, in specific terms, be so designed as to

(a) indicate which types or makes of rolling stock have a history of high maintenance costs and as a corollary, provide information on when replacement costs less than continued maintenance;

(b) reveal types of repair work of a periodical nature which might lend themselves to preventive maintenance and thus reduce losses from operating inefficiencies; and

(c) suggest methods for reducing repair costs and provide information as to efficient and inefficient maintenance work.

7. In a broad sense, the achievement of the first objective entails maintenance of the repair history of each item of rolling stock. In the case of wagons, however, there are difficulties, other than multiplicity of accounts, in maintaining individual histories. One such difficulty is that under the present arrangements the same wagon may come back for overhaul to the same workshop for ten years or more. In the case of wagons, therefore, the next satisfactory method would be to keep statistical history of repairs grouped by age, type and make of wagons.

8. It will, however, be observed that the decision to scrap an item of rolling stock, is influenced far more by what it will cost to put it in a state of adequate repair than what has been spent on it so far. It follows that the work involved in ascertaining

* Para 168 of the report of the Indian Railway Enquiry Committee.

the total repair cost to different items or types of rolling stock is hardly justified if this is the sole reason for obtaining it. An estimate, with or without financial concurrence, is therefore necessary for all major repairs, which in conjunction with the age and repairs record of the item of rolling stock, can be utilised in order to ascertain whether it is worth while incurring the expenditure or not.

9. The second objective is concerned with the efficient planning of repair and maintenance work, for once the regularity of a repair is known from the cost records, it becomes possible to set up a schedule of preventive maintenance work which will reduce repairs due to breakdowns.

10. The realization of the third objective, viz., control over repair cost, is dependent upon the comparison of actual costs with estimates, provided that the estimates are based on a reasonable standard of efficiency in carrying out repairs.

11. It will, however, be readily apparent that preparation of estimates for repair jobs, is a problem considerably more complex than estimating for standard manufacturing jobs. But it may be considered that after a sufficient experience of maintenance service, a planned accumulation of repair cost data and a scientific time-study of the various operations, it would be possible to evolve "norms" and estimates against which actual performance can be measured and controlled. With the establishment of analytical job standards, as visualised above, it would be safe to presume that variations in expenditure which are caused by the inevitable difference even in similar repair jobs, are only slight so that an estimate can be used as a satisfactory "average" for comparison.

Some suggestions have been formulated in the following paragraphs in regard to planning, controlling and accounting for repairs, with special reference to the requirements of a carriage repair workshop.

Organisation of the Repair Function in Carriage Workshops

12. In order to explain the necessity of proper organisation of the repair function, it would, perhaps, be useful to review some of the prevalent practices in the carriage repair workshops, in so far as the measurement of the economy of repairs or replacements by new parts is concerned.

In most workshops, the extent of repairs required is settled by the chargemen in the shops, who also notify the material requirements to the Progress Office. If material requirements are found "generally" within limits, the chargemen are authorised by the Progress Office to draw materials from the Stores. Every chargeman sends his own men to the Stores Wards for procurement of the material. A precise assessment, is not made of the "time required" for the different jobs. Actual time spent by workers is booked by chargemen in time-sheets. Released material is despatched to Stores in wagon-loads at convenient intervals.

In the absence of a proper system of scheduling, there is often quite a sizeable proportion of coaches in workshops which have been under repair for long periods, whereas the standard time for complete overhaul is about 21 days, including 12 days for painting.

13. A pre-requisite of proper control, in the circumstances, is the establishment of a centralised organisation whose functions and duties will, more or less, be as follows:

(i) Examination of the work to be done on each part of the vehicle, immediately after dismantling, so that before the repairs are undertaken, the Mechanical Department might be in possession of the true guide to the repairs necessary, having regard to the fresh life given to the part concerned, or the vehicle as a whole, after repairs.

(ii) Planning and Scheduling of repairs. After determining the extent of

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repairs to be done as above, this organisation would send repairable parts to the respective shops for attention indicating also what repairs are necessary. It would also give priority ratings to different items of work, keeping in view the needs of the jobs and the load on the shops. As advance preparation for replacements, the organisation would also draw up orders for the manufacture of non-stock items directly on the manufacturing shops.

(*iii*) Examination of the work methods and scientific time-study of the repair operations. The time studies will enable the organisation to fix "time allowed" for the various operations as well as enable a comparison of actual performance with that yardstick.

(*iv*) Stores Control. For all replacements of stock items as might be considered necessary after the initial examination of the vehicles, requisition would be placed on Stores by this organisation.

It would be the duty of this organisation to procure the required raw materials from Stores and supply them to shops in proper time so that no jobs are held up for want of material. Shop scrap would also remain in the custody of this organisation until returned to Stores.

(*v*) Maintenance of *History Cards* (Exhibit B) in respect of the carriages allotted to the workshop for repair and maintenance. The *History Card* may have provision for the following data:—

(*a*) Cost of each overhaul classified according to main sections of a coach.

(*b*) Period between successive overhauls.

(*c*) Days coach remained in shops.

(*d*) Mileage run since last repairs, and

(*e*) Cost of repair per mile with reference to the mileage run since last repairs.

Such an analytical data of performance will enable the Administration to judge which types or makes of coaches are more costly to maintain than others. The excessive shopping time, where occurring, will also come under review of the Works Manager.

(*vi*) Development of preventive Maintenance Schedules. The initial examination of the coaches would bring to notice the frequency of repairs and replacements of certain parts. Once the regularity of repairs and replacements is known it will become possible to set up schedules of preventive maintenance, which will eliminate or reduce repairs due to break-downs.

14. The organisation, as visualised above, can be brought into existence, to a large extent, by the rearrangement of the existing set up in the workshop. The proposed organisation should work independently of shop foremen and should be placed directly under the Works Manager. For the sake of distinction we may name it as the *Forecasting Organisation*.

Independent Examination

15. Each coach received for repairs should be subjected to an independent initial examination at the different stages of the dismantling of a coach, which will be:—

(*i*) Stripping of the interior fittings, including up-holstery when the repair starts. (The electrical fittings will be removed as hitherto by the Electrical Department working in collaboration with the Forecasting Organisation).

(*ii*) Examination of the underframes and bogie details, vacuum cylinders etc., after the coach has been lifted.

(*iii*) Examination of the exterior and interior body details, like doors, windows, locks, panels, upper and lower berths, partitions, lavatory, floor, ceiling etc., and

(*iv*) Examination of the exterior and interior painting including polishing and renewal of roofing etc.

The results of the examination of the work required to be done, will be shown by this organisation in a Master schedule (Exhibit A).

The Master Schedule will be prepared in triplicate. One copy of the same will go to Accounts, and besides being a quantity estimate (analogous to the Standard Operation and Estimate Sheet) will serve as a signal for opening a cost account. The second copy will go to the foreman of the carriage Repair shop and act as a guide in regard to the repairs etc., necessary. The third copy will remain with the Forecasting Organisation which will also be responsible for ensuring that the examination and other operations are "progressed" to meet the flow of work and organisation of the shops.

There will, however, be provision for any necessary revision in the Master Schedule, which may be found necessary during the execution of the work, but such cases will be reported to the Chief Inspector of the Forecasting Organisation for authority to revise the schedule.

16. When sufficient experience has been gained by the Forecasting Organisation, it might become possible to evolve a form of a Master Schedule in which will be preprinted the descriptions of the repetitive routine items requiring renewal or repair, as well as the repair operation involved. It will then be necessary to enter only the quantities against description of items under 'Material Requirements' and 'time allowed' against various operations under 'Labour Requirements.' This will naturally save much clerical effort.

Standard Limits of Wear and Scrapping Stages

17. In order to guide and control the work of the Forecasting Organisation it will be of first importance to fix definite standard limits of wear and scrapping stages as amount of work to be done, and thus the expenditure involved, is governed by this factor. The fixation of such limits will be the responsibility of the Chief Inspector of the Forecasting Organisation, in conjunction with the Chief Draughtsman and Foreman concerned with the work. Certain important limits may be fixed by the Works Manager.

In order to ensure further that only economic "repair" work will be done at the repair branches, the Forecasting Organisation will be equipped with special apparatus for readily disassembling parts which are worn out and have to be taken apart for repairs. This will ensure that practically all scrap material is dealt with by the Forecasting Organisation.

This method will save transport, and material for replacement will also be ordered earlier by the use of Master Forecasting Schedules.

These arrangements also presuppose that all the dismantled details will remain in the custody of the Forecasting Organisation until fitted back on the vehicles concerned.

18. A Colour Scheme may be adopted in the Fitting Shops for dealing with all coach parts going through for repairs. Each detail may be marked with a definite colour as it passes through the Forecasting Organisation, indicating clearly the nature of the necessary repairs, adjustments or replacements. With the adoption of the Colour Scheme it can be assumed that items in the shop or precincts which do not carry this mark are being manufactured for Stores stock.

The colour used and the meaning of each colour may be as follows :—

Red	—	Article to be scrapped.
Blue	—	Rectification.
Yellow	—	New detail required.
White	—	To be drawn or lengthened.
Black	—	To be pieced, closed, set or jumped indicated by separate markings.
Green	—	No repair required.

Under this system, information with regard to requirements of new material for repairs will be obtained early and the scrap will be separated and disposed of at the earliest opportunity.

Establishment of Cost Centres

19. In order to permit the analysis of costs as well as control of repair operations it will be necessary to determine the points at which control should be installed. It would, therefore, be the first duty of the Forecasting Organisation to examine closely the entire repair process and establish clearly defined "cost centres." It would be readily apparent that general classifications like 'carriage repair' and 'painting' etc. are far too broad for proper analysis and control of expenditure. It would lead to better efficiency and more effective control if, for example, the operations carried out in the Carriage repair shops are distinctly classified as 'lifting,' 'attention to vacuum brake,' 'attention to cement and tile flooring,' etc., etc. Likewise, painting can be further subdivided into 'venetian painting,' 'other painting,' 'lettering' etc. A list of "cost centres" according to which expenditure of a carriage workshop may be analysed, will be found in Exhibit C (Cost Sheet).

20. In order to facilitate accumulation costs under these cost centres, it would also be necessary to allot code Nos. to them; for example, the No. 001 may stand for 'lifting,' 003 for 'attention to vacuum brakes,' (cf. Exhibit C).

Valuation of 'Repaired' and 'Repairable' Components

21. Perhaps, the most knotty problem which a system of repair costing will have to face, will be in regard to—

(*i*) valuation of repairable parts released from the rolling stock received in the workshops, and

(*ii*) valuation of the above parts at the time they are issued to the indentors after repairs.

22. There are at least, 5 different methods in vogue at present in Railway Workshops for the valuation of "repaired" and "repairable" materials. These are as follows :—

I. Released duplicates are brought on the Stores ledgers at the cost of new articles *less* the estimated "cost of repair," and the Chief Mechanical Engineer fixes a schedule of "estimated cost of repair" for the purpose. After repairs, the articles are issued to indentors at the rates applicable to new articles.

II. Released duplicates are brought on Stores ledgers at scrap rates. After repairs, the duplicates are accounted for in Stores ledgers at scrap rates *plus* the average cost repair and are issued to the indentors at a rate based on average of the values of new and repaired materials.

III. Released duplicates are brought on Stores ledgers at scrap rates, but after repairs are issued to indentors as "second-hand," at the scrap value *plus* the actual cost of repair.

IV. Released duplicates are brought on Stores ledgers at scrap rates, but after repairs are issued to the indentors at the rates for new, irrespective of the actual cost of repair, and

V. Released duplicates are brought on Stores ledgers at 1/4 of the book rate in respect of ordinary items and 1/3 of the book rate in the case of carriage and wagon brass bearings. After repairs, the articles which are as good as new, are brought on the Stores ledgers as new and issued to indentors at rates applicable to new articles, while others are issued at second-hand book value.

23. Perhaps, none of the foregoing procedures is sound enough in principle from the point of view of scientific costing of repairs. For one thing, these procedures do not take into consideration the precise effect of "depreciation" on the repairable duplicates, as distinguished from the expense involved in reconditioning and repair. Procedures I and IV imply that a reconditioned duplicate has as much "life" as a new one and as such the former can be issued to the indentors at the rates for the new. Procedures II and III (and also IV) presume that a repairable item — whatever the extent of repairs required or the useful "life" still remaining — is practically worth only the scrap value of its metal content. The inequity of this procedure will be quite clear from the fact that a Rod Piston costing about Rs. 150 and needing only a few rupees worth of repairs, is required to be returned to Stores at the scrap rate of only annas seven.

24. There are some other specific drawbacks also in the foregoing procedures.

Procedure I.

(*i*) In a large number of instances, the material originally classified as 'repairable' is eventually scrapped when sent to manufacturing shops for repairs. This feature renders accounting difficult under this procedure.

(*ii*) Statistics necessary in order to arrive at a standard estimate of the cost of repairs of each and every one of the thousands of articles, are difficult to compile. They also necessitate employment of special staff for their maintenance, making the procedure costly to operate.

(*iii*) The issue of repaired parts at the cost of new articles adversely affects maintenance costs and reflects a fictitious position in the statistics of expenditure incurred in maintenance and repair. (This also applies to procedure IV).

Procedure II.

(*iv*) Averaging out of the value of new and second hand repaired articles, results in the former being issued at rates *less* than the average purchase price while the latter at rates *more* than the scrap value plus the average of repair. This is apparently not realistic.

Procedure III.

(*v*) As the cost of a job is not available immediately on its completion, some sort of approximation becomes necessary which in turn involves adjustments at a later stage with a risk of confusion.

(*vi*) Additional accomodation is necessary for each class of items reconditioned, for which new duplicates are stocked, as they cannot be kept in the same bins. And additional storage space is not a strong point of most of the Stores depots. The procedure also necessitates maintenance of separate stock cards for second hand items which involves extra work. As in most cases there is no difference between the physical appearance of new and reconditioned duplicates, it also becomes necessary to mark the reconditioned duplicates in order to distinguish them from new ones. All these factors make this procedure costly and cumbersome.

(*vii*) Another notable drawback from the point of view of repair costing, may be explained with the help of an actual example. A Plunger Buffer 13" costs about Rs. 175 while its scrap value is less than Rs. 2. It costs on the average Rs. 25 to repair a Plunger Buffer, so that when repaired, the item will become worth Rs. 27 (i.e. Rs. 2 scrap value + Rs. 25 cost of repair). Now, the repair cost of a coach on which has been fitted a new Plunger Buffer will obviously be more to the tune of Rs. 148 (Rs. 175 minus Rs. 27) in respect of one item alone as compared with the repair cost of a coach which has been fitted with a repaired Plunger Buffer.

There are always scores of new and repaired items involved in the overhaul of a coach, while hundreds in the case of locomotives. In the circumstances, the repair cost statistics compiled under this procedure, become unsuitable from the point of view of comparison with other periods and other workshops.

Procedure IV.

(*viii*) According to this procedure, repairable material is drawn by workshops from Stores at scrap rates, and after repair is returned to Stores at rates for new, (irrespective of the actual cost of repair). This results in the accumulation of large amounts of credits in the Manufacturing (W. M. S.) Account. In some workshops these credits range between 1 to 2 lakhs every month. These enormous credits are adjusted to Final Heads of Accounts and evidently lead to a good deal of distortion in costs.

Procedure V.

(*ix*) This procedure indeed gives a slight recognition to the effect of "depreciation" on parts inasmuch as repairable articles are brought on Stores ledgers at 1/4 of the book rate in respect of ordinary items and 1/3 of the book rate in case of carriage and wagon brass bearings. But this procedure is open to the objection that it leaves a lot of room for manipulation in fixing the price of the repaired articles, because classifications of repaired articles as second hand and "as good as new" is largely a discretionary matter.

A Possible Solution

25. After having arraigned the existing practices, it becomes necessary to answer the question: What alternative method of evaluating "repaired" and "repairable" duplicates will meet the peculiar requirements of a system of repair costing? Considering the fact that in a loco workshop alone there are about 15000 different types of duplicates to be dealt with, and the extent of wear and tear in each of these duplicates is different, the answer, oddly enough is, that no scientific, or even satisfactory, formula can be found for the required evaluation. A more practical approach in the circumstances, would be to control the very cause from which this problem arises, namely, the return to Stores of released material for its repair later on in "economic batches". A question then arises: Is the "economic batch" a realistic proposition for the requirement of repair workshops, and should the "repairable" materials be sent to Stores?

One may venture an opinion in this connection that the expression "economic batch" has a more practical significance in the manufacturing jobs where the turret and automatic lathes require a good deal of setting time which must be exploited to the fullest extent. The repair jobs, on the other hand, are rarely alike, and as such not always capable of being mass-produced. In these circumstances, if the released duplicates are repaired in the shop itself and put back, so far as possible, on the rolling stock from which they were disassembled, with only the unserviceable parts going to the Stores as scrap, the problem of evaluation can be reduced to negligible dimensions. For such of the few repairable items which, per force, must be returned to Stores, one or other of the existing methods might be adopted, for if the number of items to be evaluated is reduced to the minimum, the respective drawback of the evaluation procedure will not have serious repercussions on repair costs of the rolling stock.

26. It is also necessary, at this stage, to consider some of the notable drawbacks of the system of carrying out repairs to duplicates in 'economic batches'.

(*i*) Under this system, Stores are required to maintain an equivalent number of new parts for all the repairable ones received. This results in locking up of the capital beyond what is warranted by the situation as well as in an artificial shortage of serviceable parts.

(*ii*) The system has made store keeping and accounting rather cumbersome. Much effort is involved in the respective pairing of the Issue Notes and the Advice Notes as well as in the posting of the priced and numerical ledgers.

(*iii*) There is a considerable amount of handling involved in sending the repairable parts to the stores, drawing them for repair, sending them back to the Stores after the repairs and redrawing them for consumption on a particular job.

(*iv*) The system removes the supervisors and craftsmen from the realities of 'repairing' the rolling stock. Rather than "repair," "re-assembly" becomes the key note of repair activity.

27. On the other hand, the proposal in regard to linking of repair on parts to the repair accounts of the individual coaches has certain distinct advantages:—

(*a*) Such a system will bring under regular review of the Forecasting Organisation of the Workshops the recurring faults indicative of weakness in design as well as the question of abnormal wear and tear of parts. It will also afford an opportunity of reviewing the methods of repair and fixing the physical limits of the work to be done.

(*b*) In conjunction with labour and material requirements specified by the Forecasting Organisation, the system will permit of connecting the cost with the actual work to be done, so that only the economical repairs will be undertaken.

(*c*) Last but not least, this system will reveal to the Forecasting Organisation the repairs which take place at regular intervals. Thus, it will be possible to evolve preventive maintenance schedules.

28. Mention may also be made of the fact that not all Railway Workshops, return the dismantled, repairable material to Stores. In some, the practice is dictated by a general paucity of new and repaired parts, which compels them to repair the dismantled material and put the same back on locos/carriages, etc. being overhauled. In others, it is due to a local "tradition". This practice, it may be stated, hardly causes any detention to the rolling stock.

29. Incidentally, for a different reason, the practice of returning repairable materials to Stores has very unfavourable repercussions on the average cost of repair, computed at present from the financial accounts. Under the present accounting rules, credit for all material released from the rolling stock, is required to be given directly to the Final Head of Account, "Credits for materials released from works charged to Ordinary Revenue" instead of to the work orders pertaining to repair and maintenance. (This is done with a view to facilitating budgetary forecasts, as credits for released materials are excluded from the scope of the Demands). In such of the shops, therefore, where the practice is to return all repairable material to Stores, an artificial exaggeration takes place in the repair and maintenance costs — there are all debits for the parts obtained from Stores and no relief for the materials returned to Stores.

30. In order, therefore, to make the repair cost accounts a true index of activity, it appears necessary that only scrap should be returned to Stores and not the repairable items. The credits for scrap, so far as possible, should also be given to the repair cost account of the loco/coach, etc. concerned. This system will ensure a better control over scrap material, which in the case of certain ferrous and non-ferrous items in these days, carries a higher value than even the original purchase price. These credits should further be linked, on a test check basis, by Accounts with the entries for scrap given in their copy of the Master Schedule.

31. The coloured markings as already suggested (red in the case of scrap) will

considerably facilitate the identification of the coach concerned as the markings will be in the shape of the individual number of the coach. Small items may be credited to overheads.

REPAIR COSTING SYSTEM: SOME CONSIDERATIONS

32. In designing a suitable system for costing of repair to coaches, it would be necessary to consider first, whether the arrangements should cover each coach individually or the coaches should be "grouped" for the purpose.

In this connection we can, perhaps, draw upon the experience of an Indian Railway workshop where some sort of costing system is already in existence. For the purpose of costing, this workshop has divided the coaching and goods stock into about 70 and 40 "classes" respectively. These "classes" correspond to the standard classification of coaches and wagons already in vogue on Railways, e.g., FCS, WJFC, FCSTLQ, T etc., for coaches, and CRA, BFR, OT, PT etc., for wagons. Every month a cost sheet is opened by this workshop for each class of carriage/wagon and the charges incurred in a month on all the carriages/wagons of a particular "class" are booked on the appropriate cost sheet. Following are some of the typical results thrown up by this system:—

Description of class	July '55		August '55		September '55	
	Expenditure	Outturn	Expenditure	Outturn	Expenditure	Outturn
	Rs.		Rs.		Rs.	
		COACHES				
FCO	14,230	1	8,648	1	1,941	3
S	19,286	2	2,276	1	8,766	2
GNT	567	Nil	8,405	1	12,733	Nil
YT	1,414	Nil	1,350	Nil	1,163	Nil
YTR	2,191	Nil	1,673	Nil	1,347	Nil
YTLZZ	4,472	Nil	6,031	Nil	4,976	Nil
		WAGONS				
CMR	61,170	24	66,176	74	40,547	52
OT	10,923	16	5,094	15	4,841	21
PT	17,528	58	11,949	42	9,427	57
RS	57	Nil	5,281	Nil	1,905	1
CRA	14,235	3	2,951	1	1,213	Nil

33. It will be observed from the above data, that there is no relationship between the amount of work done, and the expenditure incurred from month to month against each "class." For example, while it costs Rs. 61,170 to repair 24 wagons of C. M. R. class in July 1955, the cost of repair of 52 wagons of the same class in September 1955, was only 40,547; that is to say, the cost of repair per wagon was as high as Rs. 2500 in July 1955 and dropped down to Rs. 800 in September 1955. Positions like these, as indicated by the foregoing data, are obviously untenable. It is also noteworthy that outturn against some "classes" is Nil, while there is a lot of expenditure booked against them.

34. The factors leading to the above mentioned situations under "class-wise" costing of repairs, are as follows:—

(i) There is a large and varying amount of work-in-progress (vehicles under repair) at the end of every month. Under the above system, the accounts have got to be closed at the end of every month and this in turn automatically snaps the link between the expenditure on work-in-progress at the end of a month, with the expenditure incurred in the following month. And without the isolation of the element of work-in-progress both at the beginning and end of a month, it is not possible to say, what it has actually cost us to repair a vehicle. Thus the cost figure of Rs. 2,500 per C.M.R. wagon in July 1955 and Rs. 800 in September 1955, are evidently both unrealistic.

(ii) Cost Sheets have got to be opened for every "class" of carriages/wagons undergoing repairs, although there might not be any carriage/wagon of the "class" sent out in that month. In such cases there appears *Nil* outturn against expenditure. (In nearly half the number of cost sheets opened in a month in this workshop, expenditure is booked as incurred with no actual outturn).

It is evident, in the circumstances, that "class-wise" costing is not capable of giving a realistic idea of the cost of repairs, particularly on account of the element of "work-in-progress." This is true whether the "classes" are determined according to the standard classification for vehicles already in vogue, or they are determined according to some other criteria, such as age, type, make, etc.,

35. Consideration at this stage may also be given to the following likely drawbacks of "class-wise" costing.

(i) It is a common knowledge that two coaches of the same 'class' (even when they are put on the line on the same date), would undergo different amount of wear and tear if one of them is attached to the rake of a branch line train and the other to that of a long-distance mail train and would as such need different extent of repairs. It would therefore, be unrealistic to aggregate the expenditure on such coaches and average the same out for finding the cost of repair per coach.

(ii) If records are related to "classes" only, one of the main objectives of repair costing, namely the prevention of uneconomic work would be missed. This objective can be achieved only through the initial examination of a coach received for repairs and the maintenance of unit records. For this purpose, it is essential that the actual cost of reconditioning a coach should be known in order to fix physical limits when replacement, as distinct from repairs, became economical.

36. The answer to the problem, therefore, is the introduction of an arrangement for the costing of repairs to coaches individually. In bigger carriage workshops, however, which overhaul between 50 to 100 coaches every month, this arrangement would mean the opening of an equal number of cost accounts every month, with the risk of some confusion in the allocation of charges. In view of that a simplification is suggested against the undermentioned background.

If a scrutiny is made of the 'serial numbers' on carriages called in by a workshop in any month for carrying out the periodical overhaul, it will be found that these are often contiguous. This is due to the fact that in many cases a sizeable portion of a particular rake is called in for overhaul at one time, and many of the coaches in the rake belong to the same 'class' and also had been put on line on the same date. Since all such coaches have been subjected to the same amount of wear and tear, we can have one Cost Sheet for costing of repairs to all such coaches.

37. These Cost Sheets should not, however, be closed at the end of a month but should remain open until the expenditure pertaining to the last coach in the "group" has been booked. The total expenditure on the cost sheet can then be divided by the number of coaches in the group and cost per coach obtained for the purpose of posting the information in the *Coach History Card* (Exhibit B). With the help of this Card and the advance estimate of repairs it will be possible to achieve the objective "whether it is economical to repair the coach or scrap it".

38. It may also be pointed out at this stage that out of every 100 coaches allotted to a workshop for repairs, nearly 60 will be found to belong permanently to definite rakes. It would considerably assist the 'calling in' program and the costing arrangements if the rakes are so reconstituted that as many coaches of the same type or age as possible, come under the same rake.

Further as it takes on the average about 21 days to overhaul a coach as many cost sheets will be closed as opened every month under the proposed arrangement and there will thus not be substantial chances of confusion in bookings on account of a multiplicity of cost accounts being in operation. The initial examination and estimation, which will be integral parts of the individual repair, costing, will to a great extent promote the ascertainment of more accurate costs, because incorrect charges will be readily located.

39. As regards addition in quantum of work under the proposed costing arrangements, mention may also be made of the fact that many Railway Workshops are at present maintaining separate work orders in financial accounts for the job costing of components, even where the total cost of a work order is less than Rs. 500 (cf. Grouping Work Order). Certain big locomotive repair shops are manufacturing about 16000 different types of components in respect many of which there are several repe orders in a year. Besides these 16,0 components, the shops also undertake very large number of "Repair" orders f repair to serviceable parts in "economi batches" which are also repeated sever times over in a year. It would, thu appear that the number of cost sheets th will be opened under the proposed arrange ments, would indeed be a very small affai as compared to the job costing of compo nents.

Work Orders

40. In order to collect and analyse repair costs it would be necessary to develop a three-barelled work order code. The first portion of the work order should indicate the Final Head of Account to which the charges of the coach under repair would be booked, e.g., C 2121 for periodical overhaul to passenger carriages; C 2131 for periodical overhaul to "other coaching vehicles", etc.

The second portion of the work order should consist of the code allotted to the cost centre, e.g. 001 to lifting, 003 to 'attention to vacuum brakes', etc.

The third portion of the work order should indicate the actual No. on coaches under repairs. Where two or more coaches have been grouped together for the purpose of costing, the serial number on one of the coaches in the group, need only be given in the work order with a suitable symbol to denote the group, for otherwise the work order No. is likely to become a little unwieldy. A full work order No. like C 2121/001/1982, would, thus, represent the periodical overhaul carried out to coach numbered 1982 by the "lifting" gang.

Compilation of Costs

41. Repair Cost would be collected on Cost Sheet (Exhibit C). Following is a general description of how the various charges will be posted in it.

Labour

The Time Sheets after evaluation, would be summarised on a classification form by the Workshop Accounts Office. One classification form would be prepared for each of the various shops, namely, Carriage Repair, Carriage Building, Fitting, Wagon Machine, Smith, Saw-mill, Mill Wright, Paint, Toolroom, etc. etc. The charges would further be analysed in the classification form in such a way that information is readily available in regard to labour spent in each "cost centre" on each work order. Thus it would be possible to ascertain with the help of the foregoing analysis how much labour was spent in a particular shop, (say, Carriage Repair) in a particular cost centre (say lifting) on a particular coach or group of coaches.

All the labour charges incurred on repairing a coach/group of coaches, duly analysed according to cost centres would then be abstracted by the Workshop Accounts Office and furnished to the Costing Section for posting under the column "Direct Labour" in the appropriate cost sheet. In this manner the labour charges would stand reconciled with the financial accounts even before they are posted in the cost sheets.

Materials

The stores charges would also be summarised on a classification form. This work would be done by Costing Section itself. In order to facilitate reconciliation between financial and cost accounts, there would be one classification form for each Stores Ward (as against one classification form for each shop in the case of labour charges). The stores charges would further be analysed date-wise, work order-wise and cost centre-wise. The stores charges, so analysed, would be reconciled with the similar charges appearing in financial accounts, before they are posted in the appropriate column in the cost sheet.

Information in regard to other stores adjustments as well as debits for materials which have been delivered directly to the shops and have not passed through Stores, would also be collected by the costing section from the Workshop Accounts Office and posted in the relevant Cost Sheet.

Overheads

In the financial accounts, shop and general oncost charges are levied on standing work orders at predetermined rates. The shop and general oncost charges would be aggregated for each shop separately in order to work out a unified rate of overhead per rupee of direct labour. These overhead rates would be multiplied with the direct labour charges appearing against each 'cost centre' and the amount posted under the column "over heads" in the Cost Sheet.

"Misc. debits" appearing at the bottom of the cost sheet would comprise the following:—

(a) appropriate share of "Undercharges — Manufacture and Repairs" debited to final heads C 2128 and C 2138.

(b) appropriate share of charges relating to returning of wheels, where there is a separate wheel park and repair charges to wheels and axles are accumulated under a separate standing work order.

(c) other miscellaneous debits.

"Misc. credits" would likewise comprise the following:—

(a) Materials — scrap or otherwise — returned to Stores.

(b) Appropriate share of "Overcharges — manufacture and repairs" credited to final heads C 2128 and C 2138.

(c) Other miscellaneous credits.

Cost Reports

42. In the Cost Accounts Section the completed cost sheets would be linked with the connected "Master Schedule" in order to see that the bookings on account of

labour and material are not excessive. All the palpable excesses would be settled by the Cost Accountant at weekly meetings with the Chief Inspector of the Forecasting Organisation and the Foreman concerned.

43. The information in the Cost Sheets would be further summarised under the following heads :—

Repairs to
- Body
- Underframe & Bogie
- Painting, and
- Miscellaneous.

44. A fortnightly report embodying the above information would be sent to the Chief Inspector of the Forecasting Organisation who would get the information entered in the respective *Coach History Card* (Exhibit B) and submit to the Works Manager, the statement received from Costing Section, along with the connected *History Cards,* with comments where necessary.

All the excesses about which the Cost Accountant does not feel satisfied, would also be brought to the notice of the Works Manager by making a special mention of the same in the statement mentioned above.

45. A report on the performance on completed work would also be submitted weekly by the Cost Accountant to the Works Manager and the Foreman concerned. This report would show the actual to estimated hours spent on the repair of carriages. A summary report showing the year to date figures may also be prepared quarterly. These reports can be used as a gauge of efficiency and as a basis for further investigation of performance of different shops, and, it is hoped, would serve to foster a friendly spirit of competition among different shops.

Conclusion

46. The plan of cost control as set up in this paper, seems to represent the minimum requirements of the Railway Workshops. Its details can be refined further only after practically working it for some time in a specially *selected* workshop. The analysis of repair costs as proposed, will track down the causes of high costs like faulty layout of shops, inefficient handling, wrong work methods, etc. In the sphere of the Railway workshops, this procedure will perhaps, be the first step towards the adoption of a system of Managerial Control, as recommended by the Indian Railway Enquiry Committee (1947). This will be achieved by the development of Flexible Budgets for the workshops by the segregation of controllable expenditure from the uncontrollable expenditure.

47. It is anticipated that the adoption of proposed repair costing and planning procedure, even in its present bare outline, will lead to certain readily discernible advantages which will far outweigh the additional clerical and technical effort involved. For example :

(1) There will be a closer control over expenditure, as a definite connection will be created between "expenditure" and "performance", as distinct from just the repairing of a vehicle.

(2) Reliable data will be available in regard to the programme of work for each shop. This will help in the effective 'progressing' of repair jobs. Thus, detailed work will be completed to scheduled time, and delays to vehicles will be prevented.

(3) Under the centralised control of the Forecasting Organisation, new parts will be requisitioned early and provided in the scheduled time. The delay to the rolling stock, arising out of non-availability of parts, will thus be reduced to minimum.

(4) Recoverable material will become available for disposal at the preliminary stages of examination and not bit by bit in each

shop. This will result in a tighter control over the released material as well as in its cheaper collection.

(5) Proper supervision and control will be ensured on the part of the Works Manager. This in turn will be made capable of measurement, comparison and justification.

(6) The system will increase the ability to forecast expenditure in relation to the budgetary control of outlay in workshops.

(7) Wasteful expenditure on reconditioning parts will be prevented, where new articles can be provided with greater economy.

(8) Unnecessary replacements will also be prevented as the standardised limits and gauges will settle the extent of work to be done.

(9) Designs of details and abnormal wear of parts will be under regular review.

(10) Last but not least, the comparative figures of cost and performance will be an invaluable guide to questions of designs in new construction work.

EXHIBIT A

Individual Costing of Repair on Coaches

Coach No.

Master Forcast Schedule

I. Stripping

Materials			Labour		
P. L. No.	Qty.	Description	Cost Centre No.	Operations	Time Allowed

Particulars of released Scrap.

II. Examination of underframes and Bogie

Date required	Signatures	Date

Particulars of Scrap released

III. Examination of exterior and interior fittings

Materials.			Labour		
P. L. No.	Qty.	Description	Cost Centre No.	Operations	Time allowed

Particulars of released scrap.

IV. Examination of exterior and interior painting and roofing

Date required	Signatures	Date

Particulars of Scrap released

EXHIBIT B

OBVERSE

Coach History Card

Coach No.	—	2180	Type	—	T. L. R.
Tare	—	T. Cwt. 35—5—0	Waist Area	—	634 25′
Bogie — IRCA Wheel Base 10′—0″			Bolster Centre	—	48′—0″
Built to Drg. No.	—	186	Diag. Book No. 4 S. No. 6		

Whether :— All Steel Body (conventional)
All Steel Body (Roller Bearing)
All Wood Boby (Conventional)

Electrical Multiple Unit (Conventional)
Electrical Multiple Unit (Integral)

Equipped with :

Underframe	I R. C. A. 67′—0″	Body width	10′—0″
Wheels	Eight.	Journal	10′×5″

CL III. 4	No. of compartment	I	II	III
120	Seats (Public)			120
	Seats Military			
	Sleeping berths			

Particulars of Maker	—	M/S. Mckenzie Ltd.
Date Purchased or Built	—	20—11—1953.
Initial Cost Rs. 75,985	—	Rake - 31/32 Frontier Mail.

Particulars of Additions and Alterations.

EXHIBIT B

REVERSE

Heavy Repairs

Date next POH Due	Date		Total days in Shops	Expenditure						Remarks Paint & roofing etc. used & other repairs carried out
	In	Out		Ref. to cost A/c	Body	Under frame & Bogie	Paint	Misc.	Total	

Light Repairs

Summary

Year	Expenditure			Total days in shops	Months in traffic since last repairs	Approximate mileage since last repairs	Cost per Mile	Remarks
	H. R.	L. R.	Total			*		

*Note:—1. Approximate mileage in the case of coaches attached to "rakes" will be worked out as follows: Distance between starting and destination points of the rake × Average No. of trips in a month by the rake × months in a traffic since last repairs.

2. Approximate mileage in the case of other coaches will be: Estimated average of mileage covered in a month by a particular category of coaches × months in traffic since last repairs.

3. A record of mileage in the case of coaches with roller bearing is already required to be maintained, which can be adopted.

4. Approximate mileage will be in the nearest thousand.

EXHIBIT C

COST SHEET OF REPAIRS TO COACHING STOCK

Coaches Numbered...

Class.......................................Nature of repairs.......................................Month..................

Code	Cost centre	Elements of cost			Total
		Labour	Overhead	Material	
		Rs.	Rs.	Rs.	Rs.
	Carriage Repair Shop				
001	Lifting				
002	Copper and Tin				
003	Vacuum Brake				
004	Doors				
005	Venetians				
006	Other Carpentry				
007	Locks and Iron Fitting				
008	Wheels and other Machine work				
009	Cement and Tile Flooring				
010	Rivetting				
011	Painting under frame and Bogie				
012	Greasing				
	Carriage Building Shop				
014	Markg. preparation, Assembly wood work doors				
015	Misc. Fitting Copper and Tin				
016	Cement or Tile Flooring				
017	Venetians				
019	Canning				
	Paint				
022	Venetian painting				
023	Other Painting				
024	Lettering				
025	Trimming				
026	Gilding				
027	Polishing				
028	Leather work				
032	Vacuum Brake				
046	Saw Mill				
047	Fitting				
049	Smith				
050	Mill Wright				
052	Wagon Repairs				
053	Wagon Machine				
057	Misc.				
	Total				
Misc. Debits					
Misc. Credits					
	Total				
Average per Vehicle					

194397.

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Answers for Question Papers of Appendix III Examination 1955 have been held up for unavoidable reasons. They are however expected to be released in quick succession in a few weeks.

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Edited & Published by: L. V. Gopalan, B.A., B.L., *Retd. A.A.O., M.S.M.Ry.*,
14, Balakrishna Road, Mylapore, Madras-4.