

EDITORIAL NOTICE

Contributions are invited to this Journal on matters pertaining to Accountancy, more particularly of Railways. Every such contribution must be signed as a guarantee of good faith, even if not intended for publication. They may be in the form of Notes or short paras or fuller articles.

Manuscripts and photographs, if any, sent therewith, if not accepted for publication, will be returned only if the sender so desires and encloses the usual stamped and self-addressed envelope.

All contributions should be addressed to the undersigned so as to reach him not later than the 30th of a month for inclusion in the next month's Journal, which is published on the 15th of every month.

The Managing Editor does not hold himself responsible for the accuracy of the news supplied by correspondents or for opinions expressed by Contributors.

Remittances may be made by M.Os., Indian Postal Orders or Cheques. In the case of outstation cheques, annas ten should be added for clearing charges.

All communications, contributions, subscriptions, advertisements etc., should be addressed to

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

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APRIL 1956

No. 1

The Task Ahead

With this issue we are entering the third year and it is therefore opportune that we should try to ascertain what we have been able to do in the past and therefrom programme what has to be done in the coming months.

We have generally followed in the past year the sectional system that we set ourselves in the publication of this journal. We are glad to find that some of the sections especially have been well received by our subscribers as is evident by the fact that further clarifications are sought or comments are offered thereon. Though there have been a fairly good number of contributors in the past, the management feels that there is such a wide scope still available that they have no hesitation in making a general appeal to all those interested in the well-being of the profession to put their shoulders to the wheel and see that the experiences that are gained by them in the day to day working of every aspect of the Railway Administration are freely distributed to others less privileged than themselves. This can be very easily done by putting their ideas or suggestions in the form of notes or small articles and sending them on to us for publication. It has been found in practice that there is a general apathy on the part of many of the junior members of the profession to come forward freely with their views. But it must be remembered that knowledge improves only by expression and by inviting criticisms. If people feel diffident of committing to writing their ideas, it may be well nigh impossible for them to do so at later stages when they feel they are more courageous. Even in the Readers' Forum, though sufficient interest has already been aroused, still it is felt that the scope of uncovered matter is so large that a lot more can be done quickly.

It is possible also that several of those who have the inclination to write, may have deferred their work on account of pecuniary considerations; but in the early stages of this Journal it is not possible to offer any such incentive. On the other hand, the members of the profession, whether high or low, should feel that in the very open field that is now left uncovered on the railway accounts side, there should be a spirit of sacrifice first and foremost to fill up such a gap

ACKNOWLEDGMENTS

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

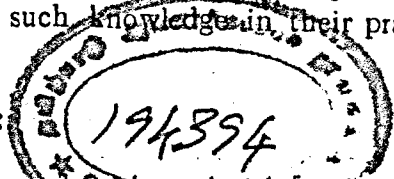
Northern Railway Magazine—February 1956	Australian Accountant—February 1956
Western Railway Magazine—1956	Careers & Courses—April 1956
Chartered Accountant—March 1956	Wednesday Review—W. E. 4-4-1956
Southrailnews—March 1956	Railway Herald—W. E. 9-4-1956
Railcoach—March 1956	Monthly Railway Statistics
Indian Railway Gazette—April 1956	(Rly. Board)—July '55
Accountants' Journal, New Zealand—Feb. '56	Educational Review—March 1956
Central Railway Magazine—February 1956	North-Eastern Railway Magazine—1956
Central Railway Newsletter—March 1956	

and then, in course of time, to see whether their efforts could not be remunerated, even as a token measure. Whatever may be said or done, it is obvious that unless there is variety of style, presentation, matter etc., the Journal cannot cater to all the tastes. In the absence, therefore, of articles or material supplied from within, necessarily such materials as bear upon the subject are extracted from foreign journals. Sometimes these are helpful, and possibly at others they may only be of value for purposes of comparison.

We had occasion to refer in the past issues to the various aspects of the Appendix III-A examination conducted by the Financial Commissioner of Railways. The fact that this examination is intended for selecting supervisory subordinate material of the best type who are likely also in coming years to fill the gazetted personnel with heavier responsibilities, is the reason that has prompted us to devote some pointed attention to the examiners and examinees thereof. We feel that with the wide changes that have come about and the all-round knowledge that staff, particularly of the higher grades are expected to possess, the whole scheme requires a thorough overhaul to fit in into the altered conditions. There is every reason to believe that the staff have realised by now that they cannot deal with the examination in that perfunctory manner in which they used to do some years ago; and they may also feel at the same time that this examination gives them their future prospects in a more defined manner than ever before. It is, therefore, incumbent upon the various railway administrations to give adequate training facilities to all the staff at the various levels in order to make the staff take a keen interest in the acquisition of knowledge which they are beginning to feel gives them their bread, though this latter should have been done very much earlier without the application of sanctions. No doubt, the Ministry has felt the need for training fresh recruits, but obviously they had in mind, mostly the maintenance, operating, commercial and other Departments, rather than the accounts side, though this has also been recently covered to some extent. It is more essential that in view of the heavy expansion schemes of the Railways in the coming five years and of the great tasks and responsibilities that lie ahead of the railway accountant on account of the vast schemes of developments etc., the staff that have to handle them will have to be experts in their own way and they have to be given every available conveniences not only to acquire knowledge but also the methods of application of such knowledge in their practical work.

A few more points before we conclude :

"Prevention is better than cure". Hence when irregularities of a serious nature which affect the finances to a very heavy extent are noticed, necessary



steps have got to be taken to prevent wastage of public money. But somehow or other, an impression is left that not only the action taken on serious financial irregularities in the past are rather belated, but also not effective enough for remedying the situation in such a manner as to prevent a recurrence thereof in the future. This aspect therefore requires very close scrutiny by the authorities concerned.

Suited to the changing conditions and policy of the Ministry of Railways, there is also great and urgent need for reviewing accounting procedure with a view to simplifying them at every stage so as not only to adequately safeguard the financial interests of the administration, but also to provide relief at the initial stages of record and compilation. It is patent that in any scheme, the elementary principles of a moral safeguard and the possibility of any serious breach of rules and regulations being capable of detection at the earliest stage possible, should be provided for; and measures taken for prevention of such breaches should be drastic enough to make delinquents pause and think before they proceed.

Another direction in which we feel that an improvement can be effected is a prize scheme of some sort or awards of bonuses for very efficient work from the lowest level onwards. Instances of late tend to show that there is a lack of interest in the execution of work entrusted to individuals since the incentive side is absent. This has a further deteriorating effect in making others who are more conscientious also get to the wrong side of things. Hence punishment of bad work and encouragement of good work would be required simultaneously.

There are still many other aspects which can be dealt with, and unless an independent research organisation for the Accounts and Audit side is set up for a wholesale review, it is not possible to arrive at satisfactory results. In this connection, it is sad to note the growing suspicion of the finance by the executive and in various matters the financial advice is not possibly as freely sought as would be desirable. The Estimates Committee have also referred to the important position of financial advice in such matters in one of their recent Reports on the Administration of the Railway Ministry; an extract of which is given in this Journal elsewhere. We hope that under these circumstances, we shall be able before the close of this year, to recount a brighter and more encouraging tale.

MAN on Telephone : "No, Sir, I stayed at home today because I'm the only one in the office without a cold."

Financial Control in the Second Five-Year Plan for Indian Railways

In the Eighteenth Report (1955-'56) of the Estimates Committee in regard to the Ministry of Railways, para 25(2)—extracted below—explains clearly the place of the Financial Commissioner, Railways, in the set-up of the Railway Ministry, and his functions in the financial control of expenditure in the Railway Department in the Second Five-Year Plan.

It need hardly be emphasised that, in the discharge of these functions at every stage from top to bottom, either in the Railway Board's Office or in the offices of the individual Railway Administrations, absolute co-operation of the executive with the finance would be essential. While a narrow outlook is to be deprecated, prudential care must never be overlooked.

* * *

"25(2) The next question which has naturally occurred to the Committee is, whether adequate financial control will be exercised on expenditure to be incurred by the Railways on such a large scale. According to the present arrangement in the Railway Board, the Financial Commissioner for Railways is the

representative of the Ministry of Finance in—and is a full Member of—the Railway Board. He is vested with the full powers of the Government of India to sanction railway expenditure, and is EX-OFFICIO Secretary to the Government of India in the Ministry of Railways in financial matters. No proposals involving expenditure or affecting Railway revenues can be sanctioned without his proper concurrence. He has the right to refer directly to the Finance Minister any financial issues on which he finds himself unable to agree with the views of the Minister in charge of the Railway Ministry. He is assisted by a Director, Finance (Expenditure), two Joint Directors and two Deputy Directors, Finance, in the financial scrutiny of all proposals for expenditure on Establishment, Works, Rolling Stock, etc., as well as Planning. All proposals which have financial implications have to be scrutinised by Finance and the proposals are disposed of at the appropriate level. In view of this arrangement, the Committee feel that judicious financial control will be exercised on the expenditure to be incurred by the Railway during their Second Plan."

Management Accounting: Work Measurement

BY HARRY DUGDALE, A.A.C.C.A., A.C.W.A., A.M.I.I.A.

WORK MEASUREMENT.

It is desirable for the application of works study technique to precede that of work measurement. This tends to ensure that the latter will be made in the most favourable circumstances, for where production flow has had its path made as direct as possible, and operator-efficiency increased by the adoption of improved methods recommended as a

result of the work studies, then an accelerated tempo of operation may reasonably be expected. But this is only one of the overall benefits made possible by work study. Better materials handling may be inaugurated, while a shortened path of production should lead to the faster passage of work in progress between successive cost centres. These are, unquestionably, desirable circumstances

in which to introduce work measurement techniques. This is particularly the case where work measurement is used for such valuable purposes as: (a) establishing production standards; (b) formulating incentive schemes of remuneration; (c) providing standard operating times for assessing labour efficiency and computing product labour standard costs; and (d) eliciting data on machine utilization.

There may be temporary circumstances where work measurement is applied prior to, or in the absence of, work study, e.g., where it is desired to establish quickly production standards to act as PRO TEM yard-sticks. Obviously, however, if the product standard costs, and the operating and production standards, are to represent the most efficient and economic achievement, they must clearly portray the cost and time standards applicable to the most EFFECTIVE METHODS OF PROCESSING. These are postulated by the work study technicians only after a rigorous analysis of current methods, and a prediction of essential needs for improved processing, handling, and production flow.

Work measurement technique is applied for several reasons, among which may be numbered:

- (1) To provide a basis for the formulation of schemes of incentive remuneration.
- (2) To establish production standards.
- (3) To provide data on the work content of each defined job or process.

When production standards, in terms of machine and/or labour hours, have been established, it is possible to compute—with a reasonable measure of accuracy—what should be the direct labour compliment in a specific factory for the production of a stated volume of output. This is vital in the control of direct labour costs and replaces guess-work (intelligent or otherwise) on the part of departmental managers.

FORMULATING LABOUR REQUIREMENTS

In formulating direct labour requirements, an important factor is 'output per man-hour.' Work measurement applications ascertain what the average worker is capable of producing, in a stated time, in a specific operation.

Work measurement plays its part in the three major divisions of product total cost, i.e., labour, materials and overhead, enabling economy to be effected in each. Thus, labour remunerated on an incentive basis devised on the time content of each job has been able in a variety of industries, to increase its productivity to a considerable degree. Such increased productivity has its repercussions on the fixed overhead content per product unit, tending to reduce the latter. To put the matter in a different way, an increased volume of output 'recovers' more fixed overhead, thus adding directly to the pool of profit. In the case of materials usage, work study and measurement applications have resulted in better processing and/or handling of the raw material, and of the finished product during the packing stage, often resulting in worth-while reductions of material lost in process.

WORK MEASUREMENT AND STANDARD COSTS

In detailing the time content of each operation, work measurement establishes the essential basis for the formulation of *standard costs for direct labour*. In computing the latter, the labour time standards are evaluated at the standard hourly wage rates. In addition to this, standard times data also provide the *yard-stick* for assessing the productivity of direct labour daily, or weekly, dependent on the management's requirements. A 'barometer' of labour efficiency is thus in being, and the output of a defined period can be expressed in terms of required standard hours, and compared with actual hours taken. If this

datum is analysed in terms of specific 'cost centres,' and tabulated to show the best and the worst performances in each, departmental executives may obtain information of value in deciding whether to change the jobs of those employees who appear not fully competent on their present tasks. With this consideration in mind, training schemes may be inaugurated—possibly on a small 'pilot' plant—in order that new employees, or existing employees who are to be placed on new processing routines, may have the opportunity of gaining facility in the most efficient MODUS OPERANDI before working on the actual process.

The technique of work measurement has, over a period of several years, been applied on a scale ever increasing, and, moreover, in a growing range of industries. Of its practical utility, not only in the sphere of cost control, but also in the economic assessment of the labour force, there can be no possible doubt. Work measurement, by substituting time computations for guess-work, enable management to assess the required labour force; but another of its functions is that of assisting production control by providing data of operating times which

serve as a basis for the computation of machine loadings. If production is to be achieved with the maximum smoothness, there is the necessity in a variety of industries for the accurate planning of work schedules many weeks prior to the date on which manufacture will commence. Planning on these lines is facilitated when data is available of operational times for each phase of the production cycle; possible impediments to the smooth flow of production can be visualized in advance, and steps taken to eradicate or alleviate the effects of, say, plant facilities which are not completely in balance. As we have seen, the related technique of work study primarily surveys existing production cycles with the object of removing impediments, or rendering the flow more facile. Even so, where operational time data is utilized as an aid to production planning, it may reveal in advance an unbalancing of plant facilities that is due to occur on a change in the 'mix' of products ordered from that envisaged in the sales budget.

By kind courtesy of "The Accountants Journal," London.

A Suggestion for Improvement in Provident Fund Accounting

The present system of opening new P. F. ledgers departmentwise every two years on the basis of monthly deduction sheets submitted by the Executive is defective for the following reasons:—

(1) Any mistake by executive passes straight away into the ledger. But for wrong account No. or name in the P. F. certificate, the reflection generally falls on the efficiency of Accounts Office.

(2) For posting the ledgers, folio numbers have to be hunted out from previous deduction sheets which takes much time.

(3) Fresh ledger cards are opened by posters when a folio is not traceable. This very often results in multiplicity of ledgers for the same subscriber. Many of them lie as unconnected accounts and cannot be linked up with the proper account without great labour.

(4) When a folio is not traceable, the deduction may be placed in unposted suspense, the clearance of which takes much time.

(5) Carry forward of balances of staff transferred outside the accounts circle in

a previous year may be left out and lie unnoticed till the annual reconciliation of opening balance of the next year is completed.

(6) Tracing out the present ledger of an old account as mentioned in (5) is very difficult.

(7) Opening of new ledgers for a financial year being dependent on P. I. Journals, delays may occur in opening them and payments during the early part of the year may have to be made from "Payment Ledgers" which is objected to by Audit. (The author has not explained what "payment ledgers" represent.—*Ed. R. A.*). The present situation has been aggravated by

(a) Maintaining separate accounts for Temporary and Permanent members.

(b) 200-300% rise in the number of accounts after 1-10-49 with start of temporary accounts.

(c) 200 times increase in the applications for P. F. Advance.

(d) Too many adjustments through Journal Vouchers.

In such perplexing circumstances, the correct maintenance of P. F. accounts has been entirely left to the ordinary prudence of individual ledger posters. This is the root cause of the defects found in the Division. A sufficiently fool proof system is necessary.

The machine method of P. F. accounting as detailed in para 1332-A is excellently fool-proof and labour-saving as in that case the whole paraphernalia of maintaining check sheets and credit Registers for reconciling the monthly credit passing through daily cash abstracts with the General Books may be avoided altogether. This system, I understand, is under consideration by the Railway Board as it appears from the appointment of a Senior Accounts Officer (P. F. Mechanisation) on the South Eastern Railway.

To adopt this system, ledger accounts have to be arranged in serial order of account numbers and kept in loose cards.

It is high time we prepare the ground work for the adopting of machine methods by keeping our P. F. Ledgers in serial order of account numbers in our present bound ledgers. Even if the machine method is not adopted, we may obtain the maximum benefit of the system without any extra cost in eliminating the present defects mentioned in para 1.

If the serialisation is adopted, the following benefits will be obtained:—

1. Quicker monthly postings.
2. No unposted suspenses.
3. No multiple ledgers for one account.
4. Prompt tracing out of an account.
5. Easier linking up of stray and unconnected accounts with main account.
6. No necessity for opening payment ledgers.
7. Quick switch-over to mechanisation, if adopted.

To implement the proposed serialisation, a separate serial number from unity to 100,000 with a prefixing symbol (A, B, C, etc.) to denote each accounts circle may have to be adopted. For this purpose a minor deviation from code para 1311 (c) A will have to be agreed to for allotting a new account number to each of the staff. The account number allotted by one accounts circle will not be operated in another if an employee is transferred. A separate account number conforming to the seriality of that accounts circle should be allotted prior to deduction in that circle.

Reconciliation through check sheets and ledger-wise or section-wise posting of credit Register will continue as hitherto.

In order that monthly reconciliation can progress unhampered in spite of transfers within an accounts circle, separate blocks of numbers within the aforesaid serial will be allotted to different groups of staff within which transfer is too frequent, viz., Transportation, Loco, Carriage & Wagon office etc. In workshops, the groups may be different shops or groups of shops. This system may obviate the necessity of a card sorter assisting each operator if mechanisation is adopted.

Account numbers of staff who are enjoying guaranteed rate of interest will be included within the fixed portion of the serial and kept in a different book or in the same book in cards of distinctive colour.

In the proposed serialisation, separate blocks of accounts numbers of temporary staff of each group may with advantage be allotted.

To implement this proposal, the initial work has to be based on P. F. deduction sheets for March passed in April which will be called for in duplicate. One copy will be returned with the new serial number quoted thereon to the pay sheet preparing offices immediately and the other will form the basis of Revised Index Register from which the Personnel Branch will be intimated. The old Index Register will show the corresponding

new account number and the new Register, the old account number. In future, the clerk allotting account number on eligibility statement will open new cards. The posters will not be permitted to open new ledgers.

In subsequent years, ledgers will be copied from previous cards instead of from Deduction Sheets.

If agreed to, this proposal may be adopted from the beginning of a subsequent financial year even as an experimental measure on a section, say, Loco or Transportation or any other group, in any Branch office and result watched.

—A. K. ROY,
D.A.O's, Office, E. Rly., Asansol

[At a time when it is reputed that P. F. Accounts organization on all the Railways is not only in arrears but also not in an efficient condition, it is the duty of the authorities to devote special attention to this important matter, in order that the arrears may be pulled up quickly and the organisation placed on an efficient footing. Indeed, it appears that the Railway Board are considering the question of mechanisation with a view to securing better efficiency, but on the Southern Railway seems the machine system which existed on the S. I. Railway is being discarded for boundbook system. For efficiency in P. F. Accounts, properly maintained Index Register is essential and arrears in posting or reconciliation should never be allowed to occur. —Editor, R. A.]

FOR SALE

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Foreword by Sir S. Varadachariar .. Rs. 2 0 0
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Foreword by Sri Justice M. Patanjali Sastri .. Rs. 2 0 0
- [Written by Chittoor T. Srinivasaraghavachariar]

Available at :

The Indian Industrials Ltd.,
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The Men behind the Indian Railways

Some Railway Feats Since Independence

BY KARNAIL SINGH, General Manager, Chittaranjan Locomotive Works

A railway week from April 10 to April 16, 1956 is celebrated by the Indian Railways to mark the 103rd anniversary of the running of the first train in India from Bombay to Thana. Articles from several senior Railway Officers, Members of the Board etc. have been received in this connection for publication. The following is one of such articles ; and several more have been included in the Special Supplement attached to this Issue.

Like the sun and the moon, the Railways are something which the public takes for granted. In this process, the million men who run the Railways in India rarely receive a thought. The lakhs who toil at the machines in workshops, or those who are spread along the track in this vast country and man the numerous administrative offices, are lost sight of. This article tells graphically of some of the heroic deeds which India's Railwaymen performed since independence, often in the obscurity of a wilderness and without any desire for applause.

On the eve of independence, one day towards the end of June 1947, a deputation of Indian Railway Service of Engineers waited on the great Sardarji, then Home Member in the Central Government.

At the end of that meeting, the Sardar asked me a question, somewhat abruptly : " Would you Indian officers be able to run the Railways if all the Britishers left *en bloc* ? "

At once across my mind flashed the picture of Indian Railways as they were then over-worked almost to the breaking point, their maintenance neglected, using over-aged engines and decrepit stock.

The prospects were not encouraging for some branches of Railway working, in which the pace of Indianisation had been comparatively slow.

But whatever the doubts, there was a high sense of pride in me in common with other Railway workers, and I made bold to reply : " We shall put in a very good try, Sir, and I am sure we will run the Railways as well, if not better. In some branches of our work we shall be hard-hit if they all left, but we have full confidence and the will to succeed."

On my way back to Lahore, I went over my conversation with Sardarji time and again, and occasionally wondered how the events would bear me out.

NINE YEARS OF INDEPENDENCE

That happened nearly nine years ago, and now as I ponder over what Indian Railwaymen have done since,—I feel a glow of pride in their achievements. Their performance in the face of crippling handicaps and under difficult conditions has received the acknowledgement that Indian Railwaymen can deliver the goods and in their efficiency, devotion to duty and patriotism, they are inferior to none.

It is not my intention to put forward a formidable set of statistical figures indicating the record of Railwaymen during the last nine years. The figures of Railway working are already known but I would certainly like to give a first-hand, authentic and personal

account of certain events of the Railway history in the last decade.

Ton miles, train miles, freight or passengers carried, are not my theme in this article; the burden of the song is the man behind these figures, the man who constructs, maintains and runs the Railways in the service of India. Although my narrative will be necessarily confined to that section of Railway personnel with whom I am associated, I have no doubt that the cross-section is truly representative of all Railwaymen and to get a complete and comprehensive picture, these episodes should be multiplied a thousand, if not a million times.

PARTITION AND AFTER

The partition of the ex-North Western Railway left the East Punjab Railway in India without a workshop. With a serious shortage in engine crew and no headquarters set to administer the Railway, it had the colossal task of evacuating lakhs of Indian nationals in distress, impatient to reach India from all places of Pakistan, including the far-flung North West Frontier Province and Baluchistan.

It is common knowledge how amidst difficulties, both operational and political, and in surroundings of danger at every turn, India's Railwaymen working round the clock transported more than four million refugees in trains.

With no workshops to look after repairs and depleted strength of staff, each station was overnight transformed into a shed by the willing hands of devoted Railwaymen and every shed became a workshop.

It was an effort unbelievably magnificent and hailed by everyone.

THE DOZEN WHO DARED

There are, however, other aspects of this tale, perhaps now forgotten. Nearly 32,000 Indian Railwaymen were left

stranded in Pakistan mostly at solitary points in wilderness. At way side stations, one or two non-Muslim Railway staff with their families were living, facing danger of life, fear of forcible conversion and dread of dishonour to their women folk. They had to be picked up singly from far-flung places by road transport and places, where trains ceased to run and protection was non-existent. But who was to reach them and how?

On August 31, 1947, in the face of imminent danger to their own lives when West Pakistan was ablaze, a dozen Railwaymen volunteered to enter Pakistan and undertake the task of rescue with all the dangers, risks and hard work involved. This handful of volunteers from Indian Railways, later on joined by others to follow their noble example, picked up thousands of stranded Railwaymen and their families, escorted them into refugee camps or brought them into India in planes or in other transport and thus saved 25,000 out of the 32,000.

A MINOR EPIC

The construction of the Assam Rail Link is yet another tribute to the Railway worker in India. Its history is by now an old tale, but what the Minister for Railways said in his Budget Speech for 1950-51 is worth recalling: "It was anticipated that under optimum conditions, the project would be completed by April 1, 1950, but as a result of the uncommon energy and skill displayed by our Railwaymen, both engineers and other workers, in difficult and unhealthy terrain, the line was completed and opened to goods traffic on December, 9, 1949 and to passenger traffic on January 26, 1950."

Commenting on this, Statesman said: "Completion, five months ahead of time, of the Railway directly linking Assam with the Indian Union through Indian territory is a feat of which those who planned and worked on it may rightly

feel proud. Turbulent rivers were bridged, jungles cleared and the monsoon out-witted. These would have been achievements at any time, but that they should have been efficiently accomplished in a period of post-war malaise and shortages, and of post-partitional disruption, is notably impressive. Perhaps it would be no exaggeration to include patriotism among its motives, even among the humble labourers who toiled in difficult, unhealthy terrain and conditions."

The *Railway Progress* of U.S.A in its January 1951 issue wrote a leading article which *inter alia* said: "In so doing they carved out a minor epic of frontier railroad-building in malaria-ridden swamps, jungles and forests, and they ended Assam's isolation. The Indian built the railroad despite the weather, the terrain, the shortage of skilled labour and materials, some defective American equipment, erratic transportation and the tremendous upheaval that followed partition."

AN ORDER FROM DELHI

In the end of September, 1949, immediately after devaluation in India, difficulties over the movement of essential commodities to Assam and North-East India through East Pakistan became acute. The construction of the Assam Rail Link, then well on its way, was due to be completed early in 1950. About the end of March, I received a telephone call from Delhi in the name of Sardarji, whose question and my answer in June, 1947, has set me to reminisce over these nine years.

He said: "The difficulties with Pakistan in the east are grave and may become worse. We shall hold on, but the Rail link must be completed whatever be the conditions before the end of the year 1949." I said again: "We shall try". The reply came back sharp: "It has to be done. It is a national need."

Needless to repeat here that the Rail Link between Assam and the rest of India was established 22 days before the end of the year, on 9th December, 1949. But how was it done and with what devotion to duty by India's Railwaymen? I shall narrate an incident.

UNCLE WHO DID NOT STOP

Working at night on erecting a pile bridge over a river, flowing fairly furious, one worker slipped from his perch on the top of the driving hammer and went down the river. All men at site rushed and in vain searched for him or his body. I reached the site of the bridge by about five in early hours of the morning and was amazed to find the same gang of workmen driving down the piles and working as if nothing had happened.

The deceased khalasi was a nephew of the mate of the gang. I offered condolences to the mate and expressed my pleasurable surprise at his and his men being at work, within the same shift, at the same site and so soon after the incident.

He said: "The boy is gone, but the bridge has to be built. You have repeatedly told us that our country needs it soon."

His reply brought tears into my eyes. Such epic deeds are soon forgotten, but are rare to repeat.

A MIRACLE HAPPENED

After the partition in August 1947, the portion of the ex-B. A. Railway broad gauge section from Siliguri to Jalpaiguri and Haldibari was left unconnected with the rest of India. This section was worked by the Pakistan Railways. Due to the unhappy political developments at the end of 1949, the working of the Haldibari-Siliguri section by Pakistan became very unsatisfactory and the Government of India decided to convert it into metre gauge so that Jal-

paiguri, Haldibari and the surrounding area could be connected by rail with the rest of India with the least possible interruption.

The task involved conversion of 38 miles of Railway line to metre gauge and construction of a new section one and a half mile long from the metre gauge station of Siliguri North to the broad gauge station of Siliguri Town over the river Mahananda.

Once again an appeal was made to the patriotism of India's Railwaymen and once again they performed the miracle. Rail communication to Jalpaiguri was restored in less than 3 days. The last Pakistan train cleared at 6 P.M. on January 20, and three days later, on Netaji's birthday, the first Indian train steamed into Jalpaiguri by 3 P.M.

Eight hundred patriotic Railwaymen working on this assignment reached Jalpaiguri within three days to join Netaji's birthday celebration. In appreciation of their work, the whole town turned up to meet the train and gave a rousing reception to the heroes.

TOO GOOD TO BELIEVE

The Dehing Bridge, seven spans of 150' each, situated between Naharkatia and Tinsukia, was shaken by the earthquake on August 15, 1950. Piers were displaced laterally, longitudinally and vertically. The girders, instead of being supported by the piers below, which had sunk, hung in the air to the track which had fortunately not given way. After examination of the site, it was reported that communication over this bridge could not be restored in a period of less than six months.

Isolation of the Digboi oil-fields and the area around for that long period was an impossible situation, and the Minister for Railways ordered me to personally inspect this bridge for investigating possibilities of speedier restoration. Meanwhile, the Government of

India had approached the Government of Pakistan for facilities to transport oil and other essential commodities through East Pakistan to Assam.

On inspection of the bridge I saw a very slim possibility of restoring traffic over it by wedging 'distance' pieces between the subsided piers and hanging girders. Tremors following the earthquake were still being felt and passage by men even singly over the bridge was dangerous. Immediate restoration of traffic was a task full of hazards and heavy odds; but national considerations could allow no delay.

The only chance, though a faint one was taken and it was decided to build wooden "wedges" between the piers and the girders. Fortunately, the venture succeeded and the piers supported the girders again. In the dangerous and delicate situation to work between the over-hanging girders and the shaker piers above the raging current of the Dehing river in flood, gangs of bridge khalasis had to work day and night under stress and restored the communication on August 20.

The news of restoration sent by wire was obviously too good to be believed in Delhi and Shillong, and I was personally asked to confirm it.

This is yet another outstanding feat and an instance of monumental devotion to duty by Indian Railwaymen in a national emergency. The congratulations of the Minister for Railways to all the staff for "this excellent performance" were richly deserved.

INDIAN WORKER CAN DO IT

Inspired by the will to build up the country, the Northern Railway started from scratch in April 1952, and in less than a year the administration stood on its feet, ready to take all that was expected of it and more. Entrusted to build the Railway Centenary Exhibition

they set it up as a new standard in exhibitions for the whole country.

When called upon to transport multitudes of men to Magh Mela, 1954, and back, India's Railwaymen once again pooled their sources and in splendid teamwork carried 6,000,000 pilgrims in a matter of days.

At Chittaranjan, where locomotives of the heaviest type are being built, Railwaymen have at last fulfilled an old aspiration of India. Given the raw metal and basic materials, the Chittaranjan Locomotive Works process 100 per cent of the manufactured parts.

What is more, besides making a notable contribution to the national economy, Indian Railwaymen have helped to establish confidence in the competence of the Indian worker to mould metal in any shape and size for the use of man, be it for the manufacture of locomotives or machines for industries or steel monsters for other purposes.

PRAISE FROM TOP

I have referred only to some of the achievements of India's Railwaymen which I have myself witnessed. I have no doubt that wherever the Railways run, similar praiseworthy deeds have been performed by these valiant men.

We are by now well accustomed to hearing criticism of the Railways, in season and out, on various grounds. But sometimes praise and recognition come like a refreshing breeze from the highest quarter. Read these uplifting words:

"Things don't happen by themselves," said the Prime Minister, Jawaharlal Nehru once, "specially in complicated systems, highly complicated transport systems employing a vast number of human beings; things don't happen by themselves; things go wrong by themselves, but if they happen they have to be smoothly thought out, worked for with an enormous amount of co-opera-

tion. So that without going into any detail, you can well presume the enormous amount of hard work and co-operative hard work that has gone into this business and I think we as a people, we as a Government, have every reason to be proud of this work and to congratulate all those connected with our Railways for what they have done".

JUDGMENT UPON RAILWAYMEN

Of the million Indian Railwaymen, more than two lakhs toil at machines in workshops; lakhs more are spread along the track, packing ballast, driving spikes and watching the safety of trains; many thousands stand alert on levels and charts in cabins and controls, while a large force works in offices "behind the wheels that move on and on" to carry three and a half million passengers every day and an enormous tonnage of freight.

Some, but only a small fraction, of the million strong Railway force in contact with the public may go wrong some time, but should some misdeed of a few deserve wholesale condemnation?

Let not the occasional lapses of a few distort public assessment of the service rendered by Railwaymen as a whole. Let not our patrons who are also the proprietors of this vast national undertaking enlarge the small black spots and eclipse the truly large bright side of their Railways.

By and large, Railwaymen in India are a determined lot of hard working people, dedicated to duty in their endeavours to raise the motherland to heights conceived by Gurudev Rabindranath in these words (rendered in English):

"Where the clear stream of reason has not lost its way into the dreary desert sand of dead habit:

"Where the mind is led forward by Thee into ever-widening thought and action—

"Into that heaven of freedom, my Father, let my country awake."

Subjects of Moment

Absence of Casual Labour

Casual labour employed purely on day to day work are *workmen* under the Industrial Disputes Act 1947 and as such refusal on their part to work would amount to a strike.

The period of their absence should not be treated as *dies non*.

(R.B. No. E. 55 ST/1-32 dated 22-2-1956).

Notice of termination

No notice of termination of service is necessary where such termination is a disciplinary measure, after compliance with the requirements of Article 311(2) of the Constitution of India.

(R.B. No. E. 56 RG 6-9 dated 16-2-'56).

Railway Protection Force

The Railway Security Force has been redesignated as Railway Protection Force.

(R.B. No. E 53 PL 1/3 dated 13-1-'56).

Railway Territorial Army Unit Personnel

The personnel of the Railway T. A. Units will not be entitled to any Bounty or refreshment allowance during the training. They will, however, be entitled to free ration or ration allowance in lieu on the scale laid down for the corresponding rank of the regular army.

The period spent on actual training will be treated as *special casual leave*.

(R.B. No. E54 ML 3/7/3 dated 7-2-'56).

Accounts Department Recruits

The pay and allowances of new recruits to Accounts Department during the period of their training are correctly

chargeable to Demand No. 9 A—Labour Welfare.

(R.B. No. 55 B-4251 dated 16-2-'56).

Air Travel Allowance

In partial modification of Rule 239(A) of the Indian Railway Establishment Code, Volume I, the President has decided that, as an interim measure, the mileage allowances for air travel should be reduced from 1½ to 1 1/5 of the standard air fare.

(R.B. No. F (E) 56/AL 28/1 dated 13-1-'56).

Pay to Railway T.A. Units during training

The Government of India have decided to grant military pay only excluding Dearness allowance and Compensatory City allowance (if already included in their civil pay and allowances) for the period of their 30 days training in addition to the civil pay and allowances of railway employees who are members of the Railway Units of Territorial Army. Such personnel will, however, be entitled to receive such other allowances during this period as are admissible under the existing rules in the Territorial Army Regulations.

(R.B. No. E 54 ML 3/7/3 dated 9-1-'56).

Conversion of temporary posts into permanent ones, etc.

Temporary posts should be created only when an experiment is tried or where the work is, *prima facie*, of a temporary nature or where the quantum of work is expected to stabilise or be reduced as a result of special measures of simplification of work; and therefore whenever there is need for any additional post, it should be examined whether the justification is of a permanent nature, and if

so, the post should be created on a permanent basis after adequate scrutiny of the justification.

(R.B. No. E 55 CN 5/14/3 dated 11-1-1956).

Uniformity in staff recruitment matters

In connection with laying down uniform principles applicable to all Railways in the matter of recruitment, training and age limits for promotions, qualifying tests and avenues of promotion in respect of non-gazetted staff, the Board have decided to set up a permanent Standing Committee of Dy. General Managers (Personnel) of Indian Railways with the Director (Establishment), Railway Board as Chairman.

The Board desire that the Members should collect the problems of their railways and circulate to other General Managers and the Director (Establishment) for comment. A meeting may hereafter be held at some central place other than New Delhi to settle the issue finally. To assist the Dy. G.M.(P) to prepare his case, an Assistant Officer's post may be created, if necessary, for a period of 6 months for each Railway in consultation with the respective F.A. & J.A.Os.

(R.B. No. 356 PM 1/4/3 dated 18-1-'56).

Powers of Dy. C.O.S.

The powers vested in C.O.S. to class a work as *very urgent* for deciding to dispense with calling for fresh tenders may be exercised by Dy. C.O.S., in respect of tenders the estimated value of which does not exceed Rs. 1,000. In all such cases, full reasons justifying the course of action should be recorded.

(R.B. No. F(X) II-56/PW—7/1 dated 1-2-'56).

Long distance T.T.E's scheme

The scheme introduced in 1949 in connection with posts of special T.T.E's

created to man long distance bogies has been made permanent.

(R.B. No. 913-TG dated 20-1-'56).

Tenure posts

The President has decided that there is no objection to a non-gazetted post outside the cadre of regular service being declared as a tenure post (for a limited period) if the conditions so warrant. A correction slip to Establishment Code has also been issued.

(R.B. No. E 55-PM 1/8/3 dated 18-1-'56).

Anti-Corruption

The Board have decided that the designation of Anti-corruption Officer be changed to Vigilance Officer and that Anti-Corruption Organisation should henceforth be known as Vigilance Organisation.

(R.B. No. E(C)-55 RP/6 dated 7-2-'56).

Theft of Railway property by Railway staff

The recommendation of the Railway Corruption Enquiry Committee that drastic action should be taken against staff involved in theft of railway property has been accepted by the Board. They have further decided that in such cases no punishment less than dismissal or removal from service should be awarded without prior approval of the Heads of Departments concerned.

(R.B. No. E(C) 55 RP/25 dated 22-2-1956).

Re-employment of staff

Pending final decision, the President has sanctioned the continuance of the existing re-employment terms of retired staff upto 29-2-1956).

(R.B. No. E. 53 AP. 1/3/2 dated 31-1-56).

Leave to skilled artizans

The President has decided that skilled artizans who have not elected the CPC leave rules will be governed by the corresponding leave rules as applicable to Class III with effect from 11th July 1951, but cases where leave has been sanctioned and leave salary already drawn between 11-7-'51 and 12-3-'56 should not be reopened. This will, however, permit leave accounts being recalculated from 11th July 1951.

(R.B. No.ES/54 CPC/71 dated 12-3-'56).

Promotion to non-selection posts

Non-selection posts will be filled by promotion of the senior-most suitable employee, the suitability being determined by the authority competent to fill the post on the basis of records. Railway Administrations have also been authorised to prescribe refresher and promotion courses for various categories. (vide rules in Appendix II-A Establishment Code Volume I). With a view to consider the question of having uniformity in this respect, the Board have called for detailed information from all Railways.

(R.B.No. E 56 PM 1/12/3 dated 1-3-'56).

Ticketless travel

The existing arrangement of appointing one T.T.E., for every two coaches on one important train of each Railway is to be continued; but he should be periodically shifted to other important trains where overcrowding or ticketless travelling is particularly noticeable.

(R.B. No. 913-TG dated 2-3-'56).

Delegation of Powers

In order that the execution of schemes included in the Five Year Plan may not be delayed, for want of sanction of gazetted staff in time, the Railway Board have given large powers to the General Managers of the Railways.

The General Managers are authorised to create with the concurrence of the F.A. & C.A.O's., temporary Senior Scale and Assistant Officers' posts provided the cost of the post is covered by the provision made in the estimates in respect of gazetted posts and *provided the duration of the post does not exceed three years in any case.*

This delegation will apply irrespective of whether the estimate was sanctioned by the General Manager or the Railway Board.

The General Manager has also powers to alter an estimate provision by changing the category of the post provided etc., provided that the post is not in excess of the senior scale, the time limit of 3 years is observed, and the cost of the post can be met from within the total provision made in the estimate for gazetted posts. New posts can also be created subject to these conditions for any scheme in which provision for a particular post had not previously been made.

The provision of gazetted posts will be verified by FA & CAO at the estimate stage itself, so that subsequent scrutiny of the justification at the time of the actual creation of the posts would be an easy matter. In regard to surveys, however, the G.M.'s powers are limited to sanctioning (a) Class II posts required for over one year and (b) Class I posts even if the period is less than a year.

(R.B. No. E 56 PO 3-2 dated 7-3-'56).

Delivery of small consignments at consignee's houses

At a recent examination of the Railway Board by the Estimates Committee of Parliament, it was suggested that small consignments should compulsorily be booked for delivery at the consignee's houses in some big Cities. The Board have desired the Railways to discuss the subject at the next meeting of the Zonal Railway Users' Consultative Committee and their views together with the com-

ments of the Railways be furnished to the Board at an early date.

(R.B. No. 1439-TG/55 dated 7-3-1956.)

Railway Services (conduct) Rules

The following extracts from the Railway Services (Conduct) Rules coming into effect from 8-2-56 may be of interest to readers:—

5. Connection with the Press or Radio

(1) No Railway Servant shall except with the previous sanction of the Government own wholly or in part, or conduct or participate in the editing or managing of, any newspaper or other periodical publication.

(2) No railway servant shall except with the previous sanction of the Government or any other authority empowered by it in this behalf, or in the *bonafide* discharge of his duties, participate in a radio broadcast or contribute any article or write any letter either anonymously or in his own name or in the name of any other person to any newspaper or periodical;

Provided that no such sanction shall be required to such broadcast or such contribution if it is of a purely literary, artistic or scientific character.

6. Criticism of Government

No railway servant shall in any radio broadcast or in any document publish anonymously or in his own name or in the name of any other person or in any communication to the Press, or in any public utterances make any statement of facts or opinion:—

(i) which has the effect of an adverse criticism of any current or recent policy or action of the Central Government or State Government; or

(ii) which is capable of embarrassing the relations between the Central Government and the Government of any State; or

(iii) which is capable of embarrassing the relations between the Central Government and the Government of any foreign State:

Provided that nothing in this rule shall apply to any statement made or views expressed by a railway servant in his official capacity or in the due performance of his duties assigned to him,

14. Insolvency and Habitual Indebtedness

A railway servant shall so manage his private affairs as to avoid habitual indebtedness or insolvency. A railway servant who becomes a subject of a legal proceeding for insolvency shall forthwith report full facts to the Government.

15. Moveable and Immovable and valuable property

(i) No railway servant shall except with the previous knowledge of the Government acquire or dispose of any immovable property by lease, mortgage, purchase, sale, gift or otherwise, either in his own name or in the name of any member of his family;

Provided that any such transaction conducted otherwise than through a regular or reputed dealer shall require previous sanction of the Government.

(ii) A railway servant who enters into any transaction concerning any moveable property exceeding Rs. 1,000/- in value, whether by way of purchase, sale or otherwise, shall forthwith report such transaction to the Government.

Provided that no railway servant shall enter into any such transaction except with or through a regular or reputed dealer or agent or with the previous sanction of the Government.

Explanations: For the purpose of this sub-rule, the expression "moveable property" includes *inter alia* the following properties viz.,

(a) Jewellery, Insurance Policies, Shares, Securities and Debentures;

(b) Loans advanced by such railway servants whether secured or not;

(c) Motor cars, motor cycles, horses and other means of conveyances;

(d) Refrigerators, radios and radio-grams.

(iii) Every member of Class I and Class II services shall on first appointment in railway service and thereafter at intervals of 12 months, submit a report in such form as the Government may prescribe in this behalf of all immoveable property, acquired or inherited, by him or held by him on lease or mortgage either in his own name or in the name of any member of his family; or in the name of any other person.

(iv) The Government or any authority empowered by it in this behalf may, at any time, by general or special order, require a full and complete state-

ment of such moveable or immoveable properties held or acquired by him or by any member of his family as may be specified in the order. Such statement shall, if so required by the Government or by the authority so empowered, include details of the means by which or source from which such property was acquired.

* * *

[Note: The term "family" includes, the wife, child or step-child of a railway servant whether residing with him or not and in regard to a woman railway servant, the husband residing with her and depending on her; and any other person related whether by blood or by marriage to the railway servant or to such railway servant's wife or husband and wholly dependent on such railway servant, but does not include wife or husband legally separated from the railway servant or a child or a step-child who is no longer in any way dependent on him or her or of whose custody the railway servant had been deprived by law.]

Personnel

Sri M. L. Mukerjee, Officiating Dy. Director, Finance (Expenditure), was granted leave on average pay for two months from 2nd January 1956.

Sri P. N. Raina, Senior Accounts Officer, Northern Railway, has been appointed as officiating Dy. Director of Finance (Expenditure), Railway Board, from 14th February 1956.

Shri A. Yussif, C. C. S., Western Railway, proceeded on leave after retirement from 29-2-1956.

Shri P. L. Colaco, R. T. S., Ajmer, is to officiate as C. C. S., Western Railway.

Shri S. C. Chatterjee is posted as R. T. S., Ajmer.

Shri P. C. Mathew, Dy. COPS, Western Railway is transferred to Railway Board as Joint Director, Traffic.

Shri B. M. Kaul, S. T. O., is transferred as Dy. C. O. P. S., Western Railway.

Sri B. K. Kuppaswamy, Dy. Chief Engineer (General), Southern Railway, has been promoted as Engineer-in-Chief, Constructions, Southern Railway.

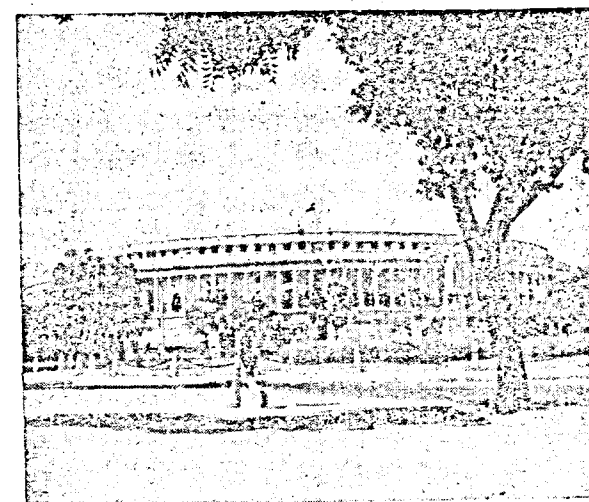
Sri B. Madhavan, Senior Accounts Officer, Southern Railway, Perambur, has been transferred as Regional Accounts Officer, Southern Railway, Mysore.

Sri H. Ramamoorthy, Regional Accounts Officer, Southern Railway, Mysore has been transferred to Madras as Senior Accounts Officer (Planning).

Sri H. Ramamoorthy, Senior Accounts Officer (Planning), Southern Railway, has been transferred as Regional Accounts Officer, Madras, with special duty in connection with Divisionalisation.

(Continued on page 21)

Railways in Parliament



LOK SABHA :

While replying to the various criticisms and suggestions made by the Members of Parliament in their discussions on the railways' Demands for Grants, the Deputy Minister for Railways, Sri O. V. Alagesan referred to the criticism made regarding the administration of railway schools and said that that he had found many of the railway schools better in regard to the accommodation, equipment, staff and building facilities. He would, however, do everything possible to see that the schools were really useful and got facilities for increasing accommodation etc. He further stated that proposals for opening of hostels have been received from all the Railways and there would be one hostel on each of the seven Railways, the construction therefor being begun in the next financial year.

Mr. Alagesan said that a Committee of experienced Educationists would inspect the railway schools and look into all matters connected with the running of the railway schools. The Railways propose to have some extra

curricular technical course in the railway schools which would give additional benefit to the children studying there.

Regarding overcrowding in the Bombay section, he said that a Committee is going into the question and as soon as their report was received, the Railway Board would have the matter looked into.

The Deputy Minister said the question of air-conditioned coaches for the lowest class of passengers had been raised by some Members. There was no need to have any misgivings in the matter. He asked the Members to wait until the 2nd October '56 when they would see the first air-conditioned third class train steam out from Delhi Station in all the three directions, Bombay, Calcutta and Madras.

While replying to the various points raised in connection with the Appropriation Bill, Mr. Lal Bahadur Shastri, explained the delay in bringing before the house the demands for excess grants for 1950-51, 1951-52 and 1952-53. He said the question of procedure regarding

submission to Parliament of demands for excess grants had to be settled in consultation with the Ministries of Law and Finance and this could not be finalised until the Public Accounts Committee report on the excess grants for 1950-51 was received in July last year. The present presentation was a new procedure followed on the recommendations of the Public Accounts Committee. The Appropriation Bill presented by the Railway Minister for the issue of Rs. 45,43,08,000 out of the Consolidated Fund of India for the year 1955-56 was passed by the Lok Sabha on the 14th March.

Departmental Tests

Mr. O. V. Alagesan, Dy. Minister for Railways speaking in the Lok Sabha in connection with the Railway Budget debate rejected the demand for the abolition of departmental tests for the accountancy staff for promotion purposes on the ground that the efficiency of the administration would suffer if such tests were eliminated.

Divisional System

In reply to a question by Mr. T. V. Vittal Rao, Mr. O. V. Alagesan, Dy. Minister for Railways stated on the 14th March that it was Government's idea to introduce divisionalisation in all the Railway Zones as quickly as possible. The full-fledged divisional system has been introduced on the Secunderabad Division from February 1956 and on the Bombay Division from March. It was expected that the divisionalisation of the entire Central Railway would be completed by about the end of November 1956.

Mr. Alagesan told Mr. V. Boovarahaswamy that the divisional system would ensure greater efficiency in operation. It was difficult to say now whether the system would entail any decrease in the number of Railway Officers. The work

of all the Officers would be co-ordinated by the Divisional Superintendents.

In regard to providing Divisional Headquarters in Travancore-Cochin, Mr. Lal Bahadur Shastri, Railway Minister stated that the representation received in that connection was being considered by the Railway Board.

Increase in Line Capacity

Mr. Lal Bahadur Shastri stated on 23-3-1956 that it would be possible to move more goods on the North Eastern Railway during the current year with considerable increase in the line capacity and the availability of more metre gauge wagons. He indicated that 1,02,000 wagons had been loaded last year as against a demand of 1,07,000 wagons. He stated further that the line capacity would be considerably increased during the current year and enough metre gauge wagons would also be made available.

RAJYA SABHA.

Need for a better Research Organisation in Rlys

In the course of the debate on the Railways Appropriation Bill on the 16th March, Sri Pandit H. N. Kunzru stated that it was time that the Railway Ministry took into consideration the vital and inescapable need for a better research organisation than they had at the present time. He particularly pointed out the very low expenditure of Rs. 16 lakhs provided for in the Railway Budget for research while the earnings amounted to Rs. 250 crores. He stated that the Railways treated research as if it were a secret and confidential matter on which no indication was to be given to the Members of Parliament. This was completely a wrong idea. The figures relating to wagon turn round should also be published as it was an important index of the railways' efficiency. There

should also be no delay in the publication of Monthly Statistics.

(We have repeatedly brought to notice in our previous issues from time to time the need for curtailing rather long delays in the publication of these statistics.—*Editor, R.A.*)

Mr. Kunzru speaking on the strength of the Railway Board emphasised the need for separating Members dealing with the Mechanical Engineering and Civil Engineering and similarly also the portfolios of Transportation and Commercial Traffic.

In his reply to the debate, Mr. Lal Bahadur Shastri referred to the criticism that freights were increased even though the Freight Structure Enquiry Committee had yet to submit its report. The structure, he said, had not been touched. What had been done was only a flat increase of 6½%. Mr. Shastri said that the Railway Ministry had an organisation of methods division as in other Ministries. It was working under a similar division attached to the Cabinet Secretariat. It was proposed to establish such divisions at the level of various Railway Administrations as well.

Mr. Shastri expressed gratification at the agreement arrived at between the two wings of the Railway Federation. He said that it was a sound principle to have only one body to speak on behalf of workers. He appealed to the members of Parliament not to patronise sectional bodies on the Railways which had a tendency to weaken the general body of workers as a whole. He was sure unity among the workers would last longer and take a prominent shape and there would ultimately remain only one Union on each Railway and one Federation at the top.

Railcars for South

The Deputy Minister for Transport announced on the 15th March in the Rajya Sabha that two railcars had been put on the Delhi suburban lines and rail cars were also proposed to be introduced on the Southern Railway. After studying the results on these Railways, the use of railcars would be extended on other railways as well. These cars were introduced where overcrowding was too much. It was also further announced that 12 M.G. railcars were being introduced on the Northern Railway.

PERSONNEL

(Continued from page 18)

Sri D. A. Padmanabiah, officiating Senior Accounts Officer, Southern Railway, Madras has been transferred as Senior Accounts Officer (workshops), Perambur from 23rd February 1956 till 2nd April 1956 when he went on leave.

Sri S. Venkataraman, officiating Asst. Accounts Officer, Southern Railway, Madras, has been transferred to Golden Rock as Asst. Accounts Officer, Workshops.

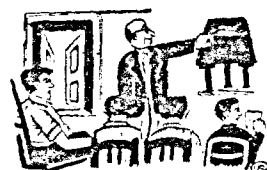
Sri M. Ananthasayanam Iyengar, Deputy Speaker, Lok Sabha, was unanimously elected as Speaker.

Sri V. Ramachandra Rao, officiating Asst. Accounts Officer, Southern Railway, Golden Rock has proceeded on leave on average pay prior to retirement.

Sri V. Rajagopalan Senior Accountant Southern Railway, Madras was transferred to Integral Coach Factory and promoted as Asst. Accounts Officer there from 1-3-1956, vice Sri K. Ramachandran granted leave for two months.

Sri. Hukum Chand was elected Deputy Speaker, Lok Sabha.

Help the Railways to Serve You Better



Readers Forum

[One of our subscribers has sent us a long note on some changes which in his opinion, are over-due in various spheres of Railway Administration. We have, however, extracted only a few from his note as indicative and trust that they will receive such consideration as the Railway Board may find feasible.

The requests hereunder cover a wide range and some at least, in our opinion, are very radical.

Editor, R.A.]

Free Pass Rules

(a) According to present Rules, a Railway employee is not eligible for passes for his father and mother (when father is alive) even though they are solely dependent on him. Similarly, he is not eligible for passes for more than two dependents or five in all including employee's own children, if a dependent is included in his pass. In view of the Indian Joint Family system, these restrictions require to be removed.

(b) In regard to the availability by mail trains of passes and PTOs, the present limit of 500 miles should be reduced to a very much lower figure if it cannot be removed altogether. In any case, pass or PTO holders may be permitted to travel by mail on payment of the difference of fares, if any, as in the case of other passengers.

Leave Rules.

There are at present nearly half a dozen varieties of Leave Rules in existence on Indian Railways with the result that there is much confusion amongst the staff as well as the Establishment Sections of Railway Offices. The Railway Board should standardise the Leave Rules for all categories of staff. The following changes are suggested in this connection :—

(a) All staff can be given nine months LPR or whatever is due up to that limit after the age of 55 years.

(b) Limit of accumulation of full-pay-leave may be raised to six months from the existing limit of four months.

(c) When an officiating employee proceeds on Leave on Average pay, even though it be for a very short period, the leave-allowance is calculated on the basis of an average for a long period. This involves a lot of labour without much advantage to the Railway. It is suggested that the employee may be allowed the same pay as what he drew immediately prior to his proceeding on LAP or privilege leave, provided it can be certified that he would have continued to officiate in the said post had he not proceeded on leave. Such alteration would not only save considerable labour and time involved in calculation and check of average pay statement both in districts and Accounts Offices ; but it would also amount to liberalising service conditions of staff.

Medical Treatment.

At present dental expenditure is not at all re-imbursed to the employee. Since tooth ailments have become very common of late, the Railway should reimburse expenses in connection with this from its revenues or from Staff Benefit Fund.

Recruitment

So far as clerical posts are concerned, it is not fair just to discriminate between matriculates as all matriculates can pick up a clerical job without any difficulty. There is also no need to hold any com-

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READERS' FORUM

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petitive examination for appointment to a clerical cadre.

Departmental Examination in the Accounts Department

The primary objective of these examinations is to ensure adequate knowledge of all codes, Manuals and other Circulars, so that the Accounts staff may correctly apply the Rules in their day to day work. This object can be well achieved by making the following changes :

(a) The pass-mark in all subjects should be reduced to 40% as in the case of the audit and other Departmental Examinations.

(b) Those who pass in any subject may be exempted from appearing in it again in view of their having acquired some knowledge in the subject ; or in the alternative the exemption marks may be reduced to 50%.

(c) Since more emphasis is being laid on Hindi instead of English in all stages, a paper on Precis Writing and Drafting in Appendix II Examination may be abolished,

(d) A candidate should be allowed an unlimited number of chances to appear for the examination.

Hindi in Selection Boards

Candidates should be given freedom to reply in Hindi to the questions put up to them by Members of the Selection Board, as it is seen that several persons who have good knowledge of a subject cannot reply during the interview in English with the result that they are subjected.

Incidence of cost of assisted and private sidings

Recently, an industrialist in his address to the shareholders at a general

body meeting of the Company, stated that the Railway Board have decided that the Code rules regarding the incidence of cost of construction of assisted sidings (e.g., super grade work within Railway limits to be borne by the Railway) would be followed in future and that the temporary directive that all sidings for firms should be paid for entirely by the firms, in view of the ways and means position of the Government of India, has since been removed. But no orders to this effect appear to have been received from the Railway Board. The Railway Board may perhaps make the position clear by issuing the necessary order to the Railways.

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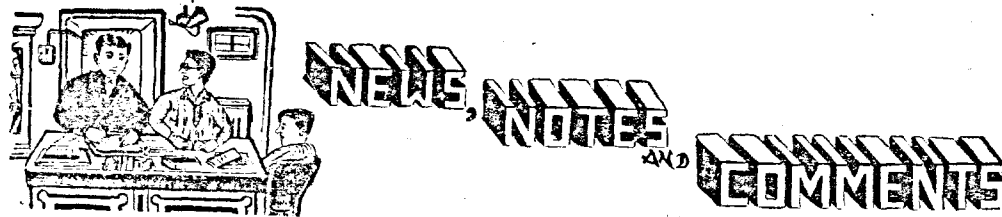
Assistant Editor :

Sri M. C. KRISHNAN

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Need to reduce costs of construction of buildings

The Union Minister for Works, Housing and Supply, Mr. Sardar Swaran Singh has called upon the various States to give a fair trial to the recommendations of Building Research Institutions for reducing construction costs without impairing efficiency.

Recruitment of Cost Accountants for Railways

The Railway Service Commission have advertised for 8 posts of Cost Accountants in scale Rs. 200-350 for all Railways. In a note to this advertisement, the Commission have stated that those who have applied for this category in response to the previous employment notice of the Commission need not apply again and that their applications would be duly considered.

The decision of the Railway Board to recruit qualified Cost Accountants for the Railways in the initial Accountant's grade of Rs. 200-15-350 is no doubt a step in the right direction, particularly at a time when the workshops are being modernised in the Second Five Year Plan. Fourteen posts were advertised by the Railway Service Commission, apparently two for each Railway, but it appears that only six were actually appointed, as enough number possessing the prescribed qualifications and experience were not forthcoming as a result of the advertisement. This only indicates that qualified Cost Accountants with some experience are in great demand by the private sector in the industrial field, but this need not be a source of disappointment to the Railway Board. Railway Accounts and Railway Work-

shop Accounts are specialised and qualified cost accountants directly from the open market may require about two years' training before they can be considered useful for the purpose for which they are recruited. 8 more cost accountants (i.e., the balance left over in the last advertisement for 14 posts) have again been advertised, relaxing the general and other qualifications but retain the main cost accounting qualification, and there is no doubt that this time the response would be much better. However, it occurs to us that it would be a better proposition if existing Railway Accounts staff, particularly Appendix-III qualified men, were encouraged to qualify themselves as Cost Accountants by passing examinations of the Indian Institute of Cost & Works Accountants or of the English Institute, by allowing them a special pay of, say, Rs. 50/- per mensem. Such qualified persons may be posted to Workshops and also Operating Accounts branches, and they will, in turn, be able to train up men in the subordinate ranks. This method will provide that the cost accountants possess the requisite background of Railway Accounting and organisation generally.

Provident Fund Benefits.

Mr. Lal Bahadur Shastri announced recently that privileges, like full provident fund benefits and grant of special contribution to the P.F., would be extended to all temporary employees as soon as they completed three years of service, with retrospective effect from the date of completion of one year ser-

vice. He also stated that the staff that have been officiating in higher grades for three years or more should be granted retirement benefits as if they had been confirmed in their posts.

Inauguration of full Divisional System at Secunderabad on Central Rly.

The Chief Minister of Hyderabad State, Sri B. Ramakrishna Rao, while inaugurating the full divisional system on the Central Railway at the railway recreation grounds at Secunderabad on the 21st February 1956 operated upon a miniature electric lever which showed the whole administrative set up and cut it out simultaneously exposing the new organisational set up, thus symbolising the introduction of the full divisional system. In his welcome speech, Sri M. N. Chakravarthy, General Manager of the Central Railway, stated: "the need for articulated and economically optimum zones for the administration of railways had been universally recognised and when the integration of railways took place in 1950, it enabled the introduction of a number of operational reforms and gave a flexibility of routes which had helped the railways to meet to the maximum extent possible the ever growing demands of traffic." He stated that the volume of traffic carried and operational efficiency in the Secunderabad Division had both increased. The net ton miles, a true measure of the volume of traffic carried, rose from 652 millions in 1950-'51 to 990 millions in 1955-'56 whilst the net ton miles per wagon day, the vital index of operational efficiency, had grown during the same period from 472 to 586.

With the rapid industrialisation and the progressive development of our country, the General Manager continued, the Central Railway would have to meet the growing demands of traffic. This responsibility naturally enjoined the maintenance of the highest standard of opera-

tional efficiency notwithstanding the pressure that might fall upon it.

According to the original targets, Railways are being called upon to carry an additional 51% of goods traffic and an additional 30% of passenger train miles. This heavy traffic could be satisfactorily handled only with large scale provision of additional works such as doubling of lines, provision of alternative routes, new stations, improved signalling and the like. With the diminution in the allotment in the Second Five Year Plan for railways from Rs. 1480 crores to Rs. 1,125 crores, cuts would have to be applied in all directions and railways in the coming years would have to face a very serious situation with the paramount need for the utmost economy.

Under the divisional system, the local unit would be administered by a Divisional Superintendent of sufficiently high rank who would have with him a number of Executive Officers specially qualified in operation, personnel, power, carriage and wagon, commercial, engineering, electrical, signal and Tele-communication and accounts matters. He would be responsible for heads of Departments for the efficient discharge of the obligations placed on the local Officers of the various technical departments and the maintenance of high standards of technical efficiency besides being responsible to the General Manager for the overall efficiency of the Division. The Divisional Superintendent would function within the Division as a Regional Manager armed with adequate powers to take decisions on matters connected with the working and development within the division. Concluding, the General Manager expressed the hope that with the administrative reform now being embarked upon, Railwaymen would spare no pains to raise the standard of efficiency to bridge the gap that

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might exist between the demand and supply of transportation in the country.

Despatch of first seven coaches out of Integral Coach Factory.

On the 22nd February 1956, the first seven coaches assembled by the Integral Coach Factory, Perambur, glided out of the shops on their journey to the Central Railway Workshops for furnishing. At an impressive gathering arranged for the purpose, the Chief Administrative Officer (R) pointed out that the term "magnificent factory" given to it by the Prime Minister on the 2nd October last while throwing open the Factory for production, had been fully proved by the concentrated and co-operative team efforts of the various staff and Officers of the Factory. In fact, it was pointed out, that the Factory had exceeded its target by sending out the first seven coaches in so short a time after starting production.

Quarterly Railway season tickets

Quarterly season tickets both suburban and non-suburban are issued with effect from 1st April 1956 on the Northern, Eastern, South-Eastern and the old O.T. Section of the North-Eastern Railway. These tickets will be charged for at the rate of 2½ times the rates of monthly season tickets.

New Giant Soviet Atomic Machine.

Russia is building a ten billion volt machine for studying the atomic nucleus which can accelerate protons to virtually the speed of light.

PRAVDA devoted a whole page to the giant machine called a Synchrophasotron which is being built in the Soviet Academy of Sciences.

The Synchrophasotron has an electromagnet weighing 36,000 tons. It will be operated entirely by remote control as it gives off dangerous radiations. It

will be completed shortly and will be used for fundamental research.

(Moscow Radio News, 18-3-'56).

"Oxygenator"

An inexpensive machine which allows surgeons to stop a patient's heart and operate on it for 30 minutes has been invented by three Melbourne doctors.

The machine, called an "Oxygenator" acts as a heart by pumping blood out of the patients, passing oxygen through it and then pumping the blood back again.

One of the doctors, Dr. Trevor Currie, anaesthetic specialist at the Royal Melbourne Hospital, said that the machine could operate for 30 minutes without the least danger to the patient.

But he emphasised that the machine was still only in the experimental stage. It could be produced for some hundreds of pounds compared to the thousands of pounds required for similar machines invented in other parts of the world.

(Hindu).

The New Company Law

A New Company Law has come into force from 1st April 1956. The provisions are mainly intended for the security of the interests of the shareholders. The main features are restrictions in regard to the appointment and remuneration of Managing Agents and appointment of relations of Directors in the Companies under their control.

Cinema on Wheels

The Cinema coach which was attached to the ECAFE Sub-Committee's special train was built for the regular exhibition of films to third class passengers on a selected train on various aspects of the Five Year Plan and on other subjects of an educative nature. The experience gained by the use of this

coach will decide its extension or otherwise on other trains and railways.

Levy of Supplementary Charges

With effect from 1st April '56, a supplementary charge at the rate of one anna in the rupee on all freight charges on Goods and Coaching Traffic will be levied on all Indian Railways both in local and through booking except on the freight charges for

(1) Fodder, Manures, Khadi, Newspaper, Newsprint, Books and Grains and pulses, (excluding grains and pulses NOC).

(2) Passenger Traffic.

(3) Railway materials and stores including Railway coal.

(4) Military Traffic, freight on which is paid by Military Credit Notes.

Appendix II-A Examination

The second All-India Examination for Appendix II-A candidates will be held all over India at various centres from the 25th April 1956 to 28th April 1956.

Press Conferences on Southern Railway

The General Manager, Southern Railway, held a Press Conference on the 26th March 1956 when he elaborated the various avenues of activity of the Southern Railway and forestalled the scope of improvements to be effected in the near future. He laid particular stress upon the very live questions of ticketless travel; overcrowding in trains; express goods train service; electrification of lines, etc. He mentioned that the electricity required for use on the extension of electrification scheme to Villupuram had to be obtained from Madras Government and the matter was being discussed with that Government. It was hoped that an early settlement would be possible and that the scheme would be taken up immediately thereafter and completed

within two years. It was mentioned that 400 steel shell coaches for metre gauge have been imported from abroad of which more than a third has already been put on line and the balance was expected to be completed and brought into use by the end of July 1956.

Out of the 6 electric multiple units ordered for M. G. from Italy, 3 had already been received and each such unit comprised of 4 coaches with a total seating capacity of 306 passengers. It was expected to bring into use one of those sets during the "Railway Week" and the others soon after. The General Manager, while speaking on the impending divisionalisation of the Southern Railway, stated that in lieu of the three regions and the various districts now in force, there would be about 8 divisions each with autonomous powers headed by a Divisional Superintendent who is virtually a part of G.M. on the spot. The Headquarters of the various Departments would control only broad policy. All the Departments in one division would have to operate on single files and thus reduce routine correspondence. The Headquarters Offices would deal only with the Divisional Superintendents and not with their subordinate Officers in the divisions.

There was another Conference held by the Public Relations Officer on 29th March where arrangements in connection with the "Railway Week" from the 10th April 1956 to 16th April 1956 were discussed. The important feature of this celebration on the Southern Railway was said to be the issue of special number of the SOUTHERN RAIL NEWS; exhibition of films connected with Railways at big junctions like Egmore, Madurai, Bezvada and Bangalore City; sports and distribution of sweets at bigger colonies and picnics at smaller colonies for railway employees' children; distribution of business reply cards at several big stations requesting the public to return them with their suggestions for improved working of the

railways; and the inauguration of "BREDAs" coaches on the metre gauge section.

* * *

American Experts for Indian Railways

The Government of India and a U. S. Engineering Firm (Messrs. Sanderson and Porter, New York firm of consultants) have signed a contract, by which the firm is to undertake a study to determine the most practical way for equipping India's railway system to cope with its expanding traffic load.

The contract, which extends over a period of 20 months, provides for the sending of an 18 man team of U. S. Engineers to India to study present and future problems of Indian Railways. Dollar cost of the study, the experts' salaries and their passage to and from India—will be met by the U. S. International Co-operation (Point-4) Administration, which is represented in India by the U.S. Technical Co-operation Mission (TCM).

The U. S. Government has been co-operating with India in railway rehabilitation since 1954. Of the U. S. funds thus far committed to the programme of economic development in India \$ 38,875,000 (Rs. 18.66 crores) has been for railway rehabilitation. This sum includes the purchase abroad of 100 new steam locomotives and some 8,800 new goods wagons.

Mr. G. L. Mehta, India's Ambassador to the U. S. when signing the contract, said:

"Since India's independence, increased movement of goods traffic has necessitated an urgent programme of rehabilitation and re-equipment. As part of the First Five Year Plan of economic development, the Indian Government has spent as much as \$ 850 million in the purchase of locomotives, rolling stock and other measures of improvement of the system."

"However, the growing pace of economic activities in the country will increase the pressure on the Indian railway system, which is already congested. The Government of India proposes to double the rate of investment in railways as part of its Second Five Year Plan of economic development. The studies undertaken under the terms of the contract that is concluded today will assist the Government of India in determining the most practical methods by which the requisite expansion of the transportation facilities can be achieved in a most efficient manner".

(Adapted from the American Reporter of 29-2-1956)

* * *

Railway Rehabilitation Project

The Railway Rehabilitation Project provides \$ 14,000,000 (about Rs 7 crores) for the procurement of 140,000 tons of rails and other steel railway material and brings to \$ 24,000,000 the U. S. commitment this year, \$ 10,000,000 having been allocated in January.

The entire amount is earmarked for two purposes; rehabilitation of tracks and steel for the manufacture of rolling stock within India. This represents a shift from the purchase of fabricated rolling stock to the purchase of fabricated steel products which will be manufactured into rolling stock in India. Purchase will be made from both private and publicly owned sources. Hitherto the United States has spent \$ 38,500,000 outside of India for the purchase of rolling stock, including 8,730 freight cars and 100 locomotives, about half of them from the United States.

(American Reporter 10-3-1956)

* * *

Divisionalisation on Railways

The Railway Ministry published on the 28th March the Divisional System of Administration which will be introduced

in the Central, Southern, and Western Railways.

The Central Railway will be divided into 7 divisions with Headquarters at Secunderabad, Bombay, Bhusawal, Nagpur, Sholapur, Jubbulpore and Jhansi. The first two Divisions were set up in February and March respectively.

The Southern Railway is proposed to be divided into 8 Divisions with Headquarters at Madras, Vijayawada, Hubli, Guntakal, Madurai, Mysore (or Bangalore), Olavakkot and Tiruchirappally.

The Western Railway is to be divided into 7 Divisions with Headquarters at Bombay, Baroda, Kol, Jaipur, Ajmer, Rajkot and Bhavnagar.

Each Division will be under a Divisional Superintendent, who will function in his sphere more or less as the General Manager does for the entire Zonal Railway. The unified control is a feature of the Divisional pattern which at present obtains on the Northern and Eastern Railways.

* * *

Statistics of Indian Railways

1. *Gross Earnings*: The approximate Gross Earnings of Indian Railways during January '56 amounted to Rs. 25.75 crores while the actuals for Jan. '55 were 24.28 crores. The total approximate Gross Earnings from 1st April '55 to 31st Jan. '56 were Rs. 254.44 crores as against the actuals for the corresponding period of 54-55 of 230.50 crores; i.e., an increase of 23.94 crores or 10.4%.

2. *Goods Tonnage*: The number of tons of merchandise lifted during the month of Jan. '56 was 6189000 on the B. G. and 1974000 on the M. G. These show a decrease over December '55 figures of 7.57% and 1.60% respectively.

The number of tons lifted from 1st April 1955 to 31st January 1956 was 63,315,000 and 16,627,000 on the B. G. and M. G. respectively, showing an increase over the corresponding period of 54-55 of 6.31% and 14.7% respectively.

3. *Wagon Loadings*: During Jan. '56, the number of wagons loaded with goods Traffic was 439,307 and 289,980 on the B. G. and M. G. respectively which showed an increase of .29% and 3.56% respectively over the figures for December '55.

The total number of wagons loaded from 1st April '55 to 31st January '56 was 40,22,973 and 23,60,492 on B. G. and M. G. respectively which showed an increase of 6.93% and 10.5% respectively over the corresponding period figures of 1954-55.

These cumulative loadings on the B. G. are attributable to increases in non-Government Railway coal and coke, oil seeds, raw cotton, jute manufactured, sugar-cane, pig iron, manganese ore, and other ores, off-set to a certain extent by short-loadings under jute-raw and miscellaneous small traffic. Similarly, the cumulative loadings on the M. G. are attributable to heavier loads under public coal and coke, oil seeds, cotton manufactured, jute manufactured, sugar-cane, pig iron, other ores and manganese ores, off-set to a certain extent by lesser loadings under non-Government Railways coal and coke and iron ore.

* * *

Estimates Committee on Railways

Some of the important suggestions and recommendations of the Estimates Committee on the Ministry of Railways are given hereunder:—

Staggering the Office hours at Calcutta, Bombay and Madras in consultation with the State Governments and the local business Offices, with a view to see the overcrowding in suburban trains.

The Committee are in agreement with the contemplated abolition of II class when adequate sleeping accommodation would be made available in third class and hope that it would be possible to implement it without undue delay.

The Committee attached great importance to the question of operating efficiency at the present critical stage of our national development and as loss of transport that may occur due to inefficient operation cannot be made good.

There is considerable scope for improvement in wagon turn-round which is a composite index depending upon a large number of factors such as the average detention in yards, average speed of trains, time for loading and unloading etc. No efforts should be spared to bring about the improvement.

The Committee observe that a detailed control is being exercised in the Railway Board's Office on the operation of the railways and feel that this should continue at present. The control may be progressively relaxed as the position improves with the improvement in the railway equipment and facilities. The Committee stress that different operating statistics that are submitted at various levels should be carefully scrutinised and prompt remedial action taken, wherever necessary.

A detailed investigation should be undertaken by each of the Administrations regarding the causes of heavy detentions in the marshalling yards and remedial measures taken in the shape of (a) providing additional yard facilities; (b) providing shunting facilities; (c) strengthening yard staff and (d) improving the line capacity in the adjoining section as considered necessary.

The Committee feel that extra facilities required to minimise detentions in marshalling yards should be incorporated in the Second Five Year Plan wherever this has not been done.

The Committee consider the proposal of the Railway Ministry to introduce a Wagon Chaser Organisation on a fairly big scale as a step in the right direction and envisage a substantial reduction in detention to stock by the creation of a well knit organisation. There should be

wagon chasers in sufficiently high grades in every important yard and it will be their duty to keep a constant watch over the movements of wagons. They should be given clear and well defined targets of reducing the overall detentions by at least 10 to 20 per cent to begin with and work should be judged by the results produced. Those who fail to produce results should be replaced by better personnel.

The Second Five Year Plan will have to provide for (i) removing chronic overcrowding on the passenger and suburban trains, (ii) providing for additional rolling stock and facilities for loading of coal and other goods and (iii) wiping out the arrears of track renewals (over 7000 miles).

Adequate facilities should be provided for training new recruits to railway service.

Judicial financial control should be exercised on the expenditure to be incurred by the Railways during their 2nd Five Year Plan.

The Committee recommend that the suggestion of the Indian Railway Enquiry Committee, 1947, with regard to the examination of the gauge question by a small Technical Committee should be implemented early. The Technical Committee would examine the relative merits of the conversion of the existing metre gauge into broad gauge or doubling the metre gauge track. If as a result of detailed investigation it is found advantageous to have a uniform gauge, future construction in the country should as far as possible be confined to broad gauge.

In order to direct and control the huge expenditure that would have to be incurred on the 2nd Five Year Plan it will be necessary to strengthen the administration at various levels including that of the Railway Board in an adequate measure.

There will have to be a steady and concentrated drive at high level to bring about an all round improvement in the operating efficiency so that the available assets of the railways, limited as they are, are put to the best use.

ECAFE Railway Sub-Committee's Deliberations.

Delegates from several ECAFE region countries assembled at Fairlie Place, Headquarters of the Eastern Railway on the 14th March 1956 to undertake a ten day tour of India prior to the fourth session of the Railway Sub-Committee of the ECAFE Inland Transport Committee in New Delhi from 25th March '56. The delegates were welcomed by Sri S. Sarangapani, General Manager of the Eastern Railway who also gave a brief outline of the electrification scheme of the Eastern Railway. M. S. Ahmed, Chief of Transport, ECAFE thanked the Government of India and the Railway Board for arranging the tour. On behalf of the Delegates, Mr. Sway Abananda, Superintending Signal and Telegraph Engineer of the State Railway of Thailand declared that the common bond of railways was "service" which presented national boundaries. Mr. A. Hamid Ghani, Chief Mechanical Engineer of Pakistan Railways said that he was looking forward to see the progress in India of the manufacture of locomotives.

The itinerary of the Sub-Committee included sight seeing, in and around Calcutta, visits to Chittaranjan Locomotive Works, Tata's Steel Works, Vizagapatam Port, Integral Coach Factory, Perambur, Railway Research Sub-Centre, Lonavla, Railway workshops at Bombay and Railway Staff College, Baroda. The tour was conducted in a special train which returned to New Delhi on March 24, in time for the session of the ECAFE Railway Sub-Committee. This session concluded on the 31st March '56.

The Special train was specially made containing Air-conditioned coaches, a restaurant car, an observation car and a cinema car. In addition to the railway institutions referred to ante, the Sub-Committee visited also the Tata Iron and Steel Works at Jamshedpur, Sindri Fertilizer Factory, and other plants in the Damodar Valley area near Calcutta and the big hydro-electric projects at the Bakhra Dam.

Of major interest to the delegates during their session in Delhi were certain practical problems connected with the modernisation and better utilisation of rolling stock on Asian Railways and improvement and intensification of training of railway staff.

The introduction of diesel locomotives to replace steam traction was one of the main topics considered by the experts in connection with the reduction of overcrowding on passenger trains and to accelerate goods traffic. India possessing considerable coal resources was moving forward slowly and would continue to rely mainly on steam traction for a long time to come though also introducing gradually diesel and electric trains. Some Railway administrations had noted an adverse effect of diesel locomotives on rail and track maintenance contrary to expectations and there had been initial technical difficulties with engines including breakdowns.

Diesel locomotives were generally praised for their usefulness in yard work where they give continuous service; for pulling overloads at higher speeds; and for operating successfully on congested lines. Their operating cost is lower than that of steam locomotives, but on the other hand, maintenance cost is expensive and maintenance generally requires much higher technical skill, a consideration of particular importance, their life-time is also much shorter.

In these circumstances experts held that dieselisation was "in the large majority of the countries of the Region

still in experimental stage" and they therefore called on ECAFE to ensure by acting as a Clearing House "much greater flow of information about diesel locomotives" and to finalise its own studies as rapidly as possible.

The experts discussed at considerable length various types of transmission for diesel locomotives and agreed that the power of diesel locomotive was decisive for the choice of transmission: mechanical transmission possessed advantage for a small power locomotive while hydraulic transmission have proved effective at small and medium power levels and was now also being tried at higher power levels, an agreed statement said. Among the other subjects that were discussed at the session were:—

- (1) Accelerated turnround of rolling stock.
- (2) Use of reinforced concrete sleepers where it was not possible to obtain adequate quantities of wooden sleepers at reasonable prices.
- (3) Dieselised railcars.
- (4) Co-ordination of Transport.
- (5) Refrigeration and
- (6) Performance statistics.

Reviewing the work of the United Nations Railway Training Centre at Lahore, the Sub-Committee expressed satisfaction at the progress achieved and extended use of the Centre to the Middle Eastern Countries. Thailand and China filled the places vacated by Indonesia and Viet Nam on the Centre's Advisory Board.

Participating in the Delhi meeting were Australia, Burma, China, France, India, Indonesia, Japan, Malaya, Neatherlands, Pakistan, Thailand, U.K., U.S.A., U.S.S.R. and Viet Nam. Also present were distinguished guests from the Federal Republic of Germany; observers from I.L.O., and the International Chambers of Commerce and the International Union of Official Travel Organisation. Mr. G. Pande, the Chair-

man of the Indian Railway Board presided over the Delhi meeting.

Higher Goods loading on Central Railway

A number of measures adopted recently on the Central Railway for improving wagon loadings was: increased hours of working at Goodsheds and night transshipment at break of gauge points; stream lining of works in marshalling yards; quicker release of wagons from sick sidings; faster turn round of wagons from workshops; and the progressive introduction of express goods trains. Directional loading of traffic on nominated days, enabling better clubbing of consignments has facilitated wagons carrying heavier loads. Several line capacity works have been executed and facilities at tranship sheds increased to eliminate bottlenecks which cause detention to traffic. These measures have borne rich fruit as can be seen from the following statistics:—

Particulars	Mar. '55	Mar. '56	Increase
Daily average loading B.G.	2254	2516	11.5 %
Daily average loading M.G.	342	373	9.5 %

Kalighat-Falta Railway

Government of India have decided to take over the narrow gauge line of 26.25 miles of Kalighat Falta Railway in West Bengal, now owned and worked by a private Company. This is to take effect from 1st April 1957 and due notice has been served to the Company.

Estimates Committee Report

The 24th report on the Ministry of Railways staff matters was presented to the Lok Sabha on the 6th April 1956 by the Chairman of the Committee. Among the various suggestions and recommendations made therein, the following are a few important ones:—

The great necessity for CORDIAL RELATIONS BETWEEN THE EXECUTIVE AND THE STAFF OF THE RAILWAYS: this could be done only by properly appreciating human values by mutual understandings and closer contacts. The Committee suggested that Railway Officers on tour should contact all the staff desirous of meeting them, study their problems and grievances in a sympathetic manner and guide them as to what was reasonable and unreasonable in their demands.

Employees' Unions to assist Administration:—Railway Employees Unions should assist the administration in improving discipline among the staff by constant propaganda and by bringing well-authenticated grievances, after fully and carefully checking them, to the notice of the administration for early action. A rule should be laid down that Office Bearers of the railway employees' unions should invariably be railway employees themselves.

The Committee felt that the causes for the slackening of discipline in Government Departments were due to conditions created during the war and change in the conception of the idea of discipline due to the transition from the Law and Order State to a Welfare State. It suggested suitable modifications in the rules and regulations wherever necessary and somewhat liberal conception of the term "discipline".

Redressal of Grievances:—A time limit should be laid down during which representations should be disposed of at all levels.

Government Advertisements:—The Ministry of Home Affairs should periodically revise the list of newspapers in which advertisements of Government Departments were published in consultation with the State Governments and the Legislatures from the regions concerned.

Staff welfare:—The aims of welfare must be (1) humanitarian: to enable

the worker to enjoy richer and fuller life: (2) Economic: to improve efficiency; create contentment and better relations between the employer and the employee: (3) Civic: to create sense of responsibility and make the worker a useful citizen by the recreational technical and educational facilities.

The Committee suggested that the question of the allotment of funds for staff quarters should be reviewed every year and more funds provided for as and when feasible.

Medical facilities:—The question of introducing contributory health scheme in the railways as in the case of some industrial concerns and the Central Government servants might be examined by the Railway Ministry.

Officiating posts:—The Committee recommend that all cases of Officers and staff officiating in the higher posts for more than five years should be reviewed periodically and orders of confirmation issued expeditiously as far as possible. Cases where salary has not been adjusted according to the recommendations of the CPC should be looked into and action taken to remove the grievances of the employees concerned. Dues to retired employees should be expeditiously settled.

Healthy Competitions:—Healthy competitions should be introduced between different divisions of a railway zone and also between different workshops. The Committee welcomed the proposed introduction of an Efficiency Shield to be awarded annually to an individual railway Administration. Due weightage should be given to matters like improvement in operating performance, nett earnings, number of claims dealt with, number of public complaints and settlement of staff dues, while awarding the Shield.

Rewards for special work:—Cases of exceptional and outstanding work should receive special recognition by payments

of honoraria, letters of appreciation and medals. Good work and sense of public duty among the highly conscientious workers should be suitably recognised.

Trained Personnel :—To overcome the shortage of trained personnel during the 2nd plan period, the Committee suggested that the Railway Ministry might consider the question of extending services of experienced personnel as also of re-employing retired hands.

Railway Service Commissions :—The Committee felt that each railway zone should have a Railway Service Commission to deal with the expected volume of recruitment efficiently and expeditiously. The extra cost involved would be about Rs. 1.5 lakhs. This additional expenditure would be more than compensated by increased efficiency, avoidance of delay in supply of staff to the Railway and lastly by the increased facilities afforded to the candidates in each Zone. The Headquarters of the Commission may be located at a centrally situated place.

Recruitment of staff :—The question of honesty and integrity of the candidates should be given greater emphasis in making selections for promotion to Class II service. The Committee recommended that psychological tests should gradually be introduced to find out the attitude of candidates for different types of jobs. The present method of recruiting certain categories of staff such as Office Clerks and Typists only by a written test and without an interview should be discontinued. Interview was necessary to confirm the idea of the personality and capacity of the candidate.

Railwaymen's Federation

The two rival unions of Railwaymen have come to an agreement to unite as a result of the efforts made by Mr. Jaya Prakash Narain and Mr. V. V. Giri.

Third class passengers amenities

While addressing a public meeting at Rajapura on the 30th March '56, Mr. Lal Bahadur Shastri, the Union Railway Minister stated that the Government was progressively reducing the difference in amenities between the first and third class passengers and that within the next 7 years, third class passengers would be provided with electricity, water and waiting halls at every railway station in the country.

Vijayawada Railway Station.

The first phase in the remodelling of this station involving the construction of a new island platform for metre gauge, conversion of old lines into broad gauge was completed and opened for traffic on the 1st April 1956. The main features of the improvements to be effected under the remodelling scheme are :

The new M.G. island platform and the conversion of the old M.G. platform into B.G., additional marshalling lines, overhead hydrants and watering arrangements, compound walls all round the marshalling yards to avoid thefts and pilferages, additions and improvements to the existing retiring rooms and a separate combined Office building for the R.M.S. and Police, improvements to the vegetarian refreshment room and Spencers etc., and roofing platforms and extension of platforms.

This scheme thus provides several amenities to passengers in addition to increasing reception lines for passengers and goods trains, thus eliminating the present detentions to trains.

Accountants' role in the Regulation of Expenditure.

The first Regional Conference under the auspices of the Madras Regional Council of the Institute of Chartered Accountants of India was inaugurated

at Gokhale Hall on the 31st of March 1956 by Dr. C.P. Ramaswami Aiyar. Dr. Aiyar stated though the accountancy profession had been statutorily recognised about 40 years ago, it received its formal charter about 7 years back. They had received a great deal of autonomy and it became their duty and privilege to train members to their profession and also conduct examinations for the purpose of introducing members to the profession. Equally important was the opportunity given to them to frame codes of conduct and all professional behaviour, for the guidance of the members of the profession. Dr. Aiyar further stated that "no profession which is not entirely and consciously as well as conscientiously self-regulating and self-disciplined can properly vindicate its autonomy."

The Chartered Accountants had now assumed new jurisdiction and new responsibilities have been thrust upon them. They were part of the industrial manufacturing and commercial make-up of the country and they had to take part in the guidance of these various branches of national enterprises and activity. They were in the Welfare State, they were building, and had new worlds to conquer. At present they were at the stage of incometax, supertax and estate duty. They were shortly likely to encounter a capital levy of some type or other in order adequately to finance and keep going the crores of obligations which India had taken upon herself.

It was just possible that within the next 3 or 4 years, even expenditure may be taxed. Chartered Accountants would therefore have to be tax consultants and one of their duties would be to advise Governments and private individuals. It would be within the jurisdiction and purview of Chartered Accountants and Auditors to scrutinise Government transactions, pull up the concerned Government wherever necessary and to

see that the Governments observed all the conventions of accounting.

In the end Dr. Aiyar warned the members of the profession to guard against fissiparous tendencies, regional, personal and other intrigues incidental to electioneering activities. They had also to guard against some kind of barrier that might come into existence between juniors and seniors in the profession.

Word—Writer

A new machine called "Word writer" which can write whole words and even short phrases when the operator touches a single key has been developed by the International Business Machines Corporation of New York. This electrical typewriter is understood to increase the output of a good typist by nearly 50%.

In operation, the typist writes a letter in the normal manner until he comes to a word or phrase that is stored in the electrical "memory". He depresses a foot pedal, touches the proper key and the electrical "memory" sends electrical impulses to the "word writer." The impulses actuate the keys of the electrical typewriter. The machine reverts to conventional operation when the word or phrase from the "memory" is finished.

The machine's memory is a plug board much like a telephone switch board. The typist takes short wires and connects them into the Board to spell out the words or phrases required for each key of the key board.

The impulses from the "memory" stimulate the machine to type at a rate of 150 words a minute as against the average typist's speed of about 60 words a minute.

Radio Stoves

The United States have recently placed in the market Stoves that cook in a few minutes by micro-waves. Micro-waves are a particular type of high frequency radio energy and micro wave cooking is the application of this type of energy to produce heat within foods. The new stove cooks at great speeds; for instance, it can bake a potato in five minutes. While the air in the stove itself, the stove itself and the cooking

utensils remain cool, the heat is produced only in the food itself. It is only when the micro wave is absorbed that it is converted into heat.

It is, however, likely to take a long time before the micro-wave stove becomes a standard equipment in the American household. It is very expensive and many cooking problems have still to be overcome. The oven can be built into the wall or used on a stand.

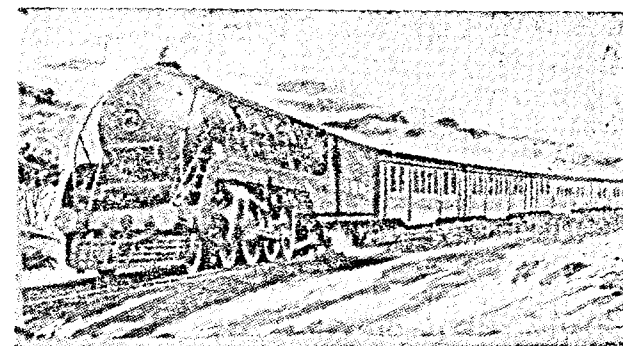
STUDENTS' CORNER**Variations in Manufacture Costs**

Mr. P. K. Sarkar, Officer on Special Duty, Railway Board, who is investigating the question of introduction of cost accounting systems on the pattern in Railway Workshops, has correctly observed that, for manufacturing the same article, in Railway Workshops, the costs differ widely not only from Railway to Railway, but also in the same Railway from period to period. Raw materials required and the labour schedule for each article being correctly fixed beforehand, and being almost common on all the Railways, as the article is standardized, it is difficult to justify the variations, though to a limited extent the difference may be due to a higher paid employee being posted to the job in the same scale, on one Railway against a lower paid employee on another Railway or at a different period when manufacturing another batch of the same article. In order to analyse the variations to see whether the costs are really heavy in some Railways and are not reasonable, the Railway Board have decided that, as an experimental measure, the stock orders should be charged with the average pay of the grade of the staff employed (and not the actual pay), and the results compared on all the Railways. This surely is a forward step in control of workshop ex-

penditure, but probably a simpler method would be to compare the material and labour schedules prepared in advance by the Planning Branch of the Workshops, of the different Railways, for a few representative components (preferably costlier components or those where vast variations in costs are reported). This would indicate precisely where the variation has occurred and remedial steps can be taken in time.

Rules of allocation

According to the new rules of allocation, the cost of replacements even in regard to passenger amenity works, is required to be allocated to Depreciation Reserve Fund, and the original cost of the superseded assets is to be credited to Capital and debited to Development Fund (i) Passenger Amenities. Sometimes, this may give very ubiquitous results as in the case of providing electric lights and fans to stations in place of oil lighting. The latter may have cost a small amount, say Rs. 1000/- while the electric installation may cost about Rs. 25/-. In such cases, the spirit of the rules of allocation would appear to demand that the cost of a new work, viz., electric lighting should be charged straightaway to Passenger Amenities (Development Fund), and not to Depreciation Reserve Fund.

THE RAILWAY ACCOUNTANT*April 1956***RAILWAY WEEK SUPPLEMENT**

In order to commemorate the 103rd anniversary of the running of the first train in India from Bombay to Thana on the 16th April 1853, the Indian Railways have drawn up an elaborate countrywide programme to celebrate a RAILWAY WEEK from April 10 to April 16, 1956. In this connection, numbers of articles from several Officers at high levels have been received for publication. Some of them are included hereunder.

Some which were received late have been held over. One of the articles has been included in the main body of the Journal.

The other aspects of this celebration on the Southern Railway have been referred to elsewhere in the main body of this journal.

Editor, RAILWAY ACCOUNTANT.

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Rs. 46 Crores Railway Workshop Expansion Programme

BY S. L. SAKSENA, *Director, Mechanical Engineering, Railway Board*

Compared to the position at the end of March 1955, the Indian Railways' holdings of rolling stock by the end of March 1961 are expected to increase by nearly 1,550 locomotives, over 5,800 passenger coaches and about 99,000 goods wagons. Increase in rolling stock has already brought heavy pressure on Railway workshops engaged in repair and overhaul work. The Railway Board has in hand schemes estimated to cost Rs. 46,00,00,000 for the expansion of existing workshops and the setting up of new ones.

Railway rolling stock consists mainly of locomotives, coaches and goods wagons. Their day to day maintenance, routine checking and servicing is attended to in locomotive running sheds, at carriage and wagon depots and in sick lines. They are, however, given overhaul repairs in mechanical workshops after a scheduled mileage or at a fixed time interval which is laid down for different types of stock used on various services on the basis of practical experience.

As part of these overhauls, locomotives and other rolling stock are stripped completely, their moving and other components are carefully examined and the boiler is given a thorough inspection. The parts are then repaired or renewed as necessary, tested and reassembled. In addition to repairs to rolling stock, the mechanical workshops undertake repairs to pumps, cranes, machinery and plant. The production side of these workshops manufactures the spare parts required for repairs undertaken in shops, running sheds and carriage and wagon depots.

The locomotives or coaches thus repaired are sent for trial runs. When everything is found satisfactory, they are made over to the Operating side for use.

EXISTING WORKSHOPS

Each Railway has its own workshops to meet its repair requirements. Given below are details of the major workshops on the different Railways and the work on which they are mainly engaged :

S. 1

Northern Railway : Carriage and Wagon Shops, Jagadhri—for repairs to broad gauge carriage and wagons; Loco Shops, Charbagh (Lucknow)—for repairs to broad gauge locomotives; Carriage and Wagon Shops, Alambagh (Lucknow)—for repairs to broad gauge carriages and wagons; Loco Carriage and Wagon Shops at Jodhpur and Bikaner—for repairs to metre gauge locomotives, carriages and wagons.

Eastern Railway : Loco Shops, Jamalpur—for repairs to broad gauge locomotives. These workshops have a re-rolling mill section and a permanent way foundry is an additional feature; Carriage and Wagon Shops, Lillooah—for repairs to broad gauge carriages and wagons; Loco Shops, Kanchrapara—for repairs to broad gauge locomotives; and Carriage and Wagon Shops, Kanchrapara—for repairs to broad gauge carriages and wagons.

South-Eastern Railway : Loco, Carriage and Wagon Shops, Kharagpur—for repairs to broad gauge locomotives, carriages and wagons.

Southern Railway : Loco Shops, Perambur—for repairs to broad gauge locomotives; Carriage and Wagon Shops, Perambur—for repairs to broad gauge carriages and wagons; Loco, Carriage and Wagon Shops, Golden Rock—for repairs to broad and metre gauge locomotives, carriages and wagons and manufacture of spare parts for running sheds and carriage and wagon depots; Loco, Carriage and Wagon Shops, Hubli and Mysore—for repairs to metre gauge locomotives, carriages and wagons.

above involves a great deal of planning, as these expansions have to be so arranged that the outturn from shops does not suffer, and calls for structural buildings, provision of additional machinery and plant including cranes etc., designed and phased to obtain correct sequence in manufacture and repair operations, to deal satisfactorily with the repair load as envisaged during the Second Five Year Plan. Some work in this connection with these expansions has already been finalised and sanctioned, while in regard to others, plans and estimates are under preparation. The estimated cost of the expansion and of the setting up of new units mentioned above is about Rs. 46 crores.

Greater Passenger Comfort in New All-Steel Coaches

Perambur Factory Makes Standard Coaches of the Future

BY K. SADAGOPAN, *Chief Administrative Officer, Integral Coach Factory.*



The all-steel, all-welded broad gauge passenger railway coaches now being manufactured at the Integral Coach Factory at Perambur, near Madras, have proved popular in several Western countries and have been adopted as the standard for the future in India. Each coach involves the manufacture of 1,000 different components, and work on their production has already begun. The target production of 350 coaches per year will now be reached in four years, instead of five.

Inaugurated on Mahatma Gandhi's birthday, October 2, 1955, by Prime Minister Shri Jawaharlal Nehru, the Integral Coach Factory represents a story of achievement, of difficulties overcome, of progress against obstacles, a saga of dogged team-work and patriotic endeavour on the part of thousands of workers of all ranks and grades spread over a period of years.

The project was sanctioned in 1952 and work on the construction of the giant Factory started

almost immediately. On what was a barren stretch of waste land in 1952, there arose by 1955, huge factory sheds forming regular geometrical patterns on the one side and the attractive little colony of 400 houses presenting an equally attractive geometrical pattern on another side, the whole picture presenting a fascinating sight from the air.

When one enters the Integral Coach Factory, the view at close quarters is as fascinating and

as cheerful as the distant view from the air. One is struck by the well-laid out and beautiful concrete roads bordered by lawns and flower beds and the spotlessly clean workshop sheds with the machines arranged in neat rows.

All the service lines such as compressed air, water supply, electricity etc., are taken through underground channels neatly covered with chequered plate flush with the floor. The ventilation and lighting are excellent. Another novel feature adopted by the Integral Coach Factory, is in the design of the foremen's offices, which have been built with glass shuttering all-round and sited in such a way as to afford a full view of the shops to any person inside these offices and *vice versa*.

The cantilever construction of these Offices permits the space beneath to be used as storage space for tools and other shop equipment. The tools themselves are stored in neat and attractive looking tool cribs which have been manufactured to a special design adopted by this Factory. This design facilitates efficient storage, prompt issue and easy accountal.

The Factory has been equipped with the most modern plant and machinery.

WHY PERAMBUR COACHES ARE BETTER

The coach manufactured in this Factory is of an entirely new type which has not yet come into full vogue in this country though it has been adopted as the standard for all broad gauge coaches in the future. It is a type which has attained wide popularity in the countries of the west and, though to the uninitiated it looks very much like any other railway coach, it has several exclusive features which make it a distinct improvement over the passenger coaches generally in use on the Indian Railways.

The conventional type of wooden or steel body consists of three major parts; first, the body proper consisting of the floor, the sides and the roof; second, a heavy steel frame on which the body rests and to which it

is bolted; and third, the two bogies—under-carriages carrying the wheels—on which the coach runs. In this design of the coach, it is the underframe that sustains the stresses resulting from the weight and push and pull of a train in motion and the body serves only as shelter for the passengers and is a dead-weight supported by the underframe and by itself, incapable of withstanding normal stresses and the severe shocks of a collision.

In contrast, in the present design, the under-frame and the coach body have been welded into one integral unit in the nature of a large tube and it is this feature which gives the integral coach its special name. This method of integration of body and underframe, as the readers would surely know, is already in general use by automobile manufacturers who now build integral automobile bodies in preference to the older type where the body is separate and secured by means of bolts to the chassis.

In the new design, the integral coach body not only serves to shelter the passengers but also plays its part in bearing normal stresses, besides being very much more resistant to damage during collisions and accidents.

GREATER SAFETY IN ACCIDENTS

The safety factor has been enhanced by the adoption of exceptionally strong constructions in the two body ends which, combined with the integral body, eliminates the possibility of telescoping of one coach into another in a collision, thereby minimising the possibility of loss of life and serious injury in railway accidents.

In actual practice, it has been seen that when an integral coach is involved in a collision, all that happens is that the two ends of the coach in absorbing the shock, sustain some deformation and casualties, if any, are confined to those at the ends.

Taking this factor into consideration, the doors and lavatories have been located at the

ends of the coach so that the nearest passenger is normally seated six to seven feet away from the ends, and is thereby assured of a considerable margin of safety even in the event of a serious collision.

The integral design has also resulted in another important advantage in reducing the weight of the standard coach from 42 tons to 35 tons. This has resulted in double economy—first, economy in the use of steel and second, economy in motive power as more passengers could now be hauled with the same power, a factor which would make for reduction in overcrowding.

GREATER COMFORT

Another welcome feature which would interest the travelling public is the special type of window frames and shutters. In the conventional wooden body coach, the window shutters have some times an annoying habit of getting jammed either in the open or in the closed position and the passenger has to put up with the inconvenience of a closed shutter which cannot be opened when he wants fresh air or an open shutter which resists every attempt to close it when the rain or the sun is beating in.

These difficulties are caused by the tendency of wood to warp and swell, resulting in the shutters not moving freely in their frames. The special type of window frames and shutters employed in the Perambur coaches are constructed from aluminium extrusions and are fitted as complete window units. The shutters can be operated with ease and convenience and have been so designed as to ensure that they do not get jammed. The shutters and the doors have also been fitted with rubber seals at the edges just as in a motorcar to prevent dust and rain from seeping into the compartment.

Another feature making for greater comfort is the fitting of shock absorbers as in a motor car. Travel in an integral coach would be as comfortable as in a motorcar over a level road.

MANUFACTURE OF COMPONENTS

The production these integral coaches involves the manufacture of about 1,000 components, and the Integral Coach Factory at Perambur already started the manufacture of these components. The inauguration of production saw the starting of work on a small scale on an assembly with imported components and the scheme provides for the gradual setting up of production of all the components required for the coach in the Factory itself.

The targets for production originally envisaged five years to reach the full target of 350 coaches per year on a single shift with all components manufactured in the Factory itself. Efficient team-work and careful planning has, however, made it possible now to reduce this period to four years and the Integral Coach Factory which is already very much ahead of its target expects to contribute its mite in the drive of the Indian Railways towards self-sufficiency.

TRAINING FUTURE TECHNICIANS

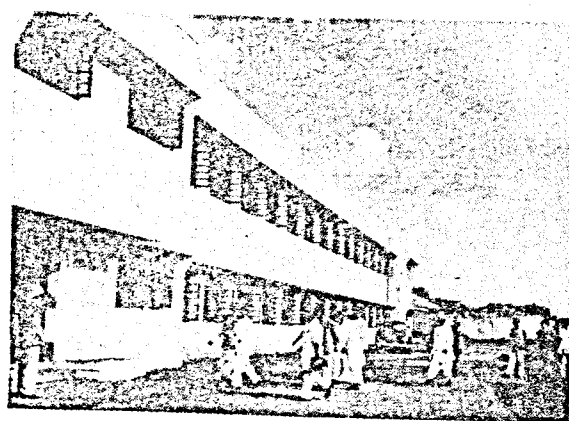
A word about staff. A modern industrial unit like the Integral Coach Factory requires a large number of craftsmen capable of highly skilled and precise workmanship. The paucity of skilled workmen of the right type and the right degree of skill has been the greatest handicap in the development of industries in this country.

The Integral Coach Factory has sought to overcome this handicap by training its workmen in a technical training school of its own, organised on the most modern and efficient lines. The pressing requirements of the Factory could not brook the time involved in recruiting raw men and training them to acquire the necessary skill.

During the phase of establishing full production in the Factory, partially trained craftsmen who are not in such short supply in the country, are being recruited and given intensive training to acquire the necessary

degree of skill and master the intricacies involved in the modern techniques of railway coach production.

These trainees have been given several facilities, including a three-storeyed hostel, play-grounds etc. As the trainees leave the training school and come on the rolls of the Factory as workmen, they will find conditions of work most congenial and all facilities for increased production available adequately.



STAFF AMENITIES

Reference has already been made to the clean and tidy atmosphere in the shops. A modern two-storeyed building equipped with steel furniture, stainless steel utensils, electric cooking equipment and other modern amenities, has been provided to serve as a canteen for the workmen. The canteen itself is managed autonomously by a committee which includes representatives of the workmen.

A modern four-storeyed, fully air-conditioned Administrative Office has been constructed for administrative staff. This building it might be remarked, was constructed in the record time of one year. Other facilities to workmen include a small colony which has been provided with children's parks, club house and nicely laid out road.

The saga of the Integral Coach Factory is not yet over. It will grow from achievement to achievement and contribute its fullest share to the development of the Indian Railways and help them to be of greater and greater service to the travelling public.

Breaking the Bezwada Bottleneck Southern Railway Plans to Ease North-South Traffic

By T. A. JOSEPH, General Manager, Southern Railway.

This article refers in some detail to the plans for easing the flow of goods traffic between the north and the south beyond Bezwada, where all traffic from the South Eastern and Central Railways converges. The removal of the Bezwada-Madras bottleneck during the second Plan period is expected to open up an era of unrestricted north-south movement of goods, and bring prosperity to the Northern Circars by a substantial increase in the loading of rice.

The areas served by the Southern Railway have necessarily to import considerable quantities of various materials from the north. Before the last war, an appreciable portion of this north-south traffic was moving by the sea route but during and after the war this traffic, for various reasons including the cost of shipping which had by then soared high, began

to seek transport exclusively by rail, thereby bringing greater pressure on the already strained railway system linking South India with the North.

The three main channels through which the bulk of the north-south goods movement takes place are the routes via Waltair, where the

South Eastern Railway joins the Southern Railway, and via Bezwada and Raichur which are junctions where the Central and Southern Railways meet. The traffic moving via Waltair and via Bezwada converges at Bezwada and this combined stream has to be moved over the single line section proceeding from Bezwada to Madras.

This section, although one of the main trunk routes on Indian Railways, had not been originally designed to carry the heavy traffic that gradually found its way through it, with the result that it soon became one of the heaviest single line sections in India. The line now constitutes the main artery through which an enormous volume of north-to-south traffic, including railway and public coal, moves to Madras and places beyond in South India.

INCREASE IN TRAFFIC DENSITY

The following figures of net ton miles moved from Bezwada over this section for the last four years will give an idea of its traffic density as compared with the Waltair-Bezwada section which lies immediately above. (A "net-ton mile" is a statistical unit which shows the net volume of freight moved in tons multiplied by the distance (in miles) carried.)

	MILLIONS NET TON MILES	
	Bezwada-Madras section	Waltair-Bezwada section
1950-51	404	269
1951-52	422	277
1952-53	441	263
1953-54	428	290
1954-55	476	310

During the war period, the highest priority was naturally accorded to military traffic, and so heavy was the strain imposed on this section that material for the Defence Department could be moved only by curtailing passenger train services and by moving goods traffic in block loads. Even by adopting these stringent methods, the then Madras and Southern Mahratta Railway found it difficult to move

more than 350 wagon loads of traffic daily from Bezwada in the direction of Madras.

After the termination of the war, passenger train services on this and other sections had to be restored gradually to their pre-war level with a corresponding reduction in goods traffic handled, and this resulted in great difficulty being experienced to move even 300 wagon-loads from Bezwada to Madras. As a matter of fact, the actual performance fell very much short of even this reduced target.

INTEGRATION AND AFTER

On April 14, 1951, the three railway systems of South India, via the Madras and Southern Mahratta Railway, the South Indian Railway and the Mysore State Railway, were integrated into a single railway zone, the Southern Railway. This coincided with the commencement of the first Five Year Plan, although this fact had not been realized then, but only two years later.

One of the first problems to which the newly-constituted Southern Railway had to apply itself was the easing, if not the complete removal, of this chronic transport bottleneck. It was then considered that if the railway could move daily 420 loaded wagons from Bezwada, it would be just sufficient to meet the traffic demands of the period, provided 50 per cent of the coal movement was kept to the sea route.

It should be mentioned here that coal carried by sea costs much more than when it is transported by rail, but the Railway decided to incur the extra expenditure to enable more general merchandise being moved instead.

The Southern Railway accordingly launched a scheme for increasing the line capacity of the Bezwada-Madras section and completed, before the end of the first Plan period, the construction of nine new crossing stations and the extension of loop lines at fifty stations to enable longer goods trains to be run.

The fleet of locomotives on the section was gradually replaced by new W. G. class engines

with a greater hauling capacity than the X. D. type engines which were formerly working the trains. in loading as the following figures will illustrate :

Total Broad Gauge loading in wagon-loads	
1951-52	2,87,774
1952-53	2,78,298
1953-54	2,91,682
1954-55	3,03,259
1955-56	2,70,604 (for ten months)

The drop in 1952-53 was mainly due to a definite slackness in demand during August, September and October 1952. Since then there has been no such drop and no slack season. The increase in loading soon outstripped the demands for wagons and to quote a single but typical example arrears of demands for rice on the Bezwada District which stood at over 10,000 throughout 1955, declined to a bare 327 by the end of January 1956.

TO STATIONS BEYOND MADRAS

A sizeable portion of the goods traffic moved from Bezwada to Madras is actually destined to stations beyond Madras and has to be dissipated mainly in three directions :- (i) to metre gauge stations *via* Arkonam and Katpadi ; (ii) to broad gauge stations *via* Jalarpet ; and (iii) to metre gauge stations *via* Bangalore.

To enable this being done, a number of works like the remodelling of the Bangalore yard and the provision of improved transshipment facilities at Bangalore, Arkonam and Katpadi were undertaken. The first group of these works have now been completed, and the railway is now in a position to move without difficulty 450 loaded wagons daily from Bezwada to Madras.

In addition, these works had a salutary effect on the clearance of traffic in general on the broad gauge section of the railway and enabled it to achieve loading targets which were aimed at. There was a steady increase

PLANNING FOR FUTURE INCREASE

The various measures enumerated above adopted by the Railways for a gradual elimination of the Bezwada-Madras railway bottleneck did not, however, remove the bottleneck entirely although they effected a substantial easing of the transport position in general.

The country is now on the threshold of the second Five Year Plan and with an all-round increase in the economic activity and the setting up of huge plants, the demand for rail transport is expected to register a phenomenal rise. The transport machinery should be geared up adequately if the various projects of the second Plan are to be completed successfully.

The remodelling of the Bezwada yard and the conversion of the Renigunta-Gudur section into broad gauge mentioned already will result, no doubt, in better operation, but cannot increase line capacity. The single line section between Bezwada and Madras has reached its

saturation point as its capacity has already been increased to the maximum by the provision of various operational facilities.

The Southern Railway have, therefore, worked out a number of proposals, to be included in the second Five Year Plan, to increase the line capacity of this section to an extent which would permit of an almost free flow of traffic. The most important of these works is the doubling of the line between Bezwada and Gudur (182 miles) by stages during the second Plan period.

To afford immediate relief, the following sections would be doubled within the next two years and the rest later :

STAGE I (1956-57)	
Ulavapadu to Surareddipalem	17 miles
Kadavakuduru to Bapatla	19½ miles
Total	36½ miles

STAGE II (1957-58)	
Surareddipalem to Ongole	6½ miles
Bapatla to Tenali	26½ miles
Chinna Ganjam to Kadavakuduru	2½ miles
Total	35½ miles

INCREASED INTAKE FROM WALTAIR

As the ultimate doubling of the entire Bezwada Gudur section will increase the line capacity considerably, it is proposed to increase the intake of traffic from the South-Eastern Railway at Waltair. It will be of interest here to note that in 1950-51 this intake was only 180 wagon-loads per day and this has gradually been increased to 270 at present. It is proposed to further increase this to 400 daily after the Plan period.

With a view to achieving this, proposals are in hand to double the Samalkot-Rajahmundry section (31 Miles) and to open six additional crossing stations between Waltair and Bezwada. A new diversion line will be laid to avoid the

heavy gradient through Annavaram station and the bank between Narasapatnam Road and Gullipadu will be regraded.

Another important work calculated to increase line capacity north of Bezwada and to enable free loading of rice to be undertaken in the Circars is the proposed conversion of the Bezwada-Gudivada section into mixed gauge and the Gudivada-Bhimavaram section into broad gauge. These lines pass through the fertile deltaic areas of the Godavari and the Krishna, commonly known as the "rice-bowl" or the "granary" of South India.

The exportable surplus of rice from these areas has always far exceeded the transporting capacity by rail. A through broad gauge connection from Bhimavaram to Bezwada *via* Gudivada will not only enable this vast traffic potential to be tapped more fully but will also serve as an alternative line to the heavily-worked main line section between Bezwada and Nidadavolu.

At Bezwada, it is proposed to increase the intake from the Central Railway to 300 wagons daily.

TRAFFIC DOWN SOUTH

Down south, the capacity of the various sections through which the additional traffic from the north will flow and get dissipated, is being increased. The Arkonam-Jalarpet section, which is second in importance only to the Bezwada-Madras section, is programmed to be doubled during the second Plan period and it is also proposed to double a length of sixty miles of the Jalarpet-Erode section (120 miles.) Two sub-sections on this line, where gradients act as a limiting factor to locomotives hauling their full load, are proposed to be taken up for doubling next year. The intake at Jalarpet for traffic in the direction of Erode was originally 180 wagon loads daily and this has already been raised to 225 at present. The target for this route at the end of the Plan period will be 350 wagons daily.

After the conversion of the Renigunta-Gudur section into broad gauge, a fair portion of the traffic moving from Bezwada in the direction of Madras will get diverted *via* Gudur and Renigunta and converging with the stream of traffic coming from Raichur side, will throw a great strain on the Renigunta-Arkonam single line section. This section, which has a few gradients, will have to be ultimately doubled and the first instalment of about 19 miles is being taken up next year.

The Southern Railway confidently hopes that when these works are completed, the administration will be in a position currently to meet all demands for transport placed on it at the end of the Plan period. The removal of the Bezwada-Madras bottleneck will open an era not only of unrestricted north-south movement of goods but also one of prosperity to the Northern Circars of the Andhra State by the substantial increase in rice loading which it will be possible to achieve.

Western Railway's Rs. 100-Crore Plan

Larger Traffic, More Amenities and Staff Welfare

By M. GANAPATHI, *General Manager, Western Railway*

The Western Railway has a second Five Year Plan costing Rs. 100 crores. It will, in addition, receive fresh rolling stock costing about Rs. 69 crores. The Railway's Plan provides for relief in over-crowding in its suburban services, transport of larger passenger and goods traffic, increase in line capacity and survey of new lines, introduction of new Janatas and more amenities for rail-users. The Railway will spend Rs. 6,00,00,000 on quarters for staff including a new township at Kotah, and Rs. 2,53,00,000 on staff welfare works, including Rs. 2,28,00,000 on medical amenities.

Over a century back, India saw the beginning of the railway system in 1853 with the construction of a small line from Bombay to Thana on what is now the Central Railway. The other railway system, the Western Railway, with its headquarters at Bombay, the commercial capital of India, saw its beginning at Surat, which was the first foot-hold of the British in this country.

The Western Railway feeds the fertile fields of Gujarat with an intensive service. The distance between Bombay and Ahmedabad served by a double line track except for a small portion between Baroda and Anand, which is also soon to be provided with a double line.

From Ahmedabad, the metre gauge track leads one into the equally rich state of Saurashtra, and skirting along the desert of Rajasthan provides an alternative route to Delhi and East Punjab. The metre gauge system of

this railway will shortly provide a link between the north and south with the construction of the metre gauge line from Khandwa to Hingoli.

Formed in 1951 by the amalgamation of the B. B. & C. I. Railway, Jaipur, Rajasthan and the Saurashtra Railways—the latter was itself the result of amalgamation of various small railways owned by the Princes of Kathiawar—the Western Railway consisting of a route mileage of 5,614 miles was at once faced with the task of providing additional facilities necessary to cope with the large-scale development in the field of agriculture and industrialisation which followed independence.

The problem of bringing the amalgamated metre gauge lines to the standard of maintenance and operation of Government railways also meant a considerable amount of planning

and execution of various works. With the coming of independence, this Railway was also faced with the task of finding transport capacity to replace the loss of Karachi port. It was, therefore, natural that during the first Five Year Plan stress should have been laid on the clearance of a heavy backlog of renewals and replacements which could not be carried out during the war and immediately thereafter.

"SPECTACULAR" PROGRESS

The progress of the Western Railway's scheme for rehabilitation of rolling stock and for the removal of bottlenecks that hampered the progress of industrialisation and all-round development, has been almost spectacular.

Without much increase in its holdings of rolling stock and locomotives, the Western Railway carried last year 305 million passengers against 258 million passengers in the first year of its formation; similarly, the tonnage of goods carried increased from a little over 13 million tons to well over 16½ million tons.

Over 400 miles of metre gauge lines were completely renewed and nearly 900 miles were partially renewed.

Known as "the Line of Bridges", this Railway had to face the task of strengthening bridges and culverts to enable heavier engines and heavier loads to be carried at faster speeds. As many as 120 bridges between Bombay and Baroda alone, a distance of 240 miles, were strengthened during the first Plan. A new high-level bridge of about 1,500 feet in length was completed over the Mahi river at Sevalia on the Anand-Godhra section.

This period saw the construction of the Kandla-Deesa Railway, a length of about 170 miles, designed to provide an alternative cheaper and quicker route between the West and the North of India and to serve the developing port of Kandla as a relief to Bombay port. The construction of the Indore-Dewas-Ujjain line, the Raniwara-Bhildi line

north of Kutch for establishing an alternative outlet from Kandla to its hinterland, and the Fatehpur-Shekhawati-Churu line has also been taken in hand and works are in progress.

The line from Ahmedabad to Kalol was doubled and the section from Kandla to Bhuj, a distance of 30 miles of narrow gauge line, was converted to metre gauge during the first Plan period. A large number of line capacity works for increasing the sectional capacity at various places have also been carried out. These include the construction and opening of 35 new crossing stations, the provision of new reception and despatch lines at various stations with a view to increasing terminal facilities, additional loop lines at various stations, including extension of existing loops and signalling arrangements etc.

SECOND PLAN

The Western Railway has extensive plans for development in the future. The Western Railway drew up a Second Five Year Plan costing Rs. 149 crores excluding rolling stock. Due to shortage of funds this has been reduced to Rs. 100 crores, and within this amount it is proposed to cater for a 15 per cent increase in passenger traffic and 25 per cent increase in general goods traffic, in addition to meeting the additional requirements of industries and agricultural projects for which a definite demand for transport can be anticipated on the basis of information available at present.

To cater to this traffic, the Ratlam-Godhra-Nagda section and the intermediate section between Baroda and Anand will be doubled, and double line working would be established from Bombay to Ahmedabad and from Bombay to Nagda. In regard to new construction, the survey for the Loharu-Pilani link, a distance of 13.75 miles, has been completed. The survey of the Kotah-Chitorgarh line (104 miles) is in hand, and it is also proposed to carry out surveys for the following line projects: Dungarpur to Ratlam *Via* Banswara, Bhavnagar to Tarapore, and a broad gauge line into Saurashtra.

Additional line capacity works, bridge rehabilitation, track renewal, workshop expansion, signalling and safety arrangements, are all included in the Second Plan. Additional locomotives, coaches and wagons costing about 69 crores of rupees would be obtained to enable this Railway to cater for the additional traffic.

RAIL-USERS' AMENITIES

During the first Five Year Plan, the Western Railway spent Rs. 200 lakhs in looking after the welfare of the passengers. Of particular significance is the rebuilding of stations like Baroda, Surat, Rajkot, Indore, Ujjain and Mehsana with modern facilities. The waiting halls, concourses, refreshment rooms, lavatories and booking windows at these and other stations have been designed to give the maximum comfort to the public. The remodelling of the Churchgate, Godhra and Jaipur and other large stations is contemplated.

Janata Express trains have been introduced between Bombay and Ahmedabad and it is proposed to introduce similar trains between Bombay and Delhi and between Ahmedabad and Delhi.

During the Second Five Year Plan, an allocation of Rs. 230 lakhs has been made for the remodelling of stations to increase their usefulness for goods and passenger traffic.

Owing to the paucity of coaches, overcrowding is endemic on the Indian Railways, and some sections of the Western Railway are particularly bad, such as between Ahmedabad and Mehsana. Passengers on the Bombay suburban section where there is heavy overcrowding, particularly during the peak hours, will be interested in the relief that is being planned for them.

SUBURBAN TRAFFIC

The three lines between Bandra and Borivli have already been electrified to cope with the additional traffic in the suburban section. It is further proposed to spend Rs. 32 lakhs on

the provision of additional facilities and for bringing these three lines into use for suburban traffic also. Additional electrical multiple unit stock has been ordered and is expected to be delivered during 1956-57 and 1957-58. One of the big schemes in the Second Plan is the remodelling of the Churchgate station.

With the provision of these facilities it should be possible to run additional trains which can be introduced on receipt of the 25 multiple electrical coaches which are on order. The new Churchgate station, which will also provide additional accommodation for the overflow of the Western Railway headquarters office, will be a modern multi-storeyed structure.

The suburban traveller whose number has increased from 145 million to 173 million during the last two or three years may take consolation in the fact that he is no worse off than his "counter" on the English or American railways.

On the claims side, apart from expediting the settlement of claims, a claims prevention organisation has recently been set up with a view to improving the security afforded to packages in Railway custody during transit or otherwise. It is the common experience of the public that settlement of claims either for compensation or refund is normally very expeditious on the Western Railway.

STAFF TRAINING AND WELFARE

While great stress is being laid on efficiency and improvement in working, equal attention is also being devoted to the betterment of staff and their welfare. Training of staff has been given a very important place in the Second Plan of the Western Railway. At present two training schools are functioning, one at Ajmer and the other at Udaipur. In the Second Five Year Plan, provision has been made for the development of the school at Udaipur at an estimated cost of Rs. 62 lakhs, and for the establishment of a school at

Dohad for imparting training to technical apprentices at a cost of about Rs. 20 lakhs.

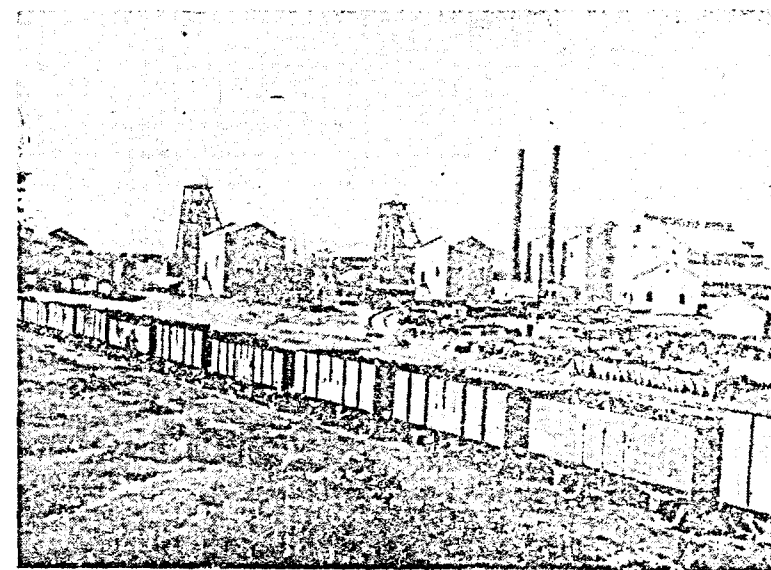
An interesting feature of the plan of this Railway is the provision of Rs. 20 lakhs to be spent on various training centres where class IV staff would be given instruction in accordance with the recommendations of the Accident Enquiry Committee. Similarly, staff in the Mechanical Department will be provided with training facilities at an estimated cost of Rs. 25 lakhs.

For efficiency, it is essential that the staff should be in good health, both physical and mental. Towards this objective, over 253 lakhs of rupees would be spent, of which Rs. 228 lakhs would provide medical assistance to the staff and their families. During, this period

Rs. 600 lakhs would be spent on the provision of staff quarters and on the creation of a township at Kotah where a wagon repair shop is to be established.

All this expenditure on behalf of the staff is being incurred on the well-established economic theory that man does not live by bread alone, and that for a worker to give his best, he should be guaranteed entire satisfaction of certain minimum needs.

The Western Railway embarks on the Second Five Year Plan with courage and confidence. If past achievements are any indication, the future of this Railway is bright in its sustained efforts in the service of the public and the nation.



A train loaded with coal leaving a coal field in Bihar.

(About 40% of all goods traffic on the Indian Railways comprises coal only)

Indian Railway Fleet of 250,000 Wagons

Master Plan of Daily Movements

BY P. H. SARMA, *Director, Traffic, Railway Board*

The Railway Board, from New Delhi, determines and fashions the broad pattern of the daily movements of India's fleet of over 250,000 goods wagons, in a manner calculated to be in the best interests of the nation's economy as a whole. Spread over more than 40,000 miles of track, the daily control and regulation of 250,000 wagons is very much like the continuous formation, massing and deployment of troops on a battlefield. Each movement is charted and is part of a plan; each unit is in itself important; delays have to be eliminated; and the maximum co-ordination between the various units achieved. This is done through a complicated system of controls explained in this article.

While the movement of passenger coaches on mail, express and passenger trains is comparatively easily understood, the utilisation of goods wagons on the vast network of the Indian Railways is somewhat of a mystery to an average railway user.

The Indian Railway system at present has a fleet of 1,73,000 broad gauge and 78,000 metre gauge wagons operating on 16,000 miles of broad gauge lines and 15,300 miles of metre gauge lines.

The wagons owned by each of the seven Railways are as under:

	Broad gauge	Metre gauge	Total
Central	35500	1900	37400
Western	14300	20600	34900
Southern	12200	18000	30200
South Eastern	30500	—	30500
Eastern	53700	—	53700
North Eastern	—	32600	32600
Northern	26800	4900	31700
Total	173000	78000	251000

In the past, when the Railways were owned by commercial companies, each individual Railway had its own design of wagons and as far as possible these were kept on its own system for loading and maintenance purposes. Even when the traffic loaded from one Railway had to be moved to stations situated on other Railways, these wagons were despatched only

via the various junction stations connecting the adjoining Railways where they were meticulously examined as to their mechanical condition.

On their release at destinations, the wagons were sent back at the earliest to the owning Railway by the shortest route. Frequently, these wagons returned empty since the return traffic in the same direction was not always available.

In 1923, it was decided to arrange a wagon pool on the broad gauge system. This meant that all the general service wagons, that is, except those of special type like tank wagons, bogie rail truck, etc., were allowed to move between the various Railways without a compulsory return to the owning Railway.

This was a great step forward in the better and more intensive utilization of wagons. It meant that wagons belonging to the South Indian Railway could be utilised by the East Indian Railway for loading coal to the Bombay, Baroda and Central India Railway or to the Great Indian Peninsula Railway. Again, on release on the B.B. & C.I. or G.I.P. Railway, they could be back-loaded to the North Western or to the Eastern Bengal Railway. In other words, these wagons could be booked to any destination and used by any Railway—wagons being returned to the owing Railway only once in three years to receive periodical overhaul. If in the intervening time, any

repairs were required, these were carried out by the Railway in which the wagons were found running. This led to all-round efficiency.

This common pool of wagons necessitated central control to keep accounts of the wagons moved from one Railway to another. Telegraphic messages were sent by junction stations to a central authority, giving the details of the number of wagons despatched, the number loaded or empty in respect of covered and open wagons and special types. This was supplemented daily by statements giving the individual numbers of the wagons which were made over and taken over at each junction of inter-change.

On receipt of these particulars from the various junctions, the central authority, the Director of Wagon Interchange, ascertained the number of wagons each Railway received or despatched to the adjoining Railways and worked out the net number of wagons each Railway had lost or gained during the day.

Further, in order to check the number of wagons on each Railway, a numerical count was made once in every two years of all wagons, simultaneously on all the Railways, and the number of wagons actually owned and actually possessed by individual Railways was determined. This ensured accuracy in the maintenance of each Railway's balance from day to day.

The pooling arrangement helped materially in clearing more traffic and also in relieving the occasional pressure on certain Railways, for now it was possible to borrow wagons from other Railways and utilise them. The Director of Wagon Interchange always had a complete picture of the various demands made on the pool and of the available resources, and this enabled him to order the supply of wagons from the Railways, who could spare them to those who needed them.

With Government taking over all the private Railways and with the integration of the State

Railways, the entire control and distribution of wagons is now exercised by the Railway Board. The Board assesses the requirements of the various zonal Railways, keeping in view the busy or slack seasons, the relative importance and urgency of the traffic, the anticipated operating performance of each Railway, and allots wagons accordingly.

It would have been ideal if the wagons transacted at one junction between a pair of Railways were equal. But, the traffic conditions vary, particularly on account of climatic conditions, failure of monsoons, floods, etc. and a set pattern of traffic movements is hard to obtain on most Railways. For example, 50 per cent of the loading on the Indian Railways is concentrated on the Eastern and South Eastern Railways, since practically 95 per cent of the coal is lifted on these two Railways.

The heaviest movement from this area is beyond Moghalsarai, where an average of 1,800 wagons a day are made over by the Eastern to the Northern Railway, which distributes part of it via Allahabad, Kanpur and Agra East Bank. Movements via Agra East Bank are towards Western India, where, the covered wagons are loaded with traffic to Bombay and other areas and the uncovered ones are handed over to the Central Railway at Ujjain or Bhusawal for backward movement to the coalfields since traffic on the Western Railway is not adequate to balance the movement via Agra East Bank. Therefore, there is daily a short-fall at Agra East Bank, to the extent of 150 wagons, which the Western Railway makes good at other junctions like Bhusawal and Ujjain with empties, since no loaded traffic via these routes is available. Similarly, the Northern Railway makes up its daily loss of 150 wagons. The Central Railway, which receives the excess from the Western Railway, makes this over to the South Eastern Railway at Katni and Nagpur. The Eastern Railway and the South Eastern Railways adjust this shortage at Moghalsarai and

the excess at Nagpur, Katni, in the Calcutta area and in the coalfields.

This cycle of operations creates some difficult movement problems. For example, the failure on the part of one Railway, say, the Western Railway, causes shortage of wagons on the Central, Eastern and the South Eastern Railways, and affects their loadings.

The movements between the Central and the Southern, and Southern and the South Eastern Railways, are balanced in regard to the total number, but the proportion of open and covered wagons varies. Open wagons received on the Southern Railway *via* Raichur from the Central Railway and *via* Waltair from the South Eastern Railway, on release, are returned *via* Bezwada to the Central Railway and any change in this pattern results occasionally in the shortage of covered wagons on the Railways concerned.

Again sometimes, owing to unforeseen circumstances like interruption to communications due to breaches and accidents, or other mechanical troubles, wagons accumulate on one Railway which is not able to despatch these to the adjoining Railways to the extent received from them. This upsets the balance of movement on other Railways.

Centralized regulation of wagon movements is necessary as each Railway independently is not in a position to realise the implications of all movements. The daily transactions and details of movements are scrutinized by the Railway Board based on telegraphic information received through the Director of Wagon Interchange from all the junctions of interchange. The position is closely watched and any accumulation of wagons on any one Railway is remedied and the wagon balance on each Railway is maintained in accordance with the targets fixed. Registers showing the movement of wagons, both covered and uncovered, are carefully maintained and studied.

To the operating officer, the movement of wagons is like the movements on a chess board and, like the experienced player, he has to anticipate situations and take the decisions in advance, after careful consideration. The results of orders issued on a particular date in regard to loading to particular areas are felt within a couple of days, and the operating man has to visualise the changed positions of stock resulting from his orders.

Any lapse in the prompt issue of orders or in continuous vigilance reacts adversely on the movement of traffic. As at the Centre, similar control at varying levels is exercised at the Railway headquarters and at the regional and divisional offices. The unit of such wagon control is the Division/District control offices which are connected by telephone to all stations on the division or the region. The position at goods sheds, stations and yards is obtained every day and studied carefully by the control officers. A similar examination is made by operating officers at the headquarters offices so that the pattern of movements conforms to the directives issued from the Centre.

The control and regulation of wagons is a fascinating problem, and in a sense appears similar to the formation, massing and deployment of troops in the field. Every movement has to be part of the overall plan; every unit is important. Economy of movement has to be ensured; delays have to be eliminated.

As in the field, additional movements have to be speedily arranged to certain strategic areas. This may mean the weakening of some sectors, but the movements are necessary in the overall interests of the country.

It has been said that eternal vigilance is the price of liberty. Eternal vigilance is also the motto of every operating man. He has to watch and regulate the movement of rolling stock over the lifeline of the nation—the railways.

Second Plan: A Challenge To 1,000,000 Railwaymen

Plan Motto: "We Will Deliver The Nation's Goods"

BY G. PANDE, *Chairman, Railway Board.*

The Railway Board Chairman has given India's 1,000,000 a slogan for the second Five Year Plan: "We Will Deliver the Nation's Goods." The second Plan, he says, at once presents the Indian Railways with a challenge and an opportunity. To fulfil the onerous role allotted to the Railways, a massive expansion programme has been drawn up.

There has been much discussion in the Press and elsewhere in recent months about the role which transport in general, and the Railways in particular, will be called upon to play during the second Plan Period. By now the broad outlines of the massive expansion which the Railways are planning during the next five years are well-known. It is also known that we are going in for development of our transport resources in this big way in order to keep pace with the large industrialisation programme which forms the main feature of India's Second Plan.

It is not easy to get a correct appreciation of the Indian Railways as they appear today except against the background of conditions which have prevailed during the past two decades or so. The demands of the last war and the subsequent happenings had subjected the railway system in this country to a severe strain and had depleted its physical resources to such an extent that complete recovery has still not been possible.

During the past five years, the years of India's first Plan, the Indian Railways have been almost wholly preoccupied with the tasks of rehabilitation of their rolling stock and other assets. Not only have they had to provide for the sharply mounting requirements of current traffic, both freight and passenger, but they have had to make efforts to overtake the heavy backlog of maintenance and replacement requirements.

Considerable progress has already been made in the process of rehabilitation, but this is unlikely to be completed before the end of the second Five Year Plan, which went into operation a fortnight ago.

FIRST PLAN—BIRD'S EYE-VIEW

A brief reference to what has been accomplished during the First Plan period will not be out of place here.

Against the First Plan allotment of Rs. 400 crores to the Railways, the actual expenditure is likely to be of the order of Rs. 432 crores. Rolling stock alone has accounted for over Rs. 240 crores, covering the purchase of 1,589 locomotives, 4,837 coaching vehicles and 61,773 wagons both for purposes of additions to the stock and replacement of old stock.

All the lines dismantled during the war and recommended for restoration by the Central Board of Transport, except one, have been reopened to traffic. Five new lines which were in progress at the beginning of the Plan as well as seven more sanctioned during the Plan have been completed, and considerable progress has been made on a number of other new lines commenced during the Plan.

The Chittaranjan Locomotive Works, expected to produce 268 locomotives during the Plan period, have actually produced 337 locomotives, an improvement of 25 per cent over the target. The Integral Coach Factory at Perambur, where production was inaugurated by the Prime Minister in October 1955, is making good progress. The President laid the foundation stone of the Ganga Bridge on February 26, 1956 and the construction is well under way. Good progress has also been made in the provision of facilities at the Vishakhapatnam Port.

During the Plan period, the Railway workshops are likely to have turned out 3,415 passenger coaches, the Hindustan Aircraft Factory 706 coaches and manufacturers in the

private sector 230 coaches. In addition, private manufacturers would have turned out nearly 41,200 goods wagons. The annual indigenous building capacity for wagons was raised to over 15,000 units by the last year of the Plan.

FACING FUTURE WITH CONFIDENCE

In spite of large additions to the rolling stock and the extreme care taken not to condemn any stock which could give reasonable service, the percentage of overaged rolling stock on the line remains high. At the end of the Plan Period, 32 per cent broad gauge and 26 per cent metre gauge locomotives, 17 per cent broad gauge and 17 per cent metre gauge wagons, 24 per cent broad gauge and 26 per cent metre gauge coaches will be overaged.

Despite these handicaps, the Railways have given a good account of themselves. They carried 96.7 million tons of goods traffic in 1951-52 and are estimated to have carried 115 million tons during the last year of the Plan. This marks an increase of 25 per cent over the year preceding the Plan—1950-51.

The increase is partly due to additional stock and partly due to more intensive usage of existing stock. To mention only two outstanding figures of operating performance, the net ton miles per wagon day have reached the record figure of 571, while the wagon miles per wagon day have touched the figure of 46 on the broad gauge. Many of the traditional bottlenecks can no longer be regarded as such, as the position has greatly eased.

The financial position has also proved to be very sound. The income has increased from Rs. 294.14 crores (actuals) in 1951-52 to Rs. 314.10 crores (budget estimate) in 1955-56. The operating ratio rose during the first three years of the Plan, reaching 85.02 per cent in 1953-54, but in the following year, the fourth year of the Plan, it improved to 81.74 per cent.

It is with a feeling of satisfaction that the Railways look upon their achievement during the First Five Year Plan, and they now embark upon the second Plan with confidence which is fully justified by their past record.

SECOND PLAN TARGETS

It is by now generally well-known that the reduced Railway second Plan has been given an allocation of Rs. 1125 crores, of which Rs. 375 crores will have to be found by the Railways themselves from their own revenues during the Plan period. It has been agreed that, if the resources of the Railways exceed this figure, they will be allowed to enlarge their Plan accordingly.

Within the reduced allocation of Rs. 1125 crores, it will be possible to provide for an additional transport capacity of 15 per cent for passenger traffic and for 47 million tons of goods, including about 5 million tons carried over from the first Plan period.

While this increase is expected to meet fully the additional traffic load of 25 million tons on account of coal and other raw materials required for the expanding steel industry and its finished products, and a further 6 million tons of coal and 4 million tons of cement, it will leave a meagre margin for trade in other sectors of the national economy.

The small increase of three per cent per year in passenger train miles now planned, it is feared, will not help much to relieve overcrowding as long as passenger traffic continues to grow as anticipated.

A silver lining in this picture is the assurance given by the Planning Commission that the transport situation will be kept under constant review and that necessary adjustments will be made in the allotment to the Railways as the Plan progresses.

It is for reasons of finance that we have not been able to make adequate provision in another important direction. This is with regard to the construction of new lines. Only about 850 miles of new lines are being planned for the present, and these are mostly required in connection with the steel and coal industry.

Among the lines which are for general increase in traffic may be mentioned the Muzaffarpur - Darbhanga, the Ramshahi-Binnaguri, the Baraset-Besirhat, and the Guna-Ujjain lines. As more funds are made available to the Railways later it will be

possible to undertake more lines to open up the country.

DISTRIBUTION OF FUNDS

How is the proposed allocation of Rs. 1125 crores to be spent?

It is expected that about Rs. 380 crores will be spent on the procurement of rolling stock, about Rs. 66 crores on new lines, and Rs. 100 crores on the renewal and strengthening of track. Works intended to increase line capacity which include doubling, conversions to broad gauge, remodelling of important yards etc, have been allocated a sum of Rs. 166 crores. A sum of Rs. 65 crores has been provided to remodel workshops and set up new ones to take care of increased rolling stock.

On sections where steam traction can no longer haul the traffic satisfactorily, the Railway must modernise railway working, within the funds allotted. To this end, tracks will be electrified over a length of about 850 miles at an expenditure of Rs. 80 crores. It may be mentioned that up to now the route mileage of the electrified tracks on the Indian Railways is only 240 miles. On a number of sections, introduction of diesel engines is being actively considered.

Emphasis on providing amenities for rail users will continue unabated during the second Plan period. We have also provided Rs. 50 crores for housing for essential railway staff and for staff welfare measures. This is about two and a half times the sum spent during the first Plan period.

THREE ANNAS IN A RUPEE

I have given in broad outline, what the shape of the Railway second Plan is going to be. While the cut applied to the original Railway Plan will seriously hamper the fulfilment of our ambition to lift all the traffic that is likely to offer itself during the next Plan period, it must nevertheless be realised that even under the reduced Plan, out of every rupee's worth of investment in the whole country in the public sector, the Railways alone will claim three annas.

This sets the measure of the effort that India's 1,000,000 railwaymen will be expected to put in, if the allocation made to the Railways is to be put to the most beneficial use.

The second Five Year Plan poses many difficult problems before the Railways, but it constitutes at the same time, both a challenge and an opportunity.

It is an opportunity given to us railwaymen of all categories, to show that, undeterred by physical shortages, we will, to the largest extent possible, bridge the gap between the demands and resources through better human efficiency and management.

The Plan is also a challenge to each one of us to prove that Indian railwaymen are in no way behind railwaymen elsewhere in the quality of the work they put forth.

I have every confidence that railwaymen in India will take up this challenge in right earnest and work devotedly with the motto: "We will Deliver the Nation's Goods."



A Surprise Raid for Checking Ticketless Travel.
(75 lakhs of passengers were caught travelling without tickets last year)

N. E. Railway Faces Future Floods with Greater Confidence

BY B. ARORA, General Manager, North Eastern Railway,

Year after year, floods on the North Eastern Railway create serious problems for the Administration and its employees, dislocating traffic, disrupting normal life. Special steps including the chartering of planes to carry foodstuffs have often had to be taken in order to keep railwaymen at their posts of duty. As a result of precautions which have been taken, the North Eastern Railway faces the 1956 monsoon with greater confidence than ever before.

Floods and breaches have been playing havoc on certain portions of the North Eastern Railway during recent years. This, besides disrupting and dislocating normal life creates special problems for railway employees.

The major floods of July 1952, cut off the newly-constructed Assam Rail link for several days. There were approximately 180 breaches on the 260 miles of line between Siliguri in West Bengal and Amingaon in Assam. About 2,000 railway employees stationed at Alipurduar Jn. (near Cooch Behar in North Bengal) were completely marooned. Besides thousands of passengers were held up. Prices of essential commodities shot up sky high. All this threw a special responsibility on the administration.

The Railway's first duty naturally lay towards the passengers. They were moved in specially hired buses, inland water transport vessels and by all other available means to large towns from where they could get back to their homes. Their fares were refunded and emergency transport for their return was provided free.

VEGETABLES FLOWN

Measures were also taken to relieve the distress of the railway staff. One Dakota-load of potatoes was flown from Siliguri and distributed at cost price through the Railwaymen's Consumer Cooperative Stores, the cost of freight being borne from the Staff Benefit Fund. Rations were also issued to all employees irrespective of whether they were registered at the grainshops or not. These measures not only gave immediate relief to the

staff but also helped in bringing down the prices in the open market.

The monsoons of 1954 were even worse. That year, the floods made two onslaughts, one at the end of July and the other at the end of August. The worst affected areas in the July floods were between Siliguri Jn. and Fakiragram Jn. When news was received of these floods, it was just the time when the staff was expecting their normal monthly wages. The discontinuance of trains might have meant not only soaring prices but also non-payment of normal monthly wages.

ADVANCES GIVEN

Special steps were at once taken to disburse the normal salaries and also to give one month's advance pay from station earnings. A senior accounts officer and a personnel officer were installed at Siliguri to supervise prompt payment of the salaries and advances.

The floods in August were far more severe. An aerial survey was conducted of the entire flood-affected area and the welfare inspectorate was asked to render assistance and relief.

Three months' salary was given as interest-free advance to the affected staff. The advance was recoverable in 36 instalments. A total of over one crore of rupees was advanced in this manner. The usual procedure in making payments of the advance was done away with and the welfare officer who moved from station to station paid the money to the staff on the spot with the result that the money was in the hands of the staff within a few hours of the sanction.

As expected, the prices of essential commodities had risen abnormally. So, foodgrains, mustard oil, salt and other essential commodities were despatched. Hundreds of maunds of wheat was taken across the breaches by animal transport and, where necessary, food was transported by air. Special dakotas were chartered and arrangements made to permit them to land on private air-fields. All this was done through personal contacts and telephonic sanction.

To avoid occurrence of epidemics, the district medical officer toured round the area and took special steps in instituting a number of prophylactic and sanitation measures. Paludrine was freely distributed and special medical-aid posts were opened at places where a large number of men were engaged on restoration work.

DIBRUGARH FLOODS

During the same period, Dibrugarh in Assam was threatened by the erosion of the Brahmaputra banks and water had entered a large number of residential houses. Similar measures were taken and a senior officer was deputed to co-ordinate relief measures like the distribution of advances and rations etc. Wagons were made available to house the staff whose residences were affected by floods and temporary sheds were erected on high lands with community latrines. Tube wells were installed. During 1955, serious damage was localised mainly at three places, that is, Dibrugarh in Assam, Siliguri in north Bengal

and Samastipur in Bihar. Even though the flood level at Dibrugarh was only one foot above that of 1954, yet almost the whole of the town remained submerged for a number of days. The losses suffered by the railwaymen consisted of damage to their houses and house-hold effects and extra expenditure incurred in moving out of the flood area.

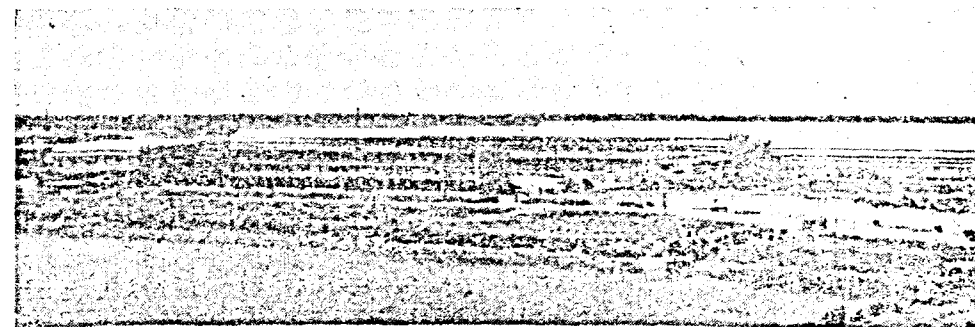
Prompt steps were taken by the Railway authorities to meet the emergency and similar arrangements as in the previous year were made for the relief of staff.

FREE RATION GIVEN

One week's free ration was distributed to the affected staff and cash gratuitous relief up to a limit of Rs. 50 per family was disbursed. The total cost involved in the gratuitous relief and free ration to about 1,700 employees at Dibrugarh came to about Rs. 72,000. The total amount spent by way of cash gratuitous relief and free rations for the staff affected in Samastipur area came to about Rs. 1,43,000. The total amount advanced to the staff came to over one crore of rupees.

During 1955, serious floods also affected the eastern districts of Uttar Pradesh. But there were no breaches. The railwaymen did their best to carry all the "relief" traffic and help the distressed.

Meanwhile, railwaymen have been at work strengthening the link route and other lines which have suffered from the past floods and to day we are ready to face the monsoons of 1956 with greater confidence than ever before.



A panoramic view of the I.C.F., Perambur.

Survey of all Central Railway Stations

BY M. N. CHAKRAVARTI, *General Manager, Central Railway*

The Central Railway has carried out an exhaustive survey covering all its 868 stations to find out what basic railusers' amenities are lacking, and as a result plans are being made to provide more amenities in stages. This Article relates how as a result of a vigorous drive the railway is now able to carry more traffic. Plans are also under way to run faster trains on certain sections.

The first Five-Year Plan commenced with the Central Railway's assets badly in need of rehabilitation. Traffic increased during the war period and has continued to increase thereafter, and this had to be carried with attenuated and overage assets, by making more intensive use of them.

Considerable arrears had to be made up in track renewals, replacement of locomotives and rolling stock and other assets and this claimed the major portion of the funds available. Although rehabilitation was the keynote, the needs of increasing traffic were not overlooked. During the first three and a half years of the Plan period, additional traffic facilities were provided on a somewhat limited scale to cater for the increasing needs of traffic, then estimated to be of the order of 2 per cent. per annum.

It was towards the end of 1955 that the Railway Board directed the individual Railways to prepare themselves to carry 20 per cent. more traffic during the busy season of 1955-56 than what they did during the busy period of 1954-55. This entailed considerable expansion in the Railways' handling capacity.

INCREASING TRAFFIC CAPACITY

Additional crossing and block stations had to be provided to increase line capacity. Loop lines had to be lengthened and additional loops provided at a number of stations. It was estimated that on the Central Railway 19 new crossing stations would be required and additional lines would be necessary at 20 Block stations. The handling capacity of 16 all through which the stream of traffic was to be improved, including some wharves. Improvement of terminal faci-

lities in large goods-sheds, facilities for transshipment at break-of gauge junctions, facilities at repacking points were required to be undertaken. It was also considered necessary that efforts should be made to improve locomotive usage and wagon usage by cutting down drastically all avoidable delays. Detailed plans had to be chalked out to achieve all these objectives.

By the end of November 1955, most of the works planned were completed. For example work went on unceasingly during the monsoon in Bombay last year to improve the goods-shed facilities at Wadi Bunder, to enable it to handle an additional 100 wagons. Extensive work was under taken at the Ghorpuri transhipment shed which was generally considered a traffic bottleneck. Traffic moving across this junction was previously subjected to quota restrictions, but from the middle of December it was possible to do away completely with the quota regulation and to allow booking freely.

A number of improvements of a minor nature were effected in loco workshops and running sheds to improve the out-turn of locomotives. Special efforts were also made to improve the availability of wagons. As many as 8 to 10 per cent of the total number of wagons on the Railway used to be out of commission due to damages. Through a vigorous drive, it was possible to bring down the number of damaged wagons to 3.5 per cent. Besides, a number of wagons which had outlived their existence were "rehabilitated" temporarily. To reduce the incidence of hot axles on goods trains, a number of "first aid" posts were set up near marshalling yards.

Thanks to the co-operation of the mercantile community, it was possible to improve further the availability of wagons for loading by keeping goods sheds open for longer hours than before and by sometimes loading in open wagons commodities which used to be moved only in covered wagons.

BETTER OPERATIONAL EFFICIENCY

As a result of these steps it is heartening to note that the number of wagons loaded on the Central Railway (B. G.) during the six months from September 1955 to February, 1956 was ten per cent more than what it was during the corresponding period last year.

The efficiency of operation on the Railway improved enormously during the six months. For example, the figure of "wagon miles per wagon day", which is a measure of the number of miles a wagon moves in one day on an average (inclusive of delays at terminals, transshipment and other points), improved steadily from 53.5 in February 1955, to 59.6 in February, 1956. Likewise, the "net ton miles per wagon day", which is a measure of the quantum of traffic moved by a wagon each day, improved from 714 in February 1955 to 808 in February, 1956.

During the second Five Year Plan we will be called upon to carry more and more traffic. We are gearing our administrative machinery in order that we may fulfil our future obligations.

While we have been able to achieve substantial results in the field of goods movement, we have not been able to achieve much in regard to passenger train services. The punctuality of passenger carrying trains has unfortunately been low and we are making considerable efforts to improve it. Owing to limitations of rolling stock and locomotives, it has not been possible to effect substantial improvements in the quality of the existing train services or to improve their frequency, except on a few branch lines.

Efforts to procure additional stock to augment the Bombay electric suburban services have, however, just borne fruit and the first consignment of coaches from Italy has just arrived. In the coming months, we hope to receive many more coaches. While every effort will be made to run additional trains, the need for replacing old and worn out stock will have to be constantly borne in mind.

FASTER TRAINS

As a result of signalling improvements, it would be possible in the near future to run faster trains on certain sections. The Itarsi-Nagpur line which lies along the Grand Trunk Express route, is being provided with a new type of signalling called "Multiple Aspect, Upper Quadrant Signalling". When this is completed and the sections between Wardha and Balharshah is relaid with 90 lb. rails, it will be possible to speed up the Grand Trunk Express train further.

It is interesting to know that the twelve-coach corridor Janata train between Delhi and Calcutta, which was inaugurated on October 2 last year, was built in the Matunga workshops on the Central Railway. The experimental First class chair car, now running on the Northern Railway, was also built in the same workshop recently.

PASSENGER AMENITIES

Last year an exhaustive survey was undertaken by the Central Railway on the nature and extent of deficiencies in basic amenities provided at all its 868 stations and also of the additional amenities needed at the bigger stations. The deficiencies at some of the stations are being made up in the current year's amenities programme but there will still remain a number of amenities to be provided at different stations.

Amenity works costing over a lakh of rupees have been carried out at Ahmednagar, Chalisgaon, Kings Circle, Burhanpur, Banda, Belapur, Gadarwada, Itarsi, Manikpur, Jalgaon,

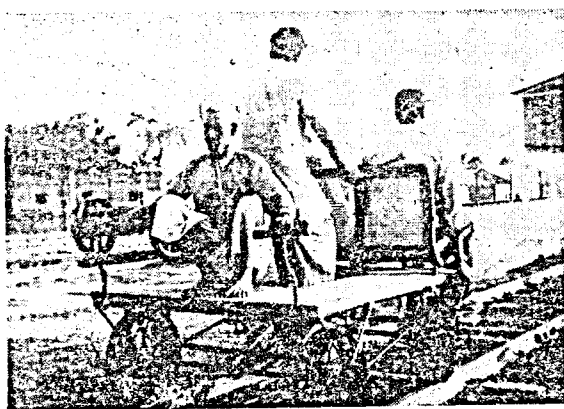
Masjid, and Satna—to name a few stations. At a number of other medium and small stations, a number of works have been carried out including improved water supply, waiting arrangements, food stalls, surfacing and cover platform. Some of the major works are now in progress at Jabalpur, Sholapur, Rajaki-Mandi, Agra Cantt., Nasik Road, Katni and Kurnool Town stations.

In connection with the 2,500th anniversary of Lord Buddha, extensive amenities have been provided at Sanchi station, including extension, raising and paving of platforms, construction of two retiring rooms, etc. at a cost of about Rs. 2,00,000.

DIVISIONAL SYSTEM

A chronicle of achievements in other spheres of activity of the Central Railway would be

too long to mention within the compass of a short article. We would, however, draw attention to a very significant change in the system of administration. It is now widely realised that decentralisation and devolution of authority are essential for the successful administration of a big unit like the Railway. The introduction of the full divisional system of working where it does not exist, with a wide measure of decentralisation of authority, has been decided upon by the Railway Board as a matter of policy. The Central Railway which has an organisation very close to the full divisional system has introduced it on two of its existing divisions viz. Secunderabad and Bombay. Very active steps are being taken to extend it to the remaining divisions, and before the next year we hope that it would have been introduced in practically all the divisions.



A labour saving cycle trolley designed at the Railway Research and Testing Centre at Lucknow. It weighs less than $3\frac{1}{2}$ mds. and can be paddled by one man carrying a load of 1000 lbs. at a speed of 12 miles per hour.

The old lady smiled sweetly at the young American airman, the only other occupant of the railway carriage they were travelling in. He smiled back and went on chewing at a piece of gum.

After a few minutes the old lady leaned across and said to him: "I'm awfully sorry, youngman, but it's no use your talking to me. I'm completely deaf."

(C. Rly. Magazine.)

Calcutta Suburban Railway Electrification

BY S. SARANGAPANY, *General Manager, Eastern Railway*

Government's decision to electrify the Calcutta suburban lines and Calcutta Gomoh line is likely to revolutionize railway transport in this area. The running time will be greatly reduced, the smoke nuisance will be eliminated, and a substantial saving effected in the recurring expenditure.

A revolution in rail transport in the Calcutta area has been heralded by the decision of the Government of India to electrify the entire suburban area within a radius of 60 to 70 miles of Calcutta and to extend electrification on the main line of the Eastern Railway up to Gomoh during the second Five Year Plan.

The necessity for electrification beyond Gomoh up to Moghalsarai has also been accepted, but a final decision has not yet been taken.

The gross cost of the electrification up to Gomoh is estimated at Rs. 60 crores. The total route mileage to be electrified is 600. The corresponding mileage of running lines excluding loops, siding, etc. is approximately 1,250.

A total of 118 electric locomotives and 580 electric multiple unit coaches is to be acquired, releasing 590 steam locomotives and 1,060 passenger coaches.

ELIMINATION OF STEAM LOCOS

By the end of 1959, all steam engines will be eliminated in the Calcutta and Howrah areas. The steam engines now used in the yards at Calcutta and Howrah will be replaced by diesel engines, as the cost of electric locomotives plus overhead equipment will be disproportionately higher.

The frequency of suburban service will be increased to provide a service at least every 15 minutes at every station during the morning and evening peak period, and the running time will be substantially reduced, in some cases by as much as 50 per cent. The running time of mails and expresses between Howrah and Gomoh will be reduced by an hour.

S. 4

Overcrowding will largely have been eliminated and the line capacity greatly improved, to the extent that no traffic, whether passenger or goods, would have to be refused. The smoke nuisance would be eliminated and the convenient and comfortable train services would give the much needed encouragement to Calcutta residents to move into the suburbs. The coalfields would be brought much nearer to Calcutta in point of time by a greatly improved passenger service.

All this will be achieved at a great saving in operational and maintenance costs. The saving expressed as a return on the capital cost will be repaid in the course of some seven years of operation.

WHY LATE START IN CALCUTTA?

This statement may appear too good to be true and it may well be asked why the railways have delayed the introduction of electric traction in the Calcutta area by almost 25 years compared with Bombay and Madras. There are also people who question the wisdom of electrifying the railway in the heart of the coalfields, where coal is naturally available at the lowest price. The general economic principle relating to the introduction of electric traction, with particular reference to the conditions obtaining on the Eastern Railway, are explained in the following paragraphs:

The main factors that affect the cost of an electrification scheme are the comparative costs of coal and electricity and of steam and electric locomotives and coaches and other equipment. In considering these, certain broad facts must be understood. The thermal efficiency of a steam locomotive is far less than that of a stationary thermal plant. After allowing for

losses in transmission from the power station to the driving wheels, the electric locomotive is found to be three to four times as efficient as the steam locomotive. In other words, for the same amount of work on the track, an electric traction system would use only a third or a quarter of the amount of coal required for the steam locomotive system. If to this is added the further saving brought about by the utilisation of low grade coal (having a high ash content) in thermal power stations, it will be readily understood that the cost of power will be considerably less under electric traction than under steam.

The electric locomotive scores over its steam competitor also in its much greater availability in a working day. The steam locomotive requires a considerable amount of preparation before and after use and is hardly available for 10 to 13 hours out of 24 hours for work whereas electric locomotives are available for 95% of the time. This is reflected in the annual mileage which can be obtained from the two types. Experience has shown that an electric locomotive can ordinarily do the work of 2.5 steam locos; as the present day cost of a 3,000 H.P. electric loco is about twice that of the W.G. steam locomotive, the capital cost electric locomotives may be assumed to be lower than the cost of steam locos for similar duties.

The cost of servicing and overhauling electric locomotives is far less than that of steam locos. The staff required on the foot-plate and in locomotive sheds is again considerably less in the case of electric traction than for steam operation.

Again, in the case of electric traction, the increase in traffic density does not appreciably increase the cost of service. In fact, because of the elimination of certain cumbersome and expensive processes like watering and fuelling, the cost of service per unit decreases in direct proportion to the increase in traffic.

This makes it clear why electrification in the Calcutta area has not been found economically

justified during all these years. Comparing the suburban traffic in the Bombay and Calcutta areas, a report prepared in 1924-25 showed that although the population of greater Calcutta according to the 1921 census was 13.28 lakhs compared to Bombay's 11.76 lakhs, the two lines then serving Bombay carried approximately 37.7 million passengers during 1923-24 against 25 million passengers, distributed over no less than ten main and branch lines emanating from the two terminal stations of Howrah and Sealdah.

The density of traffic on any one line was low and in the context of the then prevailing cost of coal, electrification would have been expensive. The second world war and the partition greatly increased the Calcutta suburban traffic. With passenger traffic nearly three and a half times the prewar level the saturation point at both Howrah and Sealdah for moving passengers by steam trains was reached and no appreciable improvement was possible without electrification.

If the estimate of increase of passenger traffic consequent on electrification is belied by actual results, the return on capital investment may not be considerable; there might even be a loss. If, however, all the services on the electrified section, viz. mails, expresses, through passenger trains and goods services are operated under electric traction, the return on capital investment would be better and a more stable economy would be achieved.

RETURN ON CAPITAL

For the section of the ex E. I. Railway east of Burdwan, it has been ascertained that at the present rate of fares and with an assumed increase of 100 per cent in the suburban traffic, the net income will give a 6.19 per cent return on the capital cost. On the other hand, estimates framed for complete electrification of all traffic over the same areas have shown that the return on capital will be about 10.94 per cent.

It is now possible to understand how electrification can be justified in the coalfields areas where the cost of coal is naturally very low. Electrification schemes in coalfield areas require for their economical justification a somewhat higher density of traffic than in areas remote from coalfields, as it is necessary to spread the fixed cost of the stationary electrical equipment over a larger number of traffic units (ton miles) to counter the smaller saving in operational costs.

However, even the emphasis on higher traffic density may not be required, if low grade fuel could be used in stationary thermal plants. Such fuel is often unsaleable for other purposes and should be available at a particularly low cost if the load for transport is cut down by careful siting of the thermal station. The cost of electric energy derived from such a plant should compare favourably with the cost of Hydro Power and should make electric traction attractive even with moderate traffic densities.

ELECTRIFICATION COSTS

A few details regarding the Howrah-Gomoh electrification scheme may be of general interest. The total gross capital cost has already been mentioned as Rs. 60 crores. Out of this, the cost of new rolling stock is estimated at Rs. 36 crores. The present day cost of rolling stock which will be released has been estimated at Rs. 40 crores.

Electrification will also result in a certain number of wagons being released, firstly due to the higher average speeds of goods trains and the consequent reduction in turn round, and secondly due to the saving in coal consumption for departmental purposes. Credit for the wagons released therefore, further reduces the net capital cost which together with interest charges during construction has been estimated at Rs. 20 crores.

The saving in operating and maintenance expenditure consequent on electrification has been estimated at Rs. 3.08 crores. The return on capital is, therefore, approximately 15 per

cent. If electrification is extended to Moghalsarai, there will be an addition of Rs. 15 crores to the gross capital expenditure and the return on the total investment will improve to 20 per cent.

As already explained, the cost of released rolling stock at current market rates is slightly higher than the cost of new electric stock. In many countries of the West, the fact that the average cost of electric locomotives under present day conditions is approximately equal to or less than the replacement cost of the steam locomotives which they displace, has been accepted as sufficient reason for not including the cost of electric rolling stock in arriving at the cost of electrification schemes.

A very large number of steam locomotives on the Indian Railways are overage and overdue condemnation, and Government is committed to a policy of large-scale replacements. If during this period electric locomotives are purchased, there will be a corresponding net reduction in the purchase programme of steam locomotives, i.e. we will save on the purchase of steam locomotives at the present day costs.

The net capital expenditure shown above, therefore, correctly represents the actual additional investment by the Railways exclusively for the proposed electrification. In assessing the financial implications of any new scheme for electrification under present conditions, a rough method will, therefore, be to ignore the cost of rolling stock, as the cost of rolling stock will not be materially different, whether purchased in the form of electric stock or steam stock.

DIESEL VERSUS ELECTRIC TRACTION

The progress of diesel traction in U.S.A. has naturally focussed attention on the possibilities of this form of transport in India. The advantages of diesel traction are; higher acceleration and facility of multiple unit operation and the consequent increase in the loads of trains. But, economically, diesel

traction cannot be justified except in certain areas which are remote from coalfields and where electric energy is not available at reasonable rates. The principal reason is the very high cost of diesel locomotives compared to both steam and electric locomotives.

An average diesel locomotive costs two and a half times the cost of a steam locomotive of equal haulage capacity. At the present oil prices, the cost of fuel also shows no saving in comparison with steam locomotives. The main-line diesel locomotive has therefore, no place in the Indian economy except to a very limited extent, either for a temporary boosting of line capacity in saturated sections or in remote localities. The main use for diesels here will be for yard duties, where the provision of overhead equipment for electric locomotives is likely to be uneconomic.

In most countries of the world, there is a definite programme to gradually replace steam traction by electric traction. Holland has planned to do away with all steam locomotives within the next four years. The United Kingdom recently made public its policy of changing over partly to diesel and partly to electric traction at the earliest possible date. Japan has already stopped the manufacture of steam locomotives for the internal market.

In U. S. A. the replacement of steam locomotives by diesel locos has been in progress on a very large scale for some years. There was a case of even an electrified section being converted to diesel traction. Both these trends are now reported to be giving way to straight electrification. It is understood that

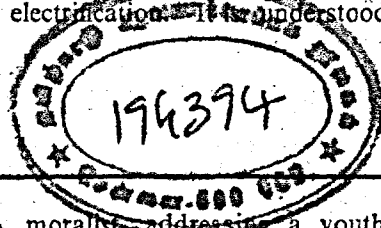
this change in policy has been dictated by the rapid development of nuclear power.

Experts are confident that within a few years atomic energy can be economically used in generation of steam at thermal stations, replacing coal; but with the present state of development, it is not considered economically possible to run individual steam locomotives with atomic energy. Electrification is, therefore, considered the only practical medium at present of utilising nuclear power for traction.

RACE FOR MODERNISATION

It is clear that the days of the steam locomotives are numbered. The Indian Railways have decided not to lag behind in the race for modernisation. The programme of electrification so far announced is by no means ambitious for a country of the size of India. There is little doubt that the establishment of the heavy electrical industry to which the Government is committed and the development of hydro-electric power in different parts of the country will hasten the progress of conversion to electric traction.

Referring to the eastern part of the country, it is interesting to note that the entire area between Durg and Jabalpur in the west and Kanpur and Lucknow in the north and the Calcutta area in the east can be conveniently fed with power from a grid connecting the Rihand, D. V. C. and Hirakud power systems. By the time electrification is extended to these points, other sources of power would have been developed and the way cleared for further expansion in all directions.



A moralist, addressing a youthful audience, thundered: "Remember, my young friends, when temptation comes your way, you must resist it—resist it."

"I'd like to," said one of the listeners regretfully, "but I'm always afraid it may never come again."

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Very few copies of the following are available:

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Receipts Accounts: Questions & Answers from 1947 to 49 and 52 to 54: Rs. 15/-. Questions and Answers for 55 will be ready by July.

Books & Budget: Questions & Answers—1947 to 49 and 52 to 54: Rs. 5/4. Questions & Answers for 55 expected to be ready by August.

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Railway Statistics: No. 297: very useful for Accounts and Traffic Departments Rs. 3-8-0.

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Principles of Accounting and Auditing: No. 98: Rs. 2-0-0.

Station Balance Sheet: No. 71: Rs. 1-0-0.
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S. R. A. S. Parts I and II—Question papers available for a number of years: details on application.

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