

1948
WESTERN AUSTRALIA

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FIRST
INTERIM REPORT
of the
ROYAL COMMISSION
appointed to inquire into
THE MIDLAND JUNCTION
WORKSHOPS
of the
WESTERN AUSTRALIAN
GOVERNMENT
RAILWAYS
(WITHOUT GRAPHS)

Presented to both Houses of Parliament by His Excellency's Command.

[SECOND SESSION OF THE NINETEENTH PARLIAMENT.]

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ROYAL COMMISSION

WESTERN AUSTRALIA } By His Excellency The Honourable Sir James
TO WIT. } Mitchell, Knight Grand Cross of the Most Dis-
JAMES MITCHELL, } tinguished Order of Saint Michael and Saint
Lieutenant-Governor. } George, Lieutenant-Governor in and over the
[L.S.] } State of Western Australia and its Dependencies
in the Commonwealth of Australia.

To Alexander J. Gibson Esq., of Messrs. Julius,
Poole & Gibson, of Sydney, Chartered En-
gineers:

I, the said Lieutenant-Governor, acting with the
advice and consent of the Executive Council, do
hereby appoint you Alexander J. Gibson of Messrs.
Julius, Poole & Gibson of Sydney, in the State of
New South Wales, Chartered Engineers, to be a
Royal Commission to examine, enquire into and re-
port upon—

- (a) The management, workings and control of
all branches of the Midland Junction
Railway Workshops of the Government
Railways in Western Australia;
- (b) the supply of local coal to the said Gov-
ernment Railways generally; and
- (c) such alterations and improvements in re-
lation to the foregoing matters, includ-
ing the management of the said work-
shops, as may be advisable for economical
and efficient working, having due regard
to adequate services.

And I declare that you shall by virtue of this
Commission be a Royal Commission within the
Royal Commissioners' Powers Act, 1902, as re-
printed in the Appendix to the Sessional Volume
of the Statutes of Western Australia for the year
1928, and that you shall have the powers of a Royal
Commission and of the Chairman thereof under that
Act.

And I hereby request you as soon as reasonably
may be to report to me in writing the result of
this your Commission from time to time as your
enquiries proceed, reporting firstly in regard to the
Midland Junction Railway Workshops, and finally
when your enquiries are concluded.

Given under my hand and the Public Seal of
the said State, at Perth, this 26th day of
June, 1947.

By His Excellency's Command,
ARTHUR F. WATTS,
Acting Premier.

GOD SAVE THE KING ! ! !

Royal Commission on the Midland Junction Workshops of the Western Australian Government Railways.

To His Excellency the Honourable Sir James Mitchell, G.C.M.G., Lieutenant-Governor of Western Australia.

May it please Your Excellency.

In accordance with the instructions of my Commission I have been examining matters affecting the management, workings and control of all branches of the Midland Junction Railway Workshops of the Government Railways of Western Australia. The position is such that I considered it advisable to give you an interim report dealing with some matters which, in my opinion require immediate consideration.

INTRODUCTION.

The inquiry opened on Monday the 7th July, 1947, and there were present as representing parties interested in the inquiry:—

Messrs. C. Reymond, Secretary for Railways; F. Mills, Chief Mechanical Engineer; P. C. Raynor, Deputy Secretary for Railways; R. J. Dumas, Chairman, Electricity Commission; A. R. Davies, President, Locomotive Engine Drivers' Union; E. Kenny, President, Metal Trades Council; F. M. Bone, Secretary, Railway Officers' Union; T. G. Davies, General Secretary, Australian Labour Party; A. T. Curtis, Acting Secretary, Australian Labour Party.

In opening the inquiry I made the following remarks:—

"I view the railway, as commonly referred to, as an organisation that is the combination of the necessary human beings, equipment, facilities, materials and tools assembled in various and suitable locations, in a systematic and effective co-ordination, in order to accomplish the desired objective of service to the community in the form of transport of people and goods from one place to another.

"I view the administration of this organisation as the process and agency which lays down the objectives for which the various components of the organisation and their managements are to strive and which establishes the broad policies under which they are to operate. It is also the work and planning and directing policy at lower levels of action.

"I view management as the process and agency which directs, guides and leads an organisation, or some part of it in the attainment of its general or special objective. Supervision is that part of management which undertakes direct face-to-face oversight of assigned tasks in order to assure correct and adequate performance.

"Inspection is that phase of supervision designed to assure that both quantity and quality of work or service rendered at individual jobs are up to standard.

"It is to these elements of the organisation to which this inquiry is directed, insofar as they are determined by the terms of reference of my Commission. It is of course obvious that within the organisation, as I view it, and as set out, there are varying levels of responsibilities with regard to the activities and associated services of the component parts of the organisation which may become the unified responsibility of a person or department. The limits of such responsibility must be assessed and defined.

"There are many functions of a major or minor nature in the organisation, and these may consist of operationally similar and closely related bodies of duties grouped together for the purpose of execution as a unified responsibility of a person or a department. Many of these functions within an organisation are fundamental and occur with more or less force in the various departments, sub-organisations or groups in deterring or assisting the attainment of the particular objectives for which the group is striving.

"There is the operation of the central service or process of producing what the group is organised to do; that is, production of material things for the achievement of particular services required from the group.

"In the over-all sense of the organisation there is the task of making known, promoting the use of, and having understanding of, the services produced; that is, relations with the community for whom the service is provided.

"There is the task of systematic recording, evaluating, measuring and costing with reference to the service that is being rendered by one group or department to any other group or department and so finally determining the price which individual members of the community must pay for the service they may purchase. That is, finance and accountancy.

"There is the personnel function dealing with the human relationships and procedures which effectively bring together the staff for the work of the organisation as a whole, or for its component parts, and for the purpose of providing such services as will educate the entire group and maintain and increase its energy and loyalty.

"There is, above all, the task of over-all co-ordination of assuring that production, distribution, services, finance and personnel all work together for the desired end or result, in terms both of the organisation and its structure and willingness to make it operate.

"It can be seen from the above that my view of organisation is that it and the various functions operating within it, are for the purpose of service to the community and not for the benefit of the organisation as a whole or for any of its component parts.

"This inquiry will necessarily deal with various details of the functioning of the particular department referred to the Terms of Reference of my Commission and the efficiency, or otherwise, of the group or groups within the department with which I am concerned. It is possible that the efficiency of a department or group may be affected by policies directed from higher authority, and which are outside its own control, or by the inefficiency of some related service outside the group, and it may be found difficult in some cases to formulate effectively the causes which affect the efficiency and productivity of a particular group.

"I cannot but be aware that there are events, economic, industrial, seasonal or political, the incidence of which may affect the free working of the organisation. The nature and time of these events can be correlated with the general activities of the undertaking and their effect perhaps assessed. Government policies with regard to State development may result in charges against the financial structure, which, unless clearly placed and adjusted, may make it difficult to evaluate the real efficiency of the undertaking in relation to its services to the general community.

"It will be the objective of this inquiry to evaluate these various factors, and it is to this end I shall ask the assistance and co-operation of the persons responsible for the various activities within this organisation in an endeavour to determine in what directions we can increase the effectiveness of this public service."

I informed those present as to the nature of the evidence I would require, setting out in some detail the methods to be adopted in its presentation. This information was to provide such facts with regard to the operation and control of the workshops and of the general railway operations affecting the workshops as I would expect to obtain from any undertaking of a similar size and carrying

out work of a similar nature. The inquiry was adjourned for a week to enable the parties to consider these matters and resumed on Tuesday 15th July, 1947.

Mr. P. C. Raynor appeared with Mr. F. Mills for the Commissioner for Railways and Mr. T. G. Davies appeared for the Railway Unions and the Colliery Miners' Union. Evidence was tendered by Mr. C. Raymond and Mr. F. Mills. These witnesses were examined at some length by me but at the end of the second day it had become quite evident that much of the information that I desired could not be obtained. On Thursday the 17th July, 1947, I informed the parties appearing before me that, in view of the evidence already received and the lack of information for which I had asked, and as the result of my own observations during my inspections of the workshops during the previous week, I considered it necessary to alter the method of my approach to the inquiry.

At this session I made the following remarks:—

"When I addressed this Commission first of all I drew your attention to certain, what I think are fundamental matters with regard to this organisation, and I want to call your attention to them again. About half way down the first page of the transcript notes I said this—

"I view the railways, as commonly referred to, as an organisation that is the combination of the necessary human beings, equipment, facilities, materials and tools assembled in various and suitable locations, in a systematic and effective co-ordination, in order to accomplish the desired objective of service to the community in the form of transport of people and goods from one place to another.

I stress that point. This organisation is not made for any part of the organisation, or for any group in the organisation. I stress that point because yesterday I had also to refer to the fact that there are certain things fundamental in management and administration which must be unfettered. It is no good disputes arising in regard to them. They are so fundamental that they must be part of the organisation. I want to clear that point as soon as possible. After very careful thought I made the following statement to Mr. Mills, the day before yesterday, when you, Mr. Davies, were not here—that it is the function of management to run these shops. It is not the function of the unions or the workmen, but that of management. I want that to be carefully considered because as far as I am concerned the question of politics, or anything of that kind entering into this does not come into my mind. I am concerned merely with the operation of the organisation. Therefore I shall rely on certain facts which I am endeavouring to get. I shall rely on my own observations because, fortunately or unfortunately, I have some knowledge of these things and cannot divorce my mind from that knowledge and experience. In many cases, while I want the facts, I shall therefore depend to a great extent on my own observations. I asked for certain information early in the inquiry, and set out the lines upon which it might be given to me. Again, I was envisaging an organisation which would be somewhat in line with modern trends. Going through the evidence yesterday it became evident to me that I could get answers to certain questions concerning certain material things and their condition, but that when it came to fundamental points the answers could not be given, because the organisation is just not there to give them. It is no use this Court beating the air or wasting time by merely putting down in the transcript records of things of the past that cannot and must not affect what is to be done in the future.

"I felt that we could possibly save a lot of time if we thoroughly understood one another in that way from the beginning. I would again call attention to those first principles that I set down when the inquiry began, because, to my mind, they are fundamental

things that must be considered in an organisation. I shall perhaps bring you back to them time and time again. Thinking over the matter last night—it has caused me considerable worry as to how best I can do the kind of job I am asked to do—I have perhaps to some extent altered my viewpoint in my approach to the problem, but I want you gentlemen to comment on my remarks if you do not like them, or do not agree with them.

"This organisation has grown from a very small beginning over perhaps 50 years, and has been inbreeding all the time. Things that started in a very small way and that were satisfactory while that state of affairs remained, have tended to persist and by and large—as far as I can follow the position—there has been very little expansion of the organisation regarding things that are now considered necessary in modern industry.

"I laid down—again on the first day of the inquiry certain services that have to be within any organisation and I tried to make it clear that I looked upon the various departments of this organisation as services one to the other, and not as ends in themselves. Accountancy is not an end to itself. The fact that it has to provide a certificate to someone at sometime is not the whole function of accountancy. It receives money and has to account for the money spent, but that is not its whole function. It is a service, and I want to ascertain how this service is functioning within the organisation as a whole; what help, what lead or direction it is giving to the other departments. The fact that we have not within this organisation the fundamental basis of a costing system is, to my mind, a very serious matter, and I want some thought given to it.

"Among the departments I instanced the case of personnel. It is not a nice word, and I do not altogether like it, but it does now annotate a certain kind of function in an organisation, which has to be provided as a service, and again I find that that does not exist.

"Quite frankly I am left, at present, a little at a loose end as to what we can do. However I have this in mind; this inquiry is of no use unless out of it we can suggest something that is obviously going to make the organisation function more efficiently, always bearing in mind that it is for the service of the public and of the community and has to help the development of the State.

"I am less concerned with getting evidence of all kinds of things that I can see with my own eyes, though I know that usually, in such inquiries it is desirable to get certain things down in the notes, but I feel that this is not my only job, and that out of the inquiry there must come some attempt for us to get together and, out of what we have, to see what we can do for the future. You gentlemen must help me in that regard.

"I can see the kinds of things that I should want, but I also desire to know the kind of things that you gentlemen want, bearing in mind always that this organisation exists for the service of the public and of the community. It was for that reason that I ceased taking formal evidence yesterday. We shall have to go on, but it is no use wasting time over the mere recording of things that exist and that belong to the past. Many of you know, just as well as I do, when you walk round those shops, that certain things must be done to straighten them up. I am speaking now as a technical man and the question of what can be done—I may be able to suggest something and may have strong views, which is a matter for the Government to take into account when I finally report—is a matter in which you can help me. When I am questioning any of you, and I shall have to deal with certain departments which I call service departments, get it out of your minds that I desire to criticise you. I do not. What you have is what has grown, and it is sometimes very difficult to get away from the direction in which a tree is growing. It starts with a slant in a certain direction and it carries on. How far can we go in straightening up that tree? While questioning you I may sometimes get off the track and into fields that I may not fully comprehend. If so, I want you to help me.

"On the other hand, I may be able to put a viewpoint which may help you, and if I can do so, I want to do it. I cannot get away from a certain amount of formality. I have to take evidence, but I do not want to take unnecessary evidence. I came to the conclusion last night that I could accept statements such as I have had from Mr. Mills which we are putting in the transcript after having it read piece by piece. I still want similar statements. If you have copies, you can read them and we need not waste time by going through them in detail. I would sooner stop operations for a day or two in order to give a chance to catch up on the reading. Do you understand what I am trying to do and do you generally agree that this will be of more real value towards getting this job done than by just sitting here and piling up matter in the typescript. How do you feel about it?"

After some discussion with the parties appearing before me the matter was left for them to consider and to make any objections that they might desire; Mr. Mills particularly was given time to reconsider the nature of the evidence he could put before me and in the meantime evidence from other witnesses was resumed.

Up till Thursday the 21st August, 1947, the following had given evidence before me:—

Date.	Witness.	Page.
15-7-47	Reymond, Charles (Secretary for Railways)	20
15-7-47	Mills, Frederick (Chief Mechanical Engineer)	39, 327
24-7-47	McKenna, Ezekiel (Industrial Staff Agent)	173
17-7-47	Bromfield, Walter Henry Cope (Comptroller of Accounts and Audit)	200
17-7-47	Hickey, Louis Thomas (Comptroller of Stores)	235
23-7-47	Cahill, Gordon Charles (Secretary, Boiler-makers' Union and Secretary, Metal Trades Council)	269
24-7-47	Deal, William Henry (Fitter, East Perth Running Sheds, representing Australasian Society of Engineers)	325
24-7-47	Davies, Alexander Ross (President, Loco. Drivers' Union)	326, 684
21-8-48	Marsland, Tom (Assistant Chief Mechanical Engineer)	388
29-7-47	Kent, Cyril Roy (Senior Chemist)	417, 530
7-8-47	Raynes, William (Works Manager)	458
29-7-47	Griffiths, Sydney (Assistant Works Manager)	509
7-8-47	Phillips, Leslie William (Superintendent of Technical Education)	555, 582, 1623
18-8-47	Downie, James Henry (Principal, Midland Junction Technical School)	603
20-8-47	Caradus, Edward (Chief Inspector, Post-Primary Schools, New Zealand)	616
18-8-47	Ellis, Joseph Arthur (Commissioner of Railways)	641
20-8-47	Newman, John Frederick (Organiser, Amalgamated Engineering Union)	709

The evidence so far placed before me by the various witnesses covered such general matters as staff organisation, staff training, costing, nature of equipment, workshop amenities, inter-branch relationships, etc. The condition of the shops and particularly the amenities provided for the workmen were at this stage found to be unsatisfactory and immediately led to the necessity of inspections being made of the running sheds and depots. These inspections were carried out between the 11th and the 15th August, 1947, and my opinion with regard to these various matters will be referred to in some short detail later.

Attached to this report is a series of graphs setting out the ton mileage of the railway system from 1900 to 1947. These are taken as giving some indi-

cation of the work done by the locomotives and rolling stock, and therefore, of the load imposed upon the workshops in keeping this equipment in efficient order for traffic purposes. Amongst the graphs are those showing the numbers of locomotives and wagons in use between the years 1900 to 1947, the additions made to this rolling stock, and the numbers either sold or written off.

These few graphed records in themselves, almost tell the story of the railways of Western Australia; they certainly tell the story of the age, and condition of rolling stock and equipment, and the load placed upon the workshops as a consequence.

ORGANISATION OF THE CHIEF MECHANICAL ENGINEER'S BRANCH.

Attached is a chart showing the sections of authority at various levels in the organisation. From this it can be seen that managerial responsibility rests with the Chief Mechanical Engineer and through him the four main divisions of the organisation, of design, superintendence, inspection and accountancy, are controlled. The workshops with their subdivisions of authority come under the workshops manager. The work of this officer, while containing some minor aspects of management partakes more properly, as should be the case, those of superintendence. He should be a superintendent rather than a manager.

Stores.

It can be noticed that in this chart there is no mention of stores. I am aware that there is a Comptroller of Stores for the whole of the railways, but have found it difficult to determine actually where his control of stores and spare parts, etc., ends, as many of the stores appear to be on issue to the workshops and depots and to have passed out of his control. I should expect to find a definite section of stores, particularly consumable stores, under the direct control and record of the Chief Mechanical Engineer. There would appear to be no control whatever of the issue of stores once they have been delivered to the shops or depots and it would appear also that they have been charged against particular groups of locomotives, wagons, etc., long before they are actually used on any individual locomotive or wagon. The cost of repairs must, therefore, be difficult to ascertain with any degree of certainty at any particular time. I could not ascertain who was really responsible for keeping the spare parts and stores of any kind in usable condition. This applies with considerable force at the outlying depots where the division of authority seems to lack clarity. Many articles are stored in the open and in some cases this may not be of great moment, but both under cover and in the open, finished machined parts, such as screw threads, journals, piston rings, superheater tubes, and other parts having machined surfaces are left unprotected from atmospheric changes, with consequent very noticeable deterioration entailing more work to make them serviceable for use.

There is considerable difference in various depots with regard to the orderly keeping and storage of materials on issue but in no case did I find any attempt made to protect and keep protected many machined items held in store. So far as the depots are concerned, the system of issue and records of disposal and the accounting necessary with regard

to stores material needs overhauling, as it is at present, in my opinion, too loose and liable to abuse. It may be necessary to deal with this matter, so far as stores in general are concerned, at a later stage.

Suggestions that will be made will tend to strengthen control of orders on and orders issued by the Comptroller of Stores. Incidentally it might be noted that on the 30th July, 1947, there were more than 4,000 works orders in process in the shops, each of which carried three or four sub-orders, and no system existed to keep check on how these various orders stood as to progress towards completion. There are 60 persons in the works authorised to sign sub-orders and it would appear that these sub-orders may require requisitions from the stores. It is also noted that requisitions for materials, parts, and equipment to be drawn from the stores may be signed by any one of 12 persons specially authorised, the only restriction being that no foreman shall sign a requisition for material exceeding £50 in value without being countersigned by the works manager, from which it would appear that these persons can obtain material to the value not very greatly less than the Chief Mechanical Engineer himself can purchase.

It can be seen that the proper allocation of materials and stores to any particular account or job can affect costs considerably so far as components are concerned, and in any case the records lag so far behind the actual production that the use of the records as a check on production efficiency becomes of little value. This matter requires further examination, particularly with regard to the nature of the accounts and how far the subdivisions of such accounts are carried through under the various standing maintenance work orders. (Exhibit J.)

Plant Engineer.

There appears to be no particular officer to whom would be assigned the duties of supervising the maintenance of all plant and equipment, checking it for accuracy, cost of maintenance, and making recommendations with regard to improvements in tools and general equipment based largely on his records of wear, maintenance and utility. This work appears to be left to the works managers at the present time and it is important that they should work in close co-operation with the plant engineer. This is one of the duties of which works managers could well be relieved so that they can concentrate on supervision, and progress of work.

Production Engineer.

There is no provision in the organisation for an engineer whose function would be to organise the production of all components required either for new construction of locomotives or wagons and for replacement parts for stores. Such an officer is urgently required to ensure the proper use of machines, issue of materials, routing of production and inspection, and the organisation of the department under such an officer for the issue of definite instructions with regard to the above matters is a necessary corollary to proper methods of costing. This work at present appears to be left to the works manager and his assistants and, to some extent, the foremen. There is much detail which should, in my opinion, be considered outside the province of these officers, and when a production engineer is ap-

pointed they will be relieved of such work and can devote their time to their prime function of superintendence, face to face supervision, progress of production, and maintenance of quality of work.

It might be pointed out that the engineer to be appointed to such a position must be of the highest grade and rank with the workshop manager or superintendent, the assistant to the Chief Mechanical Engineer, the senior chemist and other heads of departments of the Chief Mechanical Engineer's Branch. He must have modern experience and training in production planning and will need to work in close association with the drawing office and the shops. The success of the costing system and production planning, measured by the increase of efficiency, will depend upon the calibre and drive of the man appointed to the position.

Personnel Officer.

The organisation chart does not provide for any actual contact between the employees and the management. Over the last twenty years it has become increasingly evident that the "human beings" part of an organisation must receive close study, help and encouragement in many directions. The welfare of the employees cannot be left to be something of haphazard growth. It must be the care of an officer who is trained particularly in the development of human relationships within an organisation and has a full understanding of the needs and aspirations of the working force. The selection of such a man requires the greatest care. He is seldom found ready made within an organisation which too frequently may have considered the general welfare of employees, their claims for status, good working conditions and first class equipment with which to carry out their work, as something which was outside the functions of management. Today it is recognised as a very important function of management and it is realised that a contented happy working force pays dividends in the shape of better work, and greater productivity. The selection of a man with the specialised training in industrial psychology, welfare and hygiene is a matter of very considerable moment. Such an officer is a necessity in the Midland Junction Workshops at the present time and it is considered that very considerable help would be obtained with regard to the nature of the office through the Commonwealth Department of Labour and Industry and its counterpart in this State. The assistance of Mr. J. K. Jensen of the Commonwealth Secondary Industries Commission, Melbourne, could I think, be sought with regard to this matter.

Drawing Office and Laboratory Staff.

From my observation and from the evidence put before me, the drawing office and the laboratory require more staff even for the normal work of the organisation. In view of the reconstruction that is necessary in the workshops and the depots, and of the number of drawings for shop use that will be required in connection with the work of the production and planning engineer, the twenty draftsmen and engineers at present forming the staff will need to be increased. While this will be largely in the direction of draftsmen, there will be required at least three engineers of senior grade with good technical qualifications and experience and capable of initiating and carrying out design work with a

minimum of oversight. So far as the laboratory is concerned, the loss of Dr. Kent is to be deplored and his replacement with a man capable of supervising the varied physical and chemical testing work that has to be carried on by the laboratory may present some difficulty. The laboratory requires strengthening both as to staff and equipment, if the works processes are to be efficiently checked particularly the metallurgical aspects of the iron, steel and brass foundries. Heat treatment, also, as part of the physical treatment and testing of many materials for certain purposes, must be considered an important function of a laboratory.

Divided Authority.

The organisation chart (Exhibit G) also shows the directions in which the authority and duty of the Chief Traffic Manager and Chief Mechanical Engineer meet and in some cases overlap. From my own observation it is also evident that there is some overlapping with regard to the work of the Chief Civil Engineer with the activities which might be considered properly those of the Chief Mechanical Engineer.

So far as the workshops are concerned it is my opinion that the Chief Mechanical Engineer should have in his charge the whole of the works within the workshops area (excepting at Midland, the main stores). It does not much matter by what means the tracks, roadways, buildings, etc., are brought into existence, providing that their design, location and correlation of activities are to the requirements and satisfaction of the Chief Mechanical Engineer. Once, however, they are constructed, they should come under his charge and the capital and maintenance costs should form part of the charges upon his production. He should not have to wait the goodwill and convenience or financial strength of the vote of any other branch. The charges for alterations, repairs, etc., should be immediately upon the Chief Mechanical Engineer and carried out, if he finds it necessary by his own organisation or such outside help as he may decide. There are times when this can quite conveniently be the ways and works branch which could carry out work on demand without delay and be paid for doing it by the Chief Mechanical Engineer as with an outside contractor.

As a further instance of the uncertainty of the delegation of authority, I quote hereunder from the transcript of the evidence of Mr. Ellis. The question was raised by me when I was discussing some of the matters concerning the equipment at the depots. During my visits to the depots I had seen eight or nine Garratt locomotives stabled (or perhaps, rather, not stabled) in what I considered to be an unsatisfactory manner and the evidence given by the Commissioner for Railways in regard to the matter was as follows:—

The COMMISSIONER: There is another small thing for which I cannot find out who is responsible. I have seen eight or nine ASG locomotives—some at Collie, some at other places. I think one was at Merredin and three at Midland Junction. Those engines have been left in a very unsatisfactory state. At Midland Junction one has been stripped down, the pistons taken out, the gear removed and the bushes taken out of the rods. They have been ill-treated. Who would be responsible for that?

Mr. ELLIS: The C.M.E.

The COMMISSIONER: Then, Mr. Mills, it is up to you if they are in your charge. They are lying there with their pistons out and cylinders rusting and the rods getting pitted and the crank pins also. They are lying there getting into a bad state of repair and instead of it being a simple job to put them right, it is going to be a major task. Who is in charge? Who left them there?

Mr. MILLS: The particular shed foreman or district locomotive superintendent is responsible for these locomotives while they are in his shed.

The COMMISSIONER: They are in the open?

Mr. MILLS: Or near his shed.

The COMMISSIONER: They are on his dead-end, certainly.

Mr. MILLS: They are in his charge. I explained that at Collie.

The COMMISSIONER: Yes. It is the same at Midland Junction, is it?

Mr. MILLS: It is the same all over the system. I have direct control in the workshops.

The COMMISSIONER: Picking up these little things makes me feel: Where does the responsibility come in? Is it the Traffic Manager's, or the C.M.E.'s, or whose? If it is at the locomotive shed it is the Traffic Manager's responsibility.

Mr. MILLS: Yes.

The COMMISSIONER: Yet these are tools that the C.M.E. has to keep in decent repair and keep running at a reasonable cost and which traffic is going to use. Speaking as an engineer I would say that if I were going to have tools given to my charge I would keep them in as good nick as I could.

THE MIDLAND JUNCTION WORKSHOPS.

On the occasion of my first visit to the workshops I was guided around the various departments and activities by Mr. F. Mills, Chief Mechanical Engineer, and introduced to many of his senior officers. Other visits and inspections were made from time to time in which the general set up and equipment of the various shops was more critically examined. The main buildings housing the fitting and machine shops, carriage and wagon shops, locomotive repairs, boiler making, forge and foundry, though old, are substantial. Extensions have been made to some of these buildings and some of the disabilities existing in the older buildings have been rectified more particularly with regard to the maintenance of wide spacings between the columns (such as limits the free use of the floor in the fitting and machine shop) and the orientation of the roof lights.

There are many activities housed outside the main shops some of which can be considered satisfactory or capable of being made so (such as the tool room and electrical shop), some which can be adapted to other uses, and others which can be considered little more than humpies. The full utilisation of the workshops area, and even of the shops themselves, has been hampered considerably by the use of railway tracks inside the outside the shops for the transport of materials and products in process. The nature of the work in the shops demands that in certain sections locomotives, carriages and wagons must go forward on their own wheels and in such cases the tracks within the shops are necessary. This, however, does not apply to certain shops such as the blacksmith and forge, fitting and machining, and the foundry, and, of course, other outside activities such as the tool room, coppersmiths, track equipment and smaller activities.

The transport and handling of materials is unsatisfactory throughout the area and modernisation of this must be one of the first and major considerations, as

- (a) considerable areas can be made available for covered shop extensions; and
- (b) the floors in many cases can be improved and gangways provided for mobile equipment to be used throughout the works.

The action in regard to replacing tracks with properly formed roads must follow the preparation of the plans for the re-organisation of the workshops area and the shops.

It quickly became evident as the result of my own observations and the information placed before me by the representatives of the Commissioner and the unions, that the re-organisation of the shops was a job of such magnitude involving so many incidental factors or re-adjustment of working areas, re-organisation of machines and their location, welfare and amenities, that any consideration of expediency and temporary arrangements must be ruled out.

The planning of the utilisation of the area, the extensions and re-grouping of the shops, the provision of new equipment and the re-arrangement of efficiently usable existing equipment, the provision of employee amenities (canteens, washrooms and showers, closets and urinals, lockers, etc.,) must be DONE AS A WHOLE.

Each individual shop and section of the works would of course require its own detailed plan and arrangements, and in some cases such planning would involve an entirely new outlook with regard to the methods to be followed in production. This may be taken to apply particularly to the foundry and the forge shop, in both of which methods and equipment can be mechanised and improved and conditions from a health point of view brought within range of modern practice.

The details of these matters are not dealt with in this report as the methods to be adopted in modernising the establishment must be the result of careful and close study by competent persons. I have confidence that the senior officers of the organisation are aware of the necessity for change and are capable of finding solutions to the many problems that will arise. I could point out many details of deficiencies in equipment and methods and many of these have been dealt with when taking evidence, but the position can be clearly seen from a study of the graph in which is depicted the number and age of the various machines in use throughout the shops.

As one case in point, it might be stated that the conditions in the foundry with regard to the methods employed in dressing castings, handling sand, and preparing charges for the cupolas or melting furnaces, are unhealthy, out of date and cannot ensure the production of high grade goods. Casting twice a week entails unnecessary congestion on the floor and unnecessary handling of boxes and materials. There is ample area in the foundry, in my opinion, to provide for all the work in the way of castings required by the organisation. If casting is done every day and modern methods adopted of storing and handling boxes, conditioning and supplying sand, the charging of the cupolas and

furnaces from properly equipped storages re-organised, ventilated dressing tables and the use of sand or shot blast cleaning chambers introduced, there would be ample room in the foundry for its various activities.

Machine Equipment.

The age and condition of the present machine equipment is, I think, adequately shown on the graph previously noted. Except for the new machines recently bought, as can be seen from the graph, the percentage of old machines noted as bad was approximately 21 per cent. Those listed as fair on this graph (38 per cent.) consist of many machines which are tending towards obsolescence as well as machines which might be considered to have a useful life. Those listed as good (41 per cent.) may be considered to have proper utility value for the class of work passing through the shops. The parsimony which has existed over so many years with regard to the purchase of equipment to meet the growth of traffic has in itself engendered a spirit of dissatisfaction amongst employees who cannot but be aware of the poor and unsatisfactory type of the tools with which they work. Unfortunately, there has been no means of checking the relative efficiency of the machines in use because any system of costing which would enable this to be done is non-existent. Suffice it to say that the equipment as it exists is quite inadequate, in many cases unsuitable, and a very large proportion of it should be scrapped so as to provide space for more modern equipment.

On the graph referred to there is plotted a number of machines that have been written off some time ago. Unfortunately, the number is so small it is difficult to read it on the graph. There seems to be no adequate provision in the financial set-up of the railway organisation which enables obsolescent and inefficient machines and equipment to be scrapped and written off.

In the evidence given by representatives of the unions particular stress was laid on the lack of amenities in the workshops. This was evident, so far as the workshops were concerned, as a matter of general observation. From any point of decency and suitability, the conveniences provided would not in any way meet modern requirements. They were neither sufficient in number and where centrally located provided the bare minimum as to quality and number. The evidence indicated that this situation was not confined to the workshops but that the depots also were lacking in this regard and the request was made that visits should be paid to the East Perth running sheds. This was done and the conditions observed were such that it was considered advisable to visit other depots in different parts of the State. This question of amenities as a whole is dealt with more fully later in this report.

"HOUSEKEEPING."

Under the term "housekeeping" come all those things which attain to cleanliness, tidiness, and order within the workshop or depot areas. So far as Midland Junction itself is concerned, with the exception of the area adjacent to the main offices, little attention has been paid to the conditions that obtain both in the shops, and in the yards and areas immediately

surrounding them. Scrap, spare parts, and material in process, are deposited in any place that seems convenient, and the consequent deterioration of some finished products, due to storage in the open, has been referred to previously. In the shops, materials in process clutter the floors and this has been largely due to the methods followed in production and the lack of planning in connection therewith. Lockers generally are old and badly placed, interfering with light and floor space, and acting as depositories for tools of various kinds which should more properly be placed at a central shop location. Machines are dirty, lacking paint; skylights are unclean, and the construction of the floors has been referred to previously as affecting cleanliness. There has been some evidence of attempts at cleaning up but the matter is one which requires constant attention and working to planned methods with regard to it.

Places round the shops where it is considered necessary to store materials and tools should be carefully located and arranged for the purpose for which it is proposed to use them. Scrap should not be allowed to be deposited except at definite and remote areas from which arrangements can be made for its disposal or sale.

A proper salvage campaign assiduously followed through would save a large amount of material which, with a little attention, could be returned to store for re-issue for use as required. I think it quite likely from my observations of the works areas that the value of materials to be salvaged and properly dealt with, would not only pay for the salvaging but could provide a fund which would go some distance towards maintaining shrubberies and garden plots where opportunity offers, adjacent to the shops and thus considerably improve the working conditions. Grassed areas, for instance, properly maintained, keep down dust and this in itself is a matter of importance with regard to wear and tear on equipment. Experience has shown that the provision of these garden plots and shrubberies at convenient places, effectively stop the careless dumping of scrap materials and cleanliness becomes a matter of pride amongst the working force. Good "housekeeping" is part of good working conditions, and is a potent factor in maintaining workshop morale.

ACCIDENTS AND SAFETY MEASURES.

Visiting the ambulance room I was informed by the Sister-in-Charge that accidents coming to her were between 11,000 and 12,000 per annum. Most of these were of a minor nature, but, as she rightly pointed out, many of them were only a hair's breadth from being serious cases.

While I was there a man came in with an injury to the eyebrows. Quarter of an inch lower and he would probably have lost the sight of his eye. The accident rate in itself indicates a state of affairs which requires serious attention, being over five accidents per year per man employed. I can find no organisation corresponding to that in most modern manufacturing industries of safety first education. The cost of these minor accidents must be great. There is need for a definite attack on the accident rate and every attention must be paid to inculcating ideas of accident prevention in all sections of the works. It was noticed during inspection both of the workshops and the depots that protection was not

fully provided to moving belts, chains, pulleys and other moving parts of machinery. There is available from the publications of the Commonwealth Department of Labour and Industry much information as to the matters which tend to a reduction of accidents, such as good "housekeeping," proper lighting, and the painting of machines so as to preserve contrast between the work and the machine background. This is not a matter that can be dealt with by hit and miss methods of expediency. It requires serious study and thought, and co-operation with the Department of Shops and Factories and the Chief Inspector of Machinery with regard to the observance of such regulations as they may have dealing with the matter. However, whatever these regulations may be, it is a matter about which the workshops organisation itself should be seriously concerned.

DEPOTS AND RUNNING SHEDS.

Running sheds visited were East Perth, West Midland, Pinjarra, Bunbury, Collicie, Narrogin, Merredin and Northam. None of the running sheds or depots visited could be considered satisfactory from the point of view of buildings, equipment, working conditions or amenities for the resident or floating staff. They were all bad, but some were worse than others. With the exception of Northam, where an attempt had been made to provide reasonably good barracks for the use of the train crews which move in and out of the depots, (but even in this particular instance a little more thought and a little more money would have provided arrangements more suited to the requirements) amenities of any kind could be considered non-existent from any consideration of decency and suitability.

The buildings and offices were old and dilapidated and there was very little cohesion in the arrangements of the working sections one with the other. Both the running and repair sheds were inadequate for the service they have to perform. Pits in many cases were too close together and did not provide working space between engines when two lines of pits were occupied. Pits were shallow, too shallow in many cases, poorly drained and badly in need of re-conditioning, floors were rough, generally old sleepers set on an earth bed and quite impossible to wash down and keep in a sanitary condition. Clearances between entrances to the sheds and many of the locomotives being stabled, were insufficient, creating a danger point. Benches, lockers, workshop equipment were totally inadequate for the purpose. Machines in many cases dated back to the 1890's seemingly rejects from Midland Junction or part of the early and original installation. In a few cases an all geared lathe was found, evidently of recent installation. The consequent slowness of work and its possible poor quality with its inevitable effect on the men trying to keep locomotives in running order were only too evident.

In general, the yards around the sheds were untidy; usable material and scrap were in some places mixed together; stores and spare parts were badly looked after, causing unnecessary work and delay in repairs. Lockers in some cases were home made but where they had been supplied to what had some time or other been a standard they were poor in design so far as the storage of the individual fire-

men's and loco. drivers' equipment was concerned, and could hardly be considered hygienic for the holding of men's clothing. Here again the system which seems to be ingrained in the minds of the senior members of the organisation that money must not be spent has led to the consequent inefficient and defective service, with but little thought, so far as one could see, to what must be the final result of such a policy persistently pursued. Money must be spent if money is to be saved, and the unwillingness of the Treasury or Parliament to make proper provision for the upkeep of such equipment and its writing off and reconstruction when it becomes unsuited for its purpose is reflected in the present condition of the system.

In giving evidence before me, the Commissioner of Railways, when questioned in regard to these matters, agreed almost entirely with such statements as I have made above, and there are many pages in the transcript which deal with the question of the maintenance of the workshops, the depots, and their equipment. To quote from the evidence on page 662, after questions by me in regard to lack of maintenance:—

The COMMISSIONER: I can appreciate your point with regard to expensive notions, but the one thing I did gather from my examination of the workshops and my trips around the depots was that the saving of money qua money has been carried to such an extent that efficiency has been seriously and almost hopelessly prejudiced.

Mr. ELLIS: I cannot challenge that statement because money has not been available to do things that we knew must and should be done.

And again on page 608 the Commissioner of Railways stated:—

"With regard to Northam, and other depots, there are places that annoy me every time I inspect them just as they offend your engineering sense, but when I am faced with the position that I am allowed only a limited amount of money and that my system is losing this year one and a half million, I have so many things requiring to be done that I have to make a selection."

After further questioning and discussion, I made the following comment:—

"I am also clear that with the present way in which the accounts are presented (and the statements are necessarily accepted by the public) your organisation is being blamed for a state of affairs of which it is not the prime cause. It is the system that is bringing you into this state. If a business were to be allowed to drift on as you have been forced to drift on, it would be bankrupt, and you are fast getting to the stage where you will no longer be able to give the kind of service you should."

Mr. ELLIS: I have already warned the Government of that.

The COMMISSIONER: It is not only what you say is necessary. It is absolutely necessary. The way you are carrying on at present you are riding for disaster.

Mr. ELLIS: As I told you, I have already warned the Government of that phase; and, as I mentioned in my statement, certain things must be done unless we are to face a complete breakdown of railway transport.

Towards the end of my questioning the Commissioner of Railways, I had been referring to certain lack of organisation with regard to tools used on machines etc., in the various workshops and there was some discussion between Mr. Mills, Mr. Ellis and myself with regard to some of these de-

tails of organisation. Arising out of this matter the following is quoted from page 682 of the transcript:—

The COMMISSIONER: The foremen and sub-foremen seem happy about it.

Mr. MILLS: Yes, because they have been brought up to it. When a man of 50 has been brought up on that kind of thing his habits are not easy to break. I cannot sit on top of each man all the time.

The COMMISSIONER: I am not trying to blame anyone, Mr. Mills, but to see what has to be done, and the kind of organisation we must get.

Mr. MILLS: That picture is very clear in my mind.

The COMMISSIONER: I will have to make it clear to somebody else.

Mr. MILLS: I do not think it is so much a matter of buildings in the first place, as of organisation, and it means money.

Mr. ELLIS: That is the whole thing.

Mr. MILLS: You mentioned, Sir, the stocks and dies at Midland Junction. I know about them and about some of the other "lousy" tools that are being used, but I cannot give them new tools as I have not the money. It is true that a set of stocks and dies may cost only £2 or £3, but it costs that much at a great many places, and to supply new stocks and dies all round might cost hundreds of pounds.

The COMMISSIONER: Yet they should be there.

Mr. MILLS: They should be, but that is the reason why they are not there.

The COMMISSIONER: That is why I feel it is a major operation. I would mention the inspection trolleys, motor driven, that you have. At one depot I think there were 79 such trolleys.

Mr. MILLS: I think there were 70 at Narrogin.

The COMMISSIONER: That is a large number of vehicles, and I would expect to see there at all events something of the nature of a first-class country garage to deal with them, but that man had no tools. There is a big load to be carried there.

Mr. ELLIS: That is so, but it will take us some years to work off the load even if you can induce anyone to give us the necessary funds. I put it to you strongly that we have not accepted complacently the conditions that you have seen.

The COMMISSIONER: I have heard strong protests, and I am trying to get a protest from you now.

Mr. ELLIS: We have definitely seen the need for these things but one cannot make bricks without straw.

The COMMISSIONER: You do not like the present financial set-up and you do not like the present state of your equipment or of the gear you have with which to run the railways?

Mr. ELLIS: I do not, very emphatically.

These are serious statements and it is probable that the state of affairs disclosed by the evidence and my personal observations apply within the organisation to matters outside the orbit of my inquiry into the Midland Junction Workshops, and the situation needs to be dealt with more fully at a later date. Examination of the annual reports shows that the present Commissioner and his predecessors have drawn attention frequently to the drift with regard to finances, equipment and efficiency, and there appears to have been no real effort made by the Governments concerned over these very long periods to meet the situation that was arising. With the result that so far as the workshops and the depots are concerned heavy re-organisation and reconstruction have become necessary and the cost of this will have to be faced.

It is to be noted from the information recorded on the graphs attached, that while the load on the shops as represented by ton miles of goods and

livestock and departmental goods has increased, the locomotive stock has remained practically static since 1916. In the years previous to that there had been two periods during which considerable additions were made to the locomotive stock, but since that period increasing loads have had to be hauled by aged and deteriorating locomotives. Much the same story is shown by the position with regard to wagon stock, where again since the years 1914-16 the accretion of stock has been small and spasmodic.

In the case of many of the depots reorganisation and reconstruction undoubtedly means the provision of new buildings for running sheds, workshops for repairs, offices, stores amenities, housing, all properly related to the work that has to be done, and to each other. Planning required for this will be heavy and is a matter which in my opinion must receive immediate attention. Estimates of costs, cannot, of course, at this stage be made, but from my general experience of such matters I do not think the expenditure required will be less than £1,000,000 in the case of the workshops and possibly not less than £250,000 in the case of the depots. The order of these figures is given to you so that some rough idea of the extent to which drift has taken place, may be obtained.

While I was going round the various depots, inquiry showed that engines were frequently "out of service" for periods ranging from a day to several weeks. In my earlier requests for information I had asked to be supplied with the "outages" of the various classes of locomotives and individual locomotives, but this information could not be supplied as no records were kept. It was also found that engines were considered "in service" so long as they were on the charge of the Chief Traffic Manager, quite irrespective of whether they were fit for the road or were waiting for minor repairs or inspections at the end of certain mileages. In some cases delays were occasioned by parts having to be returned to Midland Junction Workshops, this particularly applying to the reconditioning of wheels and axles. The loss of running time of the locomotives thus occasioned might in the aggregate be considerable and I feel that some effort should be made to minimise these delays, even, should it need the provision of more and heavier workshop equipment at certain selected central depots.

Records of what I call "outages" or "out of service" should be kept even if a matter of hours only—in fact each engine might carry its own log book to which reference might be made at inspection periods and produced at enquiries into accidents or other untoward incidents.

STAFF AND STAFF TRAINING.

Taking the railways as a whole and including the workshops, it might be stated that it is a career industry and that those entering the organisation have, and rightly should have, expectation of advancement to the higher and executive positions of the service if they have qualified by education and experience to occupy them. From the evidence before me at the present time, there do not seem to be available men who would be fully qualified by training and experience to take senior executive positions should it become necessary. Inbreeding may be responsible for this. I am very much concerned

with regard to the training facilities that are available for executive officers. Training in the detail of the actual operations that have to be performed by the "rank and file" appears to be reasonably sound although there are many directions for example, locomotive drivers and attendants, where more specific training in the technique of their work might lead to considerable improvement in the efficiency of operation.

The particular example quoted will receive closer attention when matters concerning the supply and use of coal by the railways are discussed, but it is not intended to deal with this matter in this interim report.

The general training of apprentices, so far as workshop practice and their skill as artisans is concerned, probably meets requirements, but the provision that is made for the higher general and technical education of those destined for executive positions is not satisfactory so far as the Chief Mechanical Engineer's Branch is concerned. This whole matter has caused me some concern and evidence with regard to it has been obtained from Technical College authorities, Unions and the Railway Officers. This evidence is not yet complete but the present position is that, at my request, a small committee, consisting of Mr. T. G. Davies, Mr. F. Mills, Mr. L. W. Phillips and Professor Blakey, has been asked to go into the matter and report back at an early date. There is some difference of opinion with regard to the method of recruitment of young men of superior educational attainments and of those who have obtained degrees or diplomas in the science and technology underlying mechanical and production engineering, but I am very hopeful that the management and the unions will be able to find common ground on matters affecting training of men for the shops, drawing offices, laboratories, and executive positions.

COSTING.

In my introductory remarks I referred to what I considered a serious fundamental lack in the organisation of the Chief Mechanical Engineer's Branch. I had asked for certain information with regard to the cost of manufacture of various components, of locomotives, and wagons, and of the efficiency of machines, men and methods of production based on machine hours, man hours, and number or weight and quality of articles produced. It was found quite impossible to give me any information on these matters which would have enabled me to assess readily the efficiency of the workshops. My examination of Mr. Bromfield, Comptroller of Accounts and Audit, was directed towards certain aspects of this question of costs. I was provided with the systems of accounts under which expenditure is returned but to a very large extent the arrangements of these accounts lacked order, and in many cases correlation, with regard to manufacture of new stock or spares and their operation in service.

There was considerable discussion with Mr. Bromfield, Mr. Mills and other officers of the workshops in obtaining evidence on these matters. From the information placed before me it seemed that the accounts system used was provided more from the point of view of assembling total expenditure as matters of convenience in accounting rather than as a means of checking the efficiency of the organisation.

I was surprised to find that the Comptroller of Accounts and Audit held the dual position of accountant and auditor. I can understand that for certain portions of his work he has to audit the accounts of those officers who receive money from the public and he has to check the expenditure of the money provided by the Government for the use of the organisation. In examining Mr. C. Reymond, Secretary for Railways, after discussion with regard to general matters of expenditure the following exchange occurred.

Extract from page 30 of transcript:—

The COMMISSIONER: The Controller of Accounts and Audit is the Auditor of the railway accounts?

Mr. REYMOND: Yes, he holds a dual position. He is the accountant and the auditor. He has the necessary staff. You might think that that is an ideal arrangement.

The COMMISSIONER: I think it is rather a remarkable arrangement.

Mr. REYMOND: Yes. They have separate divisions that do the auditing alone under the Chief Accountant. Many years ago we had a separate audit department but that has been amalgamated.

By Mr. RAYNOR: The Controller of Accounts and Audit is subject to a higher authority?

Mr. REYMOND: Yes, to the Auditor General.

Further inquiries will be made with regard to this, the only comment I have to make at this stage is that the balance sheet put forward in the report of the Commissioner of Railways to the 30th June, 1946, (page 37) is audited and found correct by H. A. Day, Auditor of Disbursements and W. Bromfield, Comptroller of Accounts and Audit.

The Auditor General in his report for the same year, page 99 et seq, discusses the accounts only from the general aspect of funds voted by Parliament through the Treasury, but does not appear to make any check of the detailed accounts and working of the organisation. It appears to be an analysis of whether the monies granted have been in general spent for the purposes for which they were appropriated. I still feel that the system whereby the accountant to an organisation supplies a certificate as auditor, as to the correctness of his accounts, is rather a "remarkable arrangement." In taking Mr. Bromfield through the matter of costs following up my introductory remarks as to the service which his department could give to the various branches of the organisation I was some little time in coming to an understanding with him as to what was included or should be included in a shop costing system. This is dealt with fully in the transcript of evidence but need not, I think, be quoted here, except perhaps for the following which appears inter alia on page 210 and 211.

The COMMISSIONER: You charge the betterment of that cost up to capital?

Mr. BROMFIELD: No, to working expenses. We still have the original capital on which we are paying interest. We do not write down capital unless there is Parliamentary authorisation for the closing of a line, for example. That is quite a different proposition. That capital is in our loan expenditure and we are paying interest on it. We may not replace a locomotive with another locomotive—I am only giving this as an illustration, because we do replace locomotives with locomotives—but we have replaced wagons with carriages. We have taken the original capital cost, and to the extent that we have got £100 in our capital we have scrapped the wagon and have provided a carriage. The carriage may cost considerably more,

but to the extent of £100, that would be treated as off-setting the £100 for which we have lost the capital.

Mr. RAYNOR: We also build locomotives from working expenses?

Mr. BROMFIELD: At the moment we have certain locomotives, Class S. These have been treated as off-setting the extinguishment of other locomotives—scrapped locomotives—and that is charged to working expenses, not to capital, unless it is new stock. Then the cost of it would be the replacement.

The COMMISSIONER: When it comes to looking at it from my point of view, the engineer's point of view, you are carrying locomotives which are in service, so long as they are in service, at their original capital value?

Mr. BROMFIELD: Yes.

The COMMISSIONER: Are they giving you 100 per cent. efficiency?

Mr. BROMFIELD: I am not prepared to argue with you that we should not be providing for depreciation, because I say definitely we should and that our railway expenditure is not complete without a debit in each year for an amount representing the depreciation of the asset which is not covered by maintenance, replacement, or renewals. That is not debatable.

The COMMISSIONER: We are on level ground there?

Mr. BROMFIELD: Each year should carry its own proper share of expenditure. If you have a locomotive which is a nice new one and on which there has been very little expenditure in the first year, depreciation is there all the time if you desire to equalise your costs. We should definitely be making provision for depreciation. In other words, we want repairs, replacements and renewals as a contribution from working expenses each year.

The COMMISSIONER: That is a matter of arrangement?

Mr. BROMFIELD: It is a matter of accountancy as distinct from State finances. I am speaking now from the accounting angle and am quoting from an inter-State railway conference decision which I fully endorse.

The COMMISSIONER: I am with you there as an engineer, but when it comes to finding out how much my work is costing for individual items, I am concerned with little things and many of them and I want to know what machines I have been using on the job.

Mr. BROMFIELD: Then we must go into more detail than we have hitherto done. I am not prepared to argue the point. I agree with you. I want to stress this point, that any additional information we wish to obtain must be obtained only if practical use can be made of it. That is one of our difficulties with statistics.

The COMMISSIONER: You can easily over-run yourself on paper, but you can easily under-estimate your efficiency if you have not got enough paper?

Mr. BROMFIELD: Yes. An educational scheme should be provided to ascertain the figures.

Mr. Mills was also examined at very great length on this particular aspect of workshop control. It was finally ascertained that Mr. Mills in August, 1946, had prepared a very valuable statement dealing with the necessity for proper costing in the workshops. In this statement he traversed at length the system now in use and put forward a method of costing which, in my opinion, would largely meet the needs of workshop control, with the exception that no provision was made for charging machine time or assessing any value to machine time on the

basis of value of the machine in money and productivity. This item of costing is probably omitted because in railway financing amortisation or depreciation of physical equipment does not appear as part of their current costs. This report had evidently been discussed with the Comptroller of Accounts and Audit, was approved by him, and passed to the Commissioner and there it remained until after the opening of this inquiry, when the Commissioner gave it his approval. Inquiry as to the delay in approval of such a fundamental and vital matter indicated that there was some element of dispute likely to arise between the unions concerned and the administration, and it would appear that some conferences with regard to the matter were held between Mr. Mills and the representatives of the men concerned. There is no necessity to comment on the results of these conferences. I could quite understand that there were many aspects connected with costing which might create some suspicion in the minds of the men that it might be used to their detriment in the manner of "speeding up" or the penalising of men who were using old and inefficient machines and working more slowly on this account.

In the course of my discussions with the representatives of the unions and with the management of the workshops, I made it clear that I considered that costing and the control of efficiency of production that it gave, was at the very root of management and that the men must be prepared to accept assurances that it would be used fairly and not to their disadvantage, but that they must understand that the performance of the average skilled man, using modern tools, must be a reasonable percentage of the capabilities of the tool and that the pace could not be set by the performance of the slowest man working with inefficient equipment, and that it was a matter which could and should be capable of agreement between the management and the men. I asked that the representatives of those concerned get together on the matter using Mr. Mills's report as the basis for discussion. This was done and Mr. T. G. Davies acted as chairman of the conference. It is pleasing to record that agreement in principle was reached as to the adoption of the costing method set forward. A further conference between Mr. Mills and unions occurred at a later date and Mr. Mills reported in regard to this as follows:—

Mr. MILLS: I wish to inform you, Sir, that a further conference took place in my office at Midland Junction on Friday, the 8th August. Those present were Mr. Cahill and Mr. Newman, representing the Metal Trades Council. The original purpose of the interview was to discuss three-shift working in the track equipment shop. That being settled, the question of costing came up in general discussion. Both of the union representatives agreed that the scheme should go forward, as agreed to in principle, with the proviso—to which I agreed—that there should be a conference once per month, or oftener if necessary, with union representatives and shop stewards, to decide any difficulties, either large or small, that might arise in the development and working of the scheme.

That discussion ended with the understanding, on both sides, that there was no objection in principle to the institution of a proper scheme for production planning, control and costing, but that if any difficulty arose or if any man felt that the scheme was being operated to his disadvantage, or if the unions felt it

was being used in any improper manner, all such points would be the subject of immediate discussion. I felt that a considerable advance had been made and I believe the way is now open to go straight ahead.

The only question outstanding now with regard to this matter is that Mr. Davies desires to refer the scheme to the foremen and sub-foremen. I am hopeful that there will be no difficulty in securing their co-operation.

I realise that while the proposals will relieve the foremen of a great deal of work which must be irritating and interfere with their function of direct supervision of work passing under them, it will probably throw upon them and upon the Assistant Works Managers the onus of seeing that the proper progress of work is maintained through the various shops and through the machines until it is completed.

HUMAN RELATIONSHIPS.

It is not without intent that the words "human beings" were placed first in the conception I put forward of what constitutes the essentials of an organisation. I can imagine no more important section of an organisation than the human beings which are part of it. The time has gone by when the workers in an industry could be considered as merely cogs in a machine performing more or less efficiently a limited function. Also there is no more important function of management than understanding the human element of the organisation, and making a determined effort to secure its co-operation towards attaining the objectives of the organisation. This understanding must apply not only to sections and groups of men operating within the limits of their particular trade or calling but also to the individuals within the groups. An understanding of the objectives of the organisation and the methods that are being used or proposed from time to time to attain the objectives is necessary if their co-operation and pride in their work is to be maintained. It is here that the duties of the "Personnel Officer," who may perhaps more fitly be termed the "Industrial Welfare Officer," can lead to the maintenance of workshop morale and to the smoothing out of the personal and even group difficulties and irritations that are bound to arise from time to time.

In my opinion it is very necessary that when a man becomes an employee of an organisation or a section of it he should be given some general idea of what the organisation is doing, why it is doing it and how he fits in with its activities.

It is not enough to give him a ticket and place his name upon the payroll. He should be personally interviewed by the Personnel Officer and introduced to the official to whom he will be directly responsible, and it is this officer who in turn will introduce the man to those with whom he is to work and make him feel that he is an entity with some stake of a personal nature in the organisation. He should be told the avenues that are open to him for advancement and of the tests through which he may have to go to qualify for promotion.

There can be no bond of co-operation between the management and the employees without mutual confidence and this will not happen without it being mutually sought and given. The employee has his loyalties to his group and to his union but he has also, if properly encouraged, a loyalty to the organisation of which he is a part.

It is for the above reasons that the approach of the management and the men at the Midland Junction Workshops to the consideration of the proposals for instituting a costing system throughout the works is considered by me to be of very considerable importance. The forming of a committee to meet and discuss the incidence of the details of the costing system is an example which I hope will be followed in other directions, at not only the management level but at intermediate levels of authority.

Such committees can deal efficiently with the problems that arise from day to day, smooth out individual and even group irritations and discuss matters raised by the men which may tend to improvement in conditions of work or production efficiency. Suggestions from individuals might properly be brought forward from these shop committees and suitable rewards for those worthy of adoption could be arranged by the management. A suggestion box used in conjunction with such committees, can be an effective means towards improvements in operation and in itself is one of those things which induces loyalty and co-operation on the part of the individual. The stereotyped reply to an individual or a group that this or that matter will receive consideration is to be avoided. Consideration must be prompt and real and the people concerned supplied with the reason for adoption or rejection, in a manner which would appeal to them as intelligent units within the organisation. It is by these means that mutual confidence between the men and the management may be brought about.

A matter connected with this subject to which I have previously referred, is that of the training and welfare of apprentices. In the Midland Workshops there are approximately 400 apprentices of one kind or another and looking after these boys to see that they are given every opportunity to properly learn their trade and to pursue their studies could well be under the supervision of the Personnel (or Welfare) Officer. With the large number of apprentices to be dealt with, the appointment of a man under the Welfare Officer to especially look after them should receive consideration. Such a man would necessarily have to work in the closest co-operation with the foremen and sub-foremen in the shops with a view to arranging through them the progressive training and instruction required by the apprentices.

AMENITIES.

This has been the subject of much of the evidence placed before me in connection with conditions at the Midland shops and the outside depots. I have referred, when dealing with the shops and the depots, in no uncertain terms with regard to what are generally referred to as "amenities." Within the railway organisation they are almost non-existent and it may be stated without exaggeration that except in one or two isolated instances elementary decencies are hardly met. Amenities do not only consist of providing latrines and closets, wash basins and crude forms of showers. Men come to work clean and it should be possible, particularly when they are employed in work which is necessarily dirty, to change into working clothes and have hygienic lockers into which to put their ordinary clothing. On leaving work they should be able to change from their working clothes, deposit

them in a locker, or suitable hanging space, pass through the showers or wash room, resume their clothes, and go home clean.

It is also not a question of providing the minimum quality of fittings and arrangements with regard to these conveniences. It is economy for such conveniences to be of good quality with the special aspects of hygiene and easy cleaning and draining predominant. It was noticed for instance that in the amenities recently supplied at Northam depot for the floating staff, the dividing panels between the showers were cement plastered on either brick or concrete backing. This rendering was already crazed and absorbing water and soap and appeared likely to become unsightly and unsanitary at a relatively early date. (Incidentally the crazing may be due to the nature of the sand used in the cement mortar rendering, or perhaps with the chemical reactions of the soap and water on either the sand or the cement. This might be investigated). An impervious hard faced paint or preferably tiles would be better than the mortar rendering.

Wash basins should be of modern form, either porcelain, stainless steel or monel metal. Terrazzo or lead should be avoided—lead because of its flowability rendering it liable to corrugation or unevenness, and terrazzo because of the action of certain waters and soap on the cement matrix. These, however, are details which should be borne in mind when planning these conveniences remembering that it is small irritations in connection with these things which cause discontent amongst employees.

In the replanning of barracks and quarters for single men at country centres the rooms should be brightly painted and the cubicles should be for one man only; should contain a good bed, table, mirror, and built-in wardrobe-cupboard, and be provided with a good light. Messrooms should contain some seats other than forms, should be well lighted, heated and brightly painted. Where the centres are large enough, provision should be made for supplying meals and at smaller centres efficient cooking apparatus and hot water should be available for the men's use. At each centre these amenities in general should be the responsibility of a committee of the men who have to use them and it should be their job to see that they are kept clean and their use is not abused. This is again an instance where management and men can properly co-operate.

CONCLUSIONS AND RECOMMENDATIONS.

1. The technical staff covering design and Drawing Office work is inadequate and must be strengthened. Two more senior designing engineers at least are required, together with additional assistant engineers.

2. In consequence of this inadequacy of staff, the Chief Mechanical Engineer is overloaded, and has personally to give too much attention to detail work which he should be able to and must be in a position to delegate to suitable assistants.

3. The general system of organisation of production involves the works manager, his assistants and the foremen in too much office work and is not conducive to efficiency.

4. The workshops as such can only be classed as quite unsatisfactory for the performance of the service they should provide to the railway organisation.

5. The depots are also quite unsatisfactory.

6. The reorganisation of the workshops and the reconstruction of the depots will need to be spread over a period of years (probably at least five) in order that service can be maintained during reconstruction.

7. The planning of the nature of the reorganisation, extensions to shops, location of machines, improvement of internal transport, etc., etc., must be undertaken as a complete piece of work so that as alterations, improvements, extensions, etc., within the workshops area take place, they are in accordance with a pre-determined and approved scheme.

8. For this purpose engineers experienced in shop equipment and layout are required and should be obtained as soon as possible in order that the necessary design and planning may proceed. There is probably twelve to eighteen months' work ahead on this alone.

9. Proper methods of costing work do not exist at present. Whatever method is adopted in this regard should be introduced slowly, otherwise disorganisation may result. It has to be remembered that the existing system of accounting and production must be allowed to die gradually while the new system of costing and planned production is being introduced. It must be borne in mind that men and staff have to be educated with regard to the use of a costing system.

10. The conferences that have been held between the management and the union with regard to the introduction of the costing system pave the way for the institution of works committees consisting of representatives of management and men.

11. This in itself will create confidence between men and management and obviate the irritations which give rise to complaints leading to serious disputes.

12. Management must manage, but it can learn much both at the higher and the lower levels from the working force, and can keep the working force informed as to its objectives and the means proposed to obtain them, through such committees.

13. The necessity for obtaining the services of highly trained and experienced men for the positions of production engineer and personnel officer is urgent, as the planning of the activities outlined above should be undertaken with their assistance and advice.

14. There is no organised system for ensuring the proper education of professional and technical men for executive positions. The training of artisans is covered to what may be considered a reasonable extent in the light of the present educational facilities, but the more extended training of apprentices to equip them for semi-executive and executive functions requires consideration.

15. It should be understood that the planning of the reconstruction of the workshops and depots will include the provision of amenities, using this word in its widest sense.

16. Close co-operation between the workshops management and the Chief Inspector of Factories in connection with safety education, working conditions and amenities should be sought.

This interim report covers the situation with regard to the management, workings and control of the Midland Junction Railway Workshops and also such suggestions regarding alterations and improvements in connection therewith as I consider necessary at the present juncture to provide adequate service to the railway organisation.

There are matters still outstanding which must be further considered and at this stage I have been unable to deal with the matter of the supply of local coal to the railways as requested by Your Excellency.

I would suggest that it is a matter of urgency that the Government determine the action to be taken with regard to the matters raised in this interim report in view of the difficulties that may arise with regard to obtaining suitable staff to carry out the work involved.

I desire to express my appreciation of the co-operative manner in which Mr. P. C. Raynor, the representative of the Commissioner of Railways, Mr. F. Mills, Chief Mechanical Engineer, and Mr. T. G. Davies, representing the unions affected by the inquiry, have helped me in this inquiry and I am confident that this help will be proffered just as freely in the work yet to be undertaken by your Commission.

I have the honour to be Sir,

Your obedient servant,

ALEX. J. GIBSON.

28th August, 1947.