

EMPLOYMENT PROBLEMS
OF THE
RAILWAY INDUSTRY
OF CANADA

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THE EMPLOYMENT AND UNEMPLOYMENT PROBLEMS OF THE RAILWAY
INDUSTRY OF CANADA, WITH PARTICULAR REFERENCE TO THE
CITY OF MONTREAL.

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CHAPTER I.

THE IMPORTANCE OF THE RAILWAY INDUSTRY.

The railways have always attracted attention in Canada because of the part they have played in the development of the country. So closely has their development been linked with that of the nation that the history of the railways has almost been the history of Canada. It was the railways that opened up the West, and it was the railways that brought the Maritime Provinces and British Columbia into Confederation and forged one country out of several scattered settlements. But it is the present, not the past, that counts in the final analysis. It is the position the railway industry holds in the transportation system of the country that is the strongest reason for attaching importance to its activities.

The transportation industry is of paramount importance in any country. Our modern economy is built on a foundation of rapid and efficient transportation. Very few commodities are consumed in the locality in which they are produced. An industry is usually located at a few points, and these points supply the whole country with a restricted list of articles, as well as possibly producing for export. Thus all communities are interdependent. Each specializes in a few lines, and is able to consume only a small portion of its produce. The balance is

shipped to other communities, and, in exchange, are brought in the many articles that are necessary to the present day standard of living. The producer of raw materials seldom finds that the machinery and supplies necessary to his operations are manufactured in his own district. He must have them transported from the place of manufacture, which may be, and in Canada probably is, some distance from the scene of his activities. He must also ship his produce to the manufacturing centres, where it is transformed into the finished article, which, in its turn, must be shipped to the consumer. This complex organization of society places the transportation industry in a key position. All other industries must make use of it in order to dispose of surpluses, while everyone is dependent upon it, whether consciously or unconsciously, for his supply of necessities and luxuries.

In Canada the railway is the backbone of the transportation system, for the greater proportion of the traffic is still carried by rail. The inland waterway has always been an important factor in the movement of traffic, but it is frozen over for several months during the year. Moreover, vessels are restricted to navigable waters, whereas rail service is maintained to every point of consequence, and for that matter, to many of no consequence. As a result, even the commodities which form the traffic for the lake and river vessels must be handled by the railways. The principal commodity carried by the vessels is wheat, and yet this is also the principal item in freight traffic. Although an insignificant quantity of wheat is carried over the all-rail route to the east, all that exported

from the Pacific ports is transported exclusively by rail. The major portion, of course, moves out of the country by way of the lakes. But even this is added to the total carried by the railways. All of it must be moved to the head of the lakes by the railways. Some of it is shipped to the Georgian Bay ports, and from there is carried to the ocean ports by rail. Thus, even here we find the railways playing an important and indispensable role.

To-day the railways have a new rival in the form of motor vehicles, but as yet the latter are of only minor importance in the carrying trade of the country. They may have taken some of the best-paying freight, but their quota is insignificant when compared with the total freight carried by the railways. At present motor vehicles are economical only for the short haul, whereas Canada is essentially a country of long distances. The position of the Maritime Provinces cuts them off from the rest of Canada. The Rocky Mountains and the expanse of undeveloped land around Lake Superior divide Canada into sections. There are two deposits of bituminous coal in this country, one in Nova Scotia and the other in Alberta. Yet neither of these can be used in the industrial centres of Ontario without subsidization. Motor vehicles cannot cope with the transportation problems presented by the economic and geographical features of the country. For these reasons the railways are, and must for some time remain, the most important means of transportation.

Holding this position, then, linked with every industry and every geographical division, the railways inevitably provide an excellent index to general business conditions. Any change

in the output of either primary or secondary industries results in a change in the volume of traffic handled by the railways, and thus general conditions are reflected in their statistics. The fact that the railway industry is regarded as an index, is illustrated by the close attention paid to the fluctuations in carloadings and revenues by business men generally.

This characteristic of the industry is one reason for its importance in the study of unemployment. The fluctuations in the output of other industries means fluctuations in employment in those industries, that is, either more or less unemployment. Then, any considerable change in the volume of traffic means a change in the number of men employed by the railways. Thus the employment figures of the railways are likely to reflect the fluctuations in employment in the country as a whole, and railway employment, therefore, is likely to be an index to employment conditions in other industries.

This is true of the total railway employment figures, but the various departments reflect the movements in other industries in different ways. The operating department reflects the short run movements in other industries. The workers in this department, the running trades and station employees, are directly and immediately affected by changes in the volume of traffic, since they are concerned with the actual transportation of that traffic. The seasonal character of Canadian economic activity is reflected decisively in the fluctuations in the number of these men employed.

The maintenance employees are also, of course, affected by traffic conditions, but not in the same way: they are affected by changes in the volume of traffic over a longer

period. Their numbers vary with respect to the traffic from year to year rather than from month to month. The repair work on the rolling stock is done at the time of year when the engines and cars are being used least, that is, in the winter. From the point of view of seasonal variation, then, there is more of an inverse than a direct correlation between maintenance of equipment and traffic. The repairing of the track, bridges, and buildings, on the other hand, is accomplished in the summer, for climatic reasons. Once the ballast is frozen, there is no possibility of doing anything to the track until the spring thaw. But the total amount of maintenance work that is done each year, is regulated by the amount of the traffic. Less traffic means less wear and tear on the rolling stock, and therefore less repair work to be done, and vice versa. Maintenance work is planned for the year, but it may be cut if the receipts from traffic do not come up to expectations and economies are necessary.

The railway industry, however, is important not merely as an index. There is a primary reason for attaching significance to it in unemployment research, and that is that it provides a large proportion of the total employment of the country. Since Canada has more miles of railway in proportion to its population than any other country, one would expect to find the personnel of the railways a very important factor in the labour market, for, although the industry is one which requires a heavy capital investment, the proportion of labour is considerable. In 1930 the wages and salaries paid by all railways constituted 66 per cent. of the operating expenses,¹ and

1 - Wages and salaries chargeable to operating expenses only.
Canada Year Book, 1932, p. 543, Table 10.

for the C.P.R. alone, they formed 46 per cent. of all expenses.

On June 1, 1931, the railways had on their payrolls approximately 135,000 men,¹ not including the employees engaged in connection with the hotel and steamship services. This group formed between 8 and 9 per cent. of the total number of male wage earners working at that date.² Thus the railway workers form no small proportion of the total workers in Canada, and therefore are important in any labour question.

The railway group, moreover, makes a larger contribution to the ranks of organized labour than any other industry. Over 70 per cent. of the railway workers³ are organized in trade unions, and these organized workers constitute 29 per cent. of all trade unionists in Canada.⁴ The significance of this latter figure is emphasized by the fact that the next largest group, the building trades, forms only 12 per cent. of the total.⁴

These facts, in and of themselves, are sufficient to demonstrate the reason for stressing the railway group in the study of unemployment. But it is the composition of this group, as much as its magnitude, that makes it important. The railway industry is, in a definite sense, a cross-section of many

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- 1 - According to statistics supplied by the C.N.R. and the C.P.R. Figures for June 1931 are used for purposes of correlation with the census. The absolute figure means little since 1931 was a bad year.
 - 2 - Preliminary figures of 1931 census. See Labour Gazette, Nov. 1932, p. 1188. There being so few women employed by the railways, they have been left out of this calculation.
 - 3 - Transportation and maintenance only. General office staffs excluded.
 - 4 - Twenty-first Annual Report on Labour Organization, p. 11; Published by the Department of Labour, Ottawa.

industries. The railways not only perform the service of transportation, but they also construct their own lines, maintain their own equipment, and, to some extent at least, manufacture their own equipment and supplies. Construction, manufacturing, maintenance, personal service, and clerical work are all found in this industry. Besides the men in the running trades and the sectionmen, which are peculiar to the railways, there are amongst the workers machinists, boilermakers, blacksmiths, electricians, carpenters, upholsterers, masons, plasterers, and painters. These are only a few of a long list. What is more, in this industry are found all degrees of skill. There are the engineers and conductors, who, in railway work, are in a class by themselves; there are the skilled craftsmen in the shops; there are the semi-skilled workers, such as the trainmen and sectionmen; there are the labourers in the various departments, and the casual workers in the extra gangs. Skilled, semi-skilled, unskilled, and casual are all represented.

Thus, in the railway group, we have over eight per cent. of the total labour force of Canada, nearly thirty per cent. of organized labour, a cross-section of the workers in many industries, and a group which is directly affected by conditions in both primary and secondary industries throughout the country.

In this study, however, in order to make it specific, and to avoid the pitfalls which generalization may open up, an effort is made to confine its scope to the City of Montreal to as great an extent as the available statistics permit. The nature of the industry makes it difficult to segregate a restricted area and to study Montreal by itself. The

administrative and accounting districts of the railways are, of course, considerably larger than this, so that even to obtain a figure of the total number of railway employees in this city for one particular date, involves some trouble. The industry, obviously, is not of a local nature, and it would be decidedly misleading to speak of the railway industry of Montreal as though it were an entity. But one can refer to the employees who live and spend their money in Montreal, and it would appear to be more satisfactory to obtain definite information about a small group than much less definite information about a larger one.

The wide field over which the two large railway companies in Canada have spread themselves makes it necessary to place a further restriction on this study. The operations of these two companies are so diverse that it would detract considerably from the value of the research to attempt to include all the employees of the railway companies and their subsidiaries. For this reason only the transportation and maintenance employees are considered. These are the workers in the railway industry proper -- the men actually engaged in the transportation of commodities or in maintaining the equipment necessary to the performance of that service. All the employees of the other services -- steamships, hotels, express, and commercial telegraphs -- must be excluded, for, although the two latter are integral parts of the Canadian railways, a limit had to be placed at some point.

The workers engaged in railway service in Montreal, then, are taken as the sample of the whole country. But it is

a large and representative sample. The metropolis of Canada naturally would require more station employees than any other point, for the handling of the larger share of passenger and freight traffic that it possesses merely by reason of its population. But Montreal is also the eastern railway terminus for both the Canadian National and the Canadian Pacific lines. For this reason large yard crews are necessary to handle the trains that operate from its stations, and to look after the engines and cars that are kept there. Roundhouse forces are needed for running repairs on the rolling stock, and a large proportion of the train crews that actually operate the trains make their home terminal their place of residence. Then, again, the head offices of both the large railways are situated in this city. Most of the administrative work is done from Montreal, and a considerable office staff is needed for this purpose. Montreal is at the head of ocean navigation on the St. Lawrence River, and most of the freight passing to and from Canada on the Atlantic is transhipped at its wharves. Many men are employed to do the work that this entails.

Finally, much of the equipment maintenance work is done in Montreal. The Canadian Pacific Angus Shops handle all the heavy repair work on the rolling stock for the lines east of Fort William, and in 1928 and 1929 at times employed well over nine thousand men. The Canadian National, as heritages from the railways it united, has more separate shops than the C.P.R., and consequently has not been able to concentrate its repair work to the same extent. Nevertheless, in Point St. Charles is situated one of the large shops of the system.

For these reasons Montreal harbours a high proportion of the employees of the railways. About 23 per cent., almost one quarter, of the C.P.R. employees live there. This is considerably greater than any other centre. The employees of the C.N.R. are more evenly distributed. About 13 per cent. live in Montreal, but about the same, or possibly a somewhat smaller, number are situated in Toronto. Striking an average, we find that approximately 18 per cent. of all the railway workers live in Montreal. In studying Montreal, then, we might be said to be taking a sample of one in six of the whole Canadian industry.

Not only is the railway group in Montreal important from the point of view of the whole industry, but it is also important from the point of view of employment in Montreal itself. The total number of railway employees in Montreal in June 1931 was 23,800.¹ They formed over 11 per cent. of the occupied male workers according to the census of that date.² This survey, then, bears a direct relation to unemployment in Montreal as well as to the railway industry of Canada.

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- 1 - From figures supplied by the railway companies. Figures are for Island of Montreal, and include express and commercial telegraphs, while being exclusive of hotels and steamships.
 - 2 - Preliminary figures of 1931 census. See Labour Gazette, July 1932, p. 784. Figures relate approximately to Montreal Island. They include the following municipalities: Lachine, Montreal, Outremont, St. Laurent, Verdun, Westmount.

CHAPTER II.

THE EMPLOYMENT STRUCTURE OF THE INDUSTRY.

A. Classes of Workers.

Unemployment in any industry is not one problem but as many problems as there are classes of workers. No industry comprises simply one homogeneous group of workers, for there are always many operations in the production of a commodity or in the furnishing of a service, and therefore many kinds and degrees of skill are required. There is often no similarity between the various occupations in an industry, and in that case, with no possibility of transferring men from one occupation to another, unemployment definitely resolves itself into a different problem for each group. Not only does the division of labour create immobility and therefore segregate the various groups of workers, but in different types of work the factors affecting the continuity of employment may be entirely different. In studying unemployment in one particular industry, then, it is necessary to examine the crafts and the types of work. The nature of the railway industry with its many parts and its great variety of crafts, makes such an examination even more essential in this case. Although it may appear elementary to describe the crafts in railway work, it is nevertheless

necessary. Their nature may seem to be familiar to everyone, but the existence of so many crafts complicates the problem of unemployment to such an extent that it would be unwise to continue without at least enumerating them, if only for the purpose of drawing attention to their number.

The first apparent division of railway workers is between those concerned with the movement of traffic and those engaged in maintenance work. These are two entirely different types of work, with nothing in common except that they are both essential to the operation of a railroad. A further distinction can be made between maintenance work on the "fixed capital", i.e., track, bridges, and buildings, and maintenance work on the rolling stock. Thus there are three main groups -- transportation, maintenance of way and structures, and maintenance of equipment -- and this grouping, which is founded on railway practice, forms the basis for any classification of railway workers. In Canada as a whole the employees are distributed fairly evenly between the three groups, transportation being slightly larger than the other two,¹ but in Montreal the maintenance of equipment group forms over fifty per cent. of the total.²

Transportation. Transportation covers all those workers who form the popular conception of railway employees, for it is the men in this group with whom the public comes in contact. Under this heading come the engineers, firemen,

1 - See Appendix C of Wages and Hours of Labour in Canada, Supplement to The Labour Gazette, January 1933.

2 - The proportionate importance of the groups in Montreal is calculated from figures supplied by the railway companies for June 1931. The proportions vary from month to month, but June is fairly representative.

conductors, and station employees who are familiar figures in the public eye. They fall naturally into three groups, the largest and most important being that of the running trades and other train employees, which comprises somewhat over twenty per cent. of the men situated in Montreal. Some of these men are in road service while others are employed in the yards. It is those in road service who are at the very centre of railway activity, for it is they who actually perform the service of moving the traffic. All other work is carried out in order to make this possible. The running trades include the engine crews, the engineers and firemen, and the train crews, the conductors and trainmen. Those in yard service are the hostlers, who handle the engines in the roundhouse and between the roundhouse and the station, and the engineers, firemen, yard foremen, and yardmen who handle the engines and cars in the yards, and make up and break up trains. The yard foremen and yardmen perform, respectively, the duties of conductors and brakemen. The other train employees are the sleeping and parlour car conductors and porters, and the dining car staffs. All these men, of course, are in road service.

The aristocrats of this group are obviously the engineers and conductors, for they must go through a long period of training as firemen and brakemen, and are vested with considerable responsibility. Most of the other men require considerable skill in the performance of their duties, the porters being the only ones who might be considered low-skilled.

The second group in transportation is that of the station and freight shed employees, who form about twelve per cent. of the Montreal total. They are concerned with the movement of traffic, but not as directly as the men on the

trains. Station work requires the services of agents, assistant agents, and telegraph operators on the one hand, and baggagemen and station porters on the other. The duties of agent and operator are often combined, though not in large stations such as are found in Montreal. "Assistant agent" is the term used to cover all the miscellaneous employees that are needed in a large station. It covers anyone assisting the agent whether as a ticket seller, information clerk, train caller, or in any similar capacity.

The loading and unloading of freight at the sheds involves several operations which may be performed by different men. At large sheds such as those at the Montreal wharves, there are checkers, coopers to recondition the damaged packages, loaders to load the freight on the trucks, truckers to operate the trucks between the car and the shed, and stowers to stow the freight in the car or shed. Each of these operations requires some training, but only at large sheds is any distinction made between truckers, stowers, and loaders, and only at large sheds are the services of a cooper required. None of these men are in a class with the agent and the operator. The checker and the cooper are the only ones who could be considered even semi-skilled, and with them can be classed the majority of the assistant agents. The remainder of the freight handlers, as well as the baggagemen and station porters, must be classed as low-skilled.

The third group, the men engaged in operating signals and switches, is relatively unimportant as far as numbers go. In this category are the switchmen who operate the switches in

the yards and are the most numerous, the levermen who operate the interlocking switches from towers, and the gatemen and watchmen at crossings. It is apparent that the switchmen and levermen must have a certain amount of training and skill, but the watchmen and gatemen can be considered as low-skilled, the positions of watchmen being reserved for employees who have been incapacitated on one way or another and are unable to do any other work.

Maintenance of Way and Structures. Maintenance of way and structures, as has been pointed out, is the maintenance and repairing of the track, bridges, and buildings. The men engaged in this work can also be divided into three groups. First of all, there are those in track work, who make up about six per cent. of the railway employees in Montreal. Here a distinction must be made between light running repairs and large scale replacement of rails, ties, and ballast. The constant inspection of the track and the execution of light repairs are done by the sectionmen with the assistance of labourers. The sectionmen usually acquire some experience as labourers before attaining the status of sectionmen. Training is necessary to enable them to detect defects in the track, and therefore they are in a different class from the men engaged in heavy repairs. This latter work is effected by extra gangs composed of labourers who may or may not have had previous experience in the work.

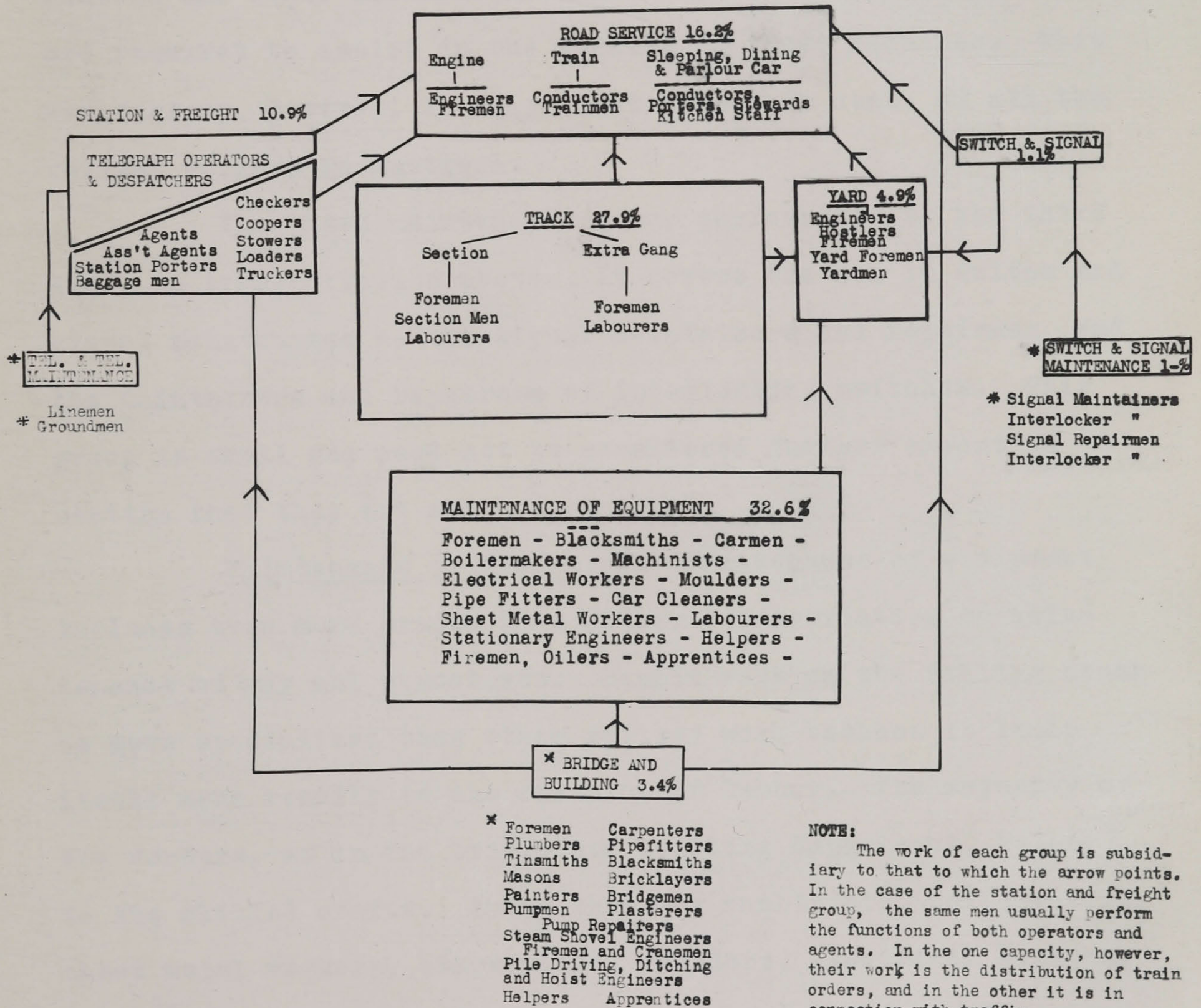
The bridge and building department, the second group, presents an entirely different picture. It consists of a large number of skilled crafts. A "B. and B. gang" is made up of carpenters, bridgemen or rough carpenters, and labourers, but

FIGURE 1.

RAILWAY CRAFTS

Grouped According to Character of Work
Showing Relationship Between Groups

Percentages Show, for Canada as a Whole, the Proportion
of Each Group to the Total Number of Railway Workers.



there are many other crafts in this department. The repairing of bridges and buildings requires most of the crafts that are found in the building industry, such as masons, bricklayers, painters, plasterers, plumbers, and pipe fitters. These are all skilled crafts which require apprenticeship and special training. The skilled men comprise the majority of the workers in the bridge and building group, for the men who operate the steam shovels and other machines are also skilled, although labourers are required to assist in the working of these machines. This whole group, however, is only about three per cent. of all the railway workers in Montreal.

The third maintenance group corresponds to the third group in transportation above. It covers the men in switch and signal maintenance -- the signal maintainers and repairmen, and the maintainers and repairers of interlocking switches. This group is small and need not be considered further except to mention that they are skilled.

Maintenance of Equipment. Maintenance of equipment includes even more crafts than either transportation or maintenance of way and structures. Repair work on the rolling stock is more specialized than other railway work because it lends itself more readily to the division of labour. The majority of the workers, as in the bridge and building department, belong to the skilled crafts. Among them are machinists, boilermakers, sheet metal workers, blacksmiths, moulders, electrical workers, and carmen. In all of these crafts there are many subdivisions, but, except in the case of the carmen, the work within each craft is all of the same character and the men all belong to the same class. The term "carman", however, covers several different

crafts and many degrees of skill. Painters, carpenters, and steel car repairmen make up the majority of them. All painters in locomotive and freight car work, and those in passenger coach work who possess a higher degree of skill, come under this heading. The men who do the woodwork and the steel work on the cars are one and the same, and so the term carpenter can be used in referring to them. The carpenters are of various classes. In descending order of skill they are the cabinet makers, who do the more highly-finished woodwork inside the passenger coaches, the coach carpenters, and the freight carpenters. There is a considerable difference between the coach and freight carpenters. The former is a skilled craftsman, while the latter is little more than a rough carpenter.

In maintenance of equipment the same distinction can be made, between light running repairs and heavy repairs, as in track work. The same classes of workers do both; but the running repairs, which are continually called for, are done in the round-house in the case of the locomotives, and in the train yard in the case of cars; whereas the heavy repairs are performed in the back shops and, unlike running repairs, may be deferred. Both classes of work can be divided between locomotive, coach, and freight car repairs.

The reason for making the distinction here is that the peak for passenger traffic is in the summer, while that for freight traffic is in the autumn. The result is that the peaks for repairs to passenger and freight cars usually occur at different times of the year, while locomotive repairs are spread more evenly than either. It is not possible to group the shop crafts under these three headings, as practically all crafts are found in

TABLE I.

RAILWAY CRAFTS CLASSIFIED ACCORDING TO DEGREE OF SKILL

<u>Skilled</u>	<u>Intermediate</u>	<u>Low-skilled</u>
	TRANSPORTATION	
Agents	Firemen	Crossing watchmen
Conductors	Freight Handlers:-	Freight Handlers:-
Engineers	Checkers	Loaders
Hostlers	Coopers	Stowers
		Truckers
Hostlers	Levermen	Gate men
Motormen	Sleeping and parlour car conductors	Helpers
Telegraph Operators	Switchmen	Labourers
Yard Foremen	Trainmen	Sleeping and parlour car porters
	Yardmen	Station baggagemen
		Station porters
	MAINTENANCE OF WAY AND STRUCTURES	
Blacksmiths	Apprentices	Labourers
Bricklayers	Bridgemen	
Carpenters	Pumpmen	
Foremen	Sectionmen	
Masons	Steam shovel firemen	
Painters		
Pile driver, ditching, hoist, and steam shovel engineers		
Pipefitters		
Plasterers		
Plumbers		
Pump repairers		
Signal and interlocker maintainers		
Signal and interlocker repairmen		
Steam shovel engineers and cranemen		
Tinsmiths		

TABLE I (cont.)

<u>Skilled</u>	<u>Intermediate</u>	<u>Low-skilled</u>
	MAINTENANCE OF EQUIPMENT	
Blacksmiths	Apprentices	Car cleaners
Boilermakers	Carmen:-	Groundmen
	Air brake cleaners	
Carmen:-	and testers	Labourers
Air brake repairmen	Freight carpenters	
Cabinet makers	Freight painters	
Coach carpenters	Freight steel car	
Coach painters	car repairmen	
Passenger steel car		
repairmen	Helpers	
Upholsterers	Linemen	
Electricians		
	Stationary firemen	
Foremen	and oilers	
Machinists		
Moulders		
Pipe fitters		
Sheet metal workers		
Stationary engineers		

each shop. But, generally speaking, the carmen form the greater part of the working force in the car shops, while the workers in the locomotive shops are mostly mechanics.

Figure I shows the grouping of the crafts according to the character of the work, and the relation between the work of the various groups. In Table I the crafts are grouped according to the degree of skill required. This table must not be regarded as being in any sense rigid. Any classification according to skill, no matter how carefully drawn up, is bound to raise objections from some quarter. It is impossible to divide the workers into water-tight compartments within each of which all possess the same degree of skill, for even within each craft the skill varies. In this table they are divided into the three classes of skilled, low-skilled, and intermediate, in order to give only a general impression. Those within each class are, of course, not all equal. They are listed in alphabetical order, for any order of skill would be controversial.

B. Trade Union Organization.

In an industry in which there are so many classes, it is not likely that the interests of all groups coincide at all times, and therefore one would expect to find the workers organized in many trade unions. There are many unions in the railway industry, and the multiplicity of organizations is both a result and an accentuation of the differences in the interests of the workers.

The unions may be divided into three groups. The first comprises those affiliated with the Trades and Labour Congress of Canada and the American Federation Of Labour, the second is that of the independent international brotherhoods of

the running trades, while the third consists of the unions affiliated with the All-Canadian Congress of Labour.

Between the first two groups there is no direct conflict, either on questions of principle or of jurisdiction. The unions in both groups have grown up as craft organizations of workers in both Canada and the United States, but, whereas the former have all affiliated their total membership with the A. F. of L. and their Canadian membership with the Trades and Labour Congress, the running trades have preferred to remain independent. Thus, although the two groups have no formal connection, they both follow the international and craft principles of organization. Moreover, each covers a different class of workers, and therefore they are not in competition for members.

But if there is no direct conflict between these two groups, neither is there any great amount of co-operation. Since they are not directly in opposition to one another, it is possible for them to work together when it is obviously in the interests of both. But there is none of that spirit of give and take which is essential to real co-operation. The running trades, being the key men in the industry and having strong finances, are unwilling to share their strategic position with the less favourably placed workers.

The real conflict, however, arises between the two international groups on the one hand, and the unions affiliated with the All-Canadian Congress of Labour, which is organized on national lines, on the other. Here there are distinct differences in policy, which may be either a cause or a result of the more intense conflict on the question of jurisdiction. The first and most obvious difference in policy is that between the

international and national systems of organization. This point, although emphasized by the national organizations, is probably the least important, especially in view of the history of the larger of the national unions. There is a much more important difference in policy, and this type of conflict is as old as trade unionism itself. There are two national unions, and the larger, the Canadian Brotherhood of Railway Employees, is an industrial union, at least in policy. The other, the Canadian Association of Railway Enginemen,¹ embraces a number of crafts. Thus the system of organization of the national unions contrasts with the craft organization of the international unions. The conflict as to jurisdiction will appear more definitely in describing the membership of each organization.

There is little means for obtaining co-ordinated action amongst the transportation employees. The running trades are organized in the four brotherhoods of the engineers, firemen, conductors, and trainmen. The last-named includes the yard foremen and yardmen. They have a General Chairmen's Committee, but this is a very loose form of federation and merely provides a medium for action when such is deemed advisable by all parties. The truth is that the interests of the firemen often conflict with those of the engineers, and the interests of the trainmen with those of the conductors, especially on the question of unemployment. For this reason there has never been a very close alliance between these four unions, except in connection with wages. In addition, the running trades have refused to ally

1 - Full title:- The Canadian Association of Railway Enginemen, Conductors, Trainmen, Yardmen, Operators, and Dispatchers.

themselves with the Trades and Labour Congress. However, in spite of their differences, they are united in their opposition to the Canadian Association of Railway Enginemen. This, a national union of comparatively recent development, encroaches on the field of all of them, as it aims to include in its membership all engineers, firemen, conductors, trainmen, yardmen, and telegraph operators in Canada. At present its membership is not very great, and consequently its power is extremely limited.

The sleeping car conductors are divided between three organizations with distinctly different policies. There is one international organization of these workers -- the Order of Sleeping Car Conductors -- which is affiliated with the A. F. of L. but it has no connection with any central body in Canada. Its Montreal local is the only local in this country. The Canadian Brotherhood of Railway Employees also has organized the sleeping car conductors. The membership of these two organizations is confined mainly to employees of the C.N.R., for those of the C.P.R. are organized in a union of their own which has no outside connections.¹

The station and freight shed employees are no more united than the running trades. The Order of Railroad Telegraphers is affiliated with both the A. F. of L. and the Trades and Labour Congress, and in addition has representation on the General Chairmen's Committee of the running trades, with whom it co-operates on wage questions. Reference has already been made

1 - The C.P.R. Sleeping Car Conductors' Mutual Benefit Association. The sleeping and parlour car porters and the dining car employees, respectively, are organized in The Sleeping and Parlour Car Porters' Mutual Benefit Association and The Dining, Cafe, and Buffet Car Employees' Benefit Association.

to the fact that the C.A.R.E. also organizes the operators. The remainder of the station employees and the workers in the freight sheds are organized in two directly opposing unions. One is the Brotherhood of Railway and Steamship Clerks,¹ an international union affiliated with the Trades and Labour Congress and the A. F. of L., and the other is the Canadian Brotherhood of Railway Employees. The majority of the members of the former are employees of the C.P.R., while the membership of the C.B.R.E. is mainly drawn from C.N.R. employees. However, this is only a general statement. Neither organization, in policy or in practice, restricts its activities to one railway. There has always been sharp conflict between the two unions. From 1917 to 1921 the C.B.R.E. was affiliated with the Trades and Labour Congress, but in the latter year was expelled because of the conflict with the international union on the question of jurisdiction. Both unions have a large membership. Although the C.B.R.E. organizes other classes of workers, it draws its main support from the station and freight shed employees.

The employees of the maintenance of way and structures department have a much more simple organization. The Brotherhood of Maintenance of Way Employees, the strongest of their unions, is an international organization having affiliations with the central bodies in Canada and the United States. It covers all track and bridge and building workers and thus unites action in the whole department. The C.B.R.E. has somewhat over

1 - Full title:- The Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express, and Station Employees.

two thousand members amongst these workers and furnishes the opposition, but the Brotherhood of Maintenance of Way Employees has organized the majority and negotiates all the agreements. The third union, the Brotherhood of Railroad Signalmen of America, which covers the signal maintainers and helpers, is comparatively unimportant. It is an international union affiliated with the Trades and Labour Congress, but it has severed its connections with the A.F. of L.

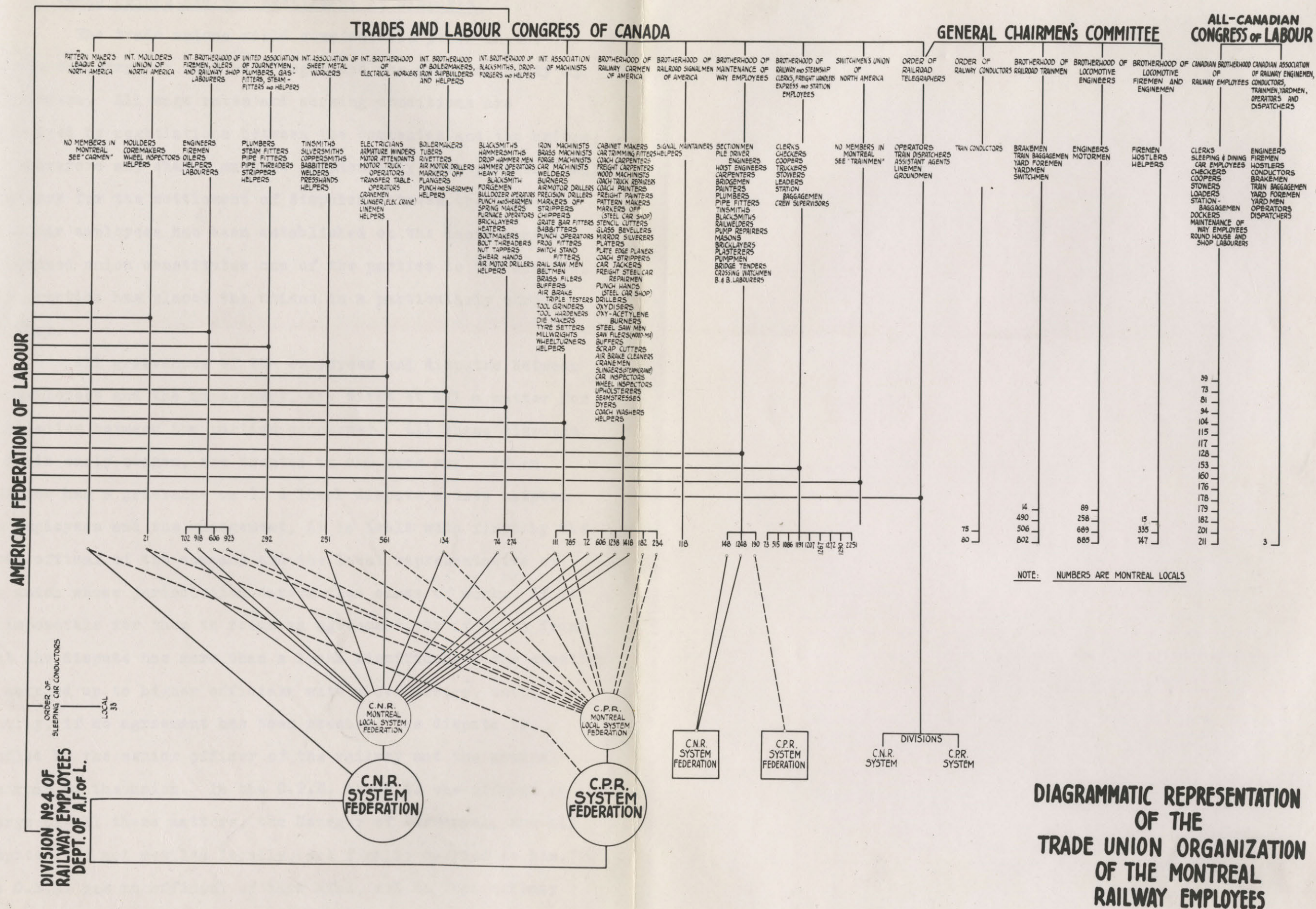
The division of labour in maintenance of equipment work has resulted in the men being organized in a number of unions. But in spite of this, a high degree of unity has been attained. Although there are eleven unions in this field -- ten international and one national -- the ten international unions possess a strong federation. With one exception they are all craft organization whose jurisdiction extends over workers in many industries. The exception is the Brotherhood of Railway Carmen, which, as its name implies, includes only railway workers. The Brotherhood of Railway Carmen and the railway members of the other unions, between them covering all the shop crafts, have formed themselves into a federation in order to strengthen their position. This federation is known as Division No. 4 of the Railway Employees Department of the A. F. of L., and it acts for its members on all questions. There is no official connection between this body and the Trades and Labour Congress, but in practice they co-operate closely, as all the unions which make up Division 4 are affiliated independently with the Congress.

In opposition to Division 4 there is the Canadian Brotherhood of Railway Employees. In this field the C.B.R.E.

organizes mainly the shop clerks and the roundhouse and shop labourers, and is not a real competitor in organizing the skilled crafts.

It is apparent from the foregoing that in the railway industry, as in other industries, it is the skilled workers who are most strongly organized. But it is probable that the unskilled workers on the railways are more strongly organized than in most industries. The C.B.R.E. has organized unskilled workers in all branches of the railways; the Brotherhood of Railway and Steamship Clerks has organized some of those in transportation; the Brotherhood of Maintenance of Way Employees has done the same in the maintenance of way department; and the International Brotherhood of Firemen, Oilers, and Railway Shop Labourers has organized many in the shops. But all these unions have skilled as well as unskilled members. Their intention is to include at least the majority of the unskilled, but exactly what degree of success they have achieved it is difficult to ascertain. The labourers on the extra gangs are the only ones who have no organization whatever. Except for a few of the all-year-round men, these labourers belong to no organization, and have no body to negotiate for them. But with the other unskilled workers, even if the majority of them are not organized, one or the other of the unions is able to negotiate in their behalf. This is illustrated in Figure 2 which shows the various trade unions, their affiliations, and the crafts included in their membership.

FIGURE 2.



C. The Trade Unions and the Settlement of Disputes.

The trade unions wield considerable power in the railway industry for they have organized the great majority of the workers. All wage rates and working conditions are determined by negotiations between the companies and the unions, and therefore any change must be sanctioned by both parties. All machinery for the settlement of disputes between the companies and their employees has been established on the basis that the recognized union constitutes one of the parties to the dispute. This practice has placed the unions in a particularly strong position.

All grievances of the employees and disputes between the employees and the management, are first of all a matter for negotiation between the parties concerned. All these disputes, in their early stages, are treated in the same way. If an employee has a grievance or if a local dispute arises between the employees and the management, it is dealt with first by the local official of the company and the local representative of the union whose jurisdiction covers that class of work. If it is impossible for them to reach an agreement, or if it is found that the dispute has more than a local significance, the question is carried up to higher officials with wider powers, until, finally, if no agreement has been reached, the dispute is handled by the senior officer of the railway and the general chairman of the union. In the C.P.R. there is one officer in charge of all these matters, the Manager of Personnel, and all disputes, if not settled locally, are finally carried to him. The C.N.R. has no official of this kind, and in that railway

the disputes are handled by the operating officers.

Questions of changes in wage rates, changes in general working conditions, or disputes which affect all employees alike, of course do not go through this routine, but originate at the top. The agreements as to the wage rates and working conditions of the transportation employees are concluded between each individual railway and its employees as represented by one of the brotherhoods. In this class of work it is extremely difficult to determine the relative importance of positions on different railways and the relative rates of pay to be allowed for those positions. The result is that each railway concludes separate agreements with its own employees.

In the maintenance department, however, this difficulty does not exist as the work is of a standard character. There is no extra strain on a machinist or a sectionman because of the fact that he works in Montreal rather than in some less-congested centre, as there obviously is on the telegraph operator for instance. Consequently, with the elimination of the necessity for special rates of pay for men at specific points, it is possible to conclude general agreements for maintenance employees of all railways.

In connection with these agreements the railways act through the Railway Association of Canada. This body is an outgrowth of the Canadian Railway War Board which was formed as a war measure in order to obtain central direction to and co-ordination of railroad transportation. When this board was disbanded at the end of the war, the railways considered it desirable to have a medium for joint action whenever they felt such to be necessary. For this reason the Railway Association

was formed. It is not an organization distinct from its members, but merely a medium through which the railways can act together.

Two sub-committees of the Association have been set up, one to negotiate agreements with the mechanical employees, and the other to do the same with the maintenance of way employees. The existing agreements covering the employees in these departments have been concluded by the Railway Association with Division No. 4 and the Brotherhood of Maintenance of Way Employees. It will be noted that these agreements have been made direct with the unions, and not ostensibly with the employees as represented by the unions as in the case of the transportation employees.

Although all disputes in their preliminary stages are dealt with in the same way, the final court of appeal is not the same in all cases. The disputes should be divided into two classes -- those arising out of the interpretation of existing agreements, and those developing out of a desire on the part of one of the parties to change an agreement. For certain classes of employees there is machinery for the settling of all disputes on interpretation without recourse to outside intervention. The first provision of this nature was the Canadian Railway Board of Adjustment No. I, which was established in August 1918 in order to assure continuous railway service during the course of the war. The Board worked so satisfactorily for all parties that it was decided to continue its operation to cope with peace-time disputes. Accordingly, on April 15, 1921, an agreement was signed between the Railway Association and six

brotherhoods to provide for the continuation of the Board.

As at present constituted, Board of Adjustment No. I consists of twelve members. Six of these are appointees of the Railway Association, while the others are representatives of the brotherhoods, one for each. The brotherhoods represented on the Board are the four international organizations of the running trades -- engineers, firemen, conductors, and trainmen -- the Order of Railroad Telegraphers, and the Brotherhood of Maintenance of Way Employees. The Board is empowered "to determine all differences which may arise between the said railways¹ and any of the classes of its employees above-mentioned, . . . including the interpretation of wage schedules or agreements" ² Moreover, it is provided that the Board may deal with disputes between any employees and any railway not represented on the Board, if both parties agree to submit the dispute. The phraseology of the agreement does not restrict the activities of the Board to any particular type of dispute, but in practice it deals only with those arising out of interpretations of the rules. Only a simple majority is required to reach a decision, and all such decisions are binding.

Due to the Board being composed of an even number of members, provision is made for settlement in case of a deadlock. If the Board is unable to reach a decision, any six members may elect to refer the question to a referee, who must be chosen by

1 - The members of the Railway Association are: Algoma Central; Canadian National; Canadian Pacific; Central Vermont; Dominion Atlantic; Esquimalt and Nanaimo; Great Northern; Montreal and Atlantic; Michigan Central; Midland Railway of Manitoba; New York Central; Northern Alberta; Quebec Central; Temiscouata; Temiskaming and Northern Ontario; Toronto, Hamilton, and Buffalo.

2 - Canadian Railway Board of Adjustment No. I - Memorandum of agreement.

a unanimous decision. If it is impossible to achieve unanimity in this connection, the referee is appointed by the Minister of Labour. The Board has dealt with some four hundred cases to date, and as yet no recourse to this provision has been necessary.

Modelled on this Board, the Canadian National Railways Employees Board of Adjustment No. 2 was established by an agreement dated September 1, 1925. Board No. 2 determines disputes on the interpretation of the wage agreement between the C.N.R. and the clerks, freight handlers, and other employees represented by the Canadian Brotherhood of Railway Employees. It is composed of eight members, four appointed by the management and four by the employees. In the event of a deadlock an arbitrator may be appointed by a unanimous vote of the Board. Out of about ninety cases this has been necessary in only one instance.

Disputes are to be submitted to both these boards only after negotiation between the two parties has failed to settle the matter. The parties to the dispute are requested to submit a joint statement of the facts.

Any dispute arising in connection with all other classes of employees, and all disputes involving a change in an existing agreement are settled finally under the Industrial Disputes Investigations Act. There is no court of appeal within the industry for these cases.

CHAPTER III.

MOBILITY.

Mobility has received too little attention in the past, although its importance is now becoming more generally recognized. Too often the tendency has been to take complete mobility for granted, or to treat the degree of mobility as a constant which could be dropped from the calculations. But the degree of mobility is not constant. It varies from industry to industry, from place to place, and from time to time. It cannot be ignored, for to ignore it would be to give an extremely limited picture of the problem of unemployment.

The question of mobility is one which is extremely pertinent to the study of unemployment, for it may play an important role in determining the volume of unemployment. With a completely mobile labour force an industry possesses one pool of labour upon which all sections can draw as needed. But where restrictions to mobility exist, each section of the industry builds up its own reserve of labour -- a reserve sufficient to supply its peak requirements. The sum of these reserves is not necessarily equal to the reserve that would be required by the whole industry if complete mobility existed. It is usually greater, and to the extent that it is greater, the lack of

mobility is directly responsible for a portion of the unemployment.

However, mobility is to a large extent an intangible factor. One cannot determine the exact degree of mobility at any particular time and place and express it in mathematical terms. Nor is it possible to calculate the precise amount of unemployment for which the lack of mobility is responsible. One can only state the obstacles to mobility that exist, estimate their importance, and thus show the difficulties to be overcome in providing more continuous employment.

Since this study relates chiefly to conditions in Montreal, occupational mobility is the prime concern. It is the obstacles to this type of mobility that must receive the closest attention. But there are also obstacles to mobility within the occupational groups. In dealing with these latter, only conditions within the area adjacent to Montreal are described. But the restrictions to movement between this and other areas are much the same, with, of course, the added difficulty that movement outside of this area would involve a change in residence.

The obstacles to mobility in the railway industry are of two kinds. There are, first, the technical obstacles created by the division of labour, and, second, the artificial obstacles of the trade union regulations. In connection with the short-run changes in employment at least, the former define the limits of mobility. In remedying technological unemployment, training may break down these obstacles to some extent, but even here it has distinct limitations. As a remedy for unemployment due to seasonal or cyclical fluctuations, however, training is

of little use. In order to break down these obstacles it would be necessary to forfeit the advantages that specialization has brought. If each man were to be trained to fill at least two positions, specialization would no longer exist.

Since these technical obstacles define the limits of mobility, they will be considered first.

Technical obstacles to mobility. As was shown in Chapter II, there are not so many crafts in transportation and track work as there are in bridge and building and maintenance of equipment, nor are so many of them skilled. Figure 1, since it is intended to show the different services performed by the men, unduly complicates the situation in connection with the running trades. There are, in reality, only four classes of workers in this group -- engineers, firemen, conductors, and trainmen. Although a road engineer may require somewhat more experience than a yard engineer, the work performed by both is, in the final analysis, the running of a locomotive, and therefore there is no essential difference between the two. The same applies to the other classes. A further qualification must be made in the case of the running trades. Conductors and engineers can, and do at times, perform the work of trainmen and firemen, respectively. Since the engineers attain their positions by means of service as firemen, the difference between the two is more of a difference in the degree of skill than in the class of work. The relation between conductors and trainmen is of the same character.

Track work is not so specialized as other railway work and consequently there are not the same obstacles to

mobility. The only skilled men are the signal and interlocker maintainers and repairmen, and these form a very small proportion of the total force. The one class of sectionmen make up the larger part of the track forces, and there are obviously no technical obstacles to mobility within this group.

The B. and B. department and maintenance of equipment, however, have a high degree of specialization. The workers in the B. and B. department do not form a very large percentage of the employees in Montreal, and the list of crafts given in Figure 1 is sufficient to illustrate the obstacles to mobility that exist in this work. But no list of the crafts in maintenance of equipment could even remotely illustrate the actual obstacles in that class of work. Figure 1 merely enumerates the main crafts, whereas there are innumerable subdivisions of each craft, and the line of demarcation between two subdivisions in the same craft may be just as final as that between two separate crafts. For instance, there are at least fourteen types of work covered by the machinists' schedule which require a special training and skill which the machinist's apprenticeship does not and cannot furnish. The men in each of these positions are specialists, and just as separate from one another as the ordinary machinist is from the boilermaker. No man is capable of filling more than one of these positions, and the ordinary machinist is not capable of filling any of them. The situation may be illustrated by an incident which took place in the Angus Shops of the C.P.R.

One of the special types of work mentioned above is that of setting the tyres on the wheels. A machinist who had been laid off claimed a position as tyre-setter, pointing out

that tyre-setting was machinists' work and that he was senior to the men doing that work. He was completely within his rights and so was given a trial. He lasted two days. At the end of that time he was forced to admit that he could not do the work. This is not an extraordinary situation. It is only one incident of many that might be cited, and although there are more specialists in the machine shop than in other work, there are many in every craft.

In each craft, also, there is work which, although not done by specialists, requires a greater degree of skill or more knowledge and intelligence than is possessed by the average member of the craft. In boiler work, for instance, the flanger is more highly-skilled than his fellow workers, and the marker off, in addition to being a regular boilermaker, must be able to read blue prints and lay out the work from them. Thus, although the flanger and the marker off are able to do regular boiler work, an ordinary boilermaker could not do their work.

This element of difference in the degree of skill has in some cases become so established as to operate as a double check to mobility. This is illustrated in car repair work. The coach carpenters and the freight carpenters are separated into two distinct classes in this manner. Those in freight work have not the skill to do the more highly-finished work of the coach carpenter; coach carpenters, however, would be able to do freight work, and possess the right to exercise their seniority in freight work. In fact, they do not do so. It does not seem to have been definitely proved at any time, but it is generally assumed that their higher skill acts as a barrier which prevents them being

employed on the rougher work. Whereas the freight carpenter does not possess sufficient skill to do coach work, the coach carpenter is too highly-skilled to do freight work. A joint in a passenger coach must be fitted perfectly in order to prevent a draught. But draughts do not affect freight, and if the carpenter takes the time to do the work well, as the coach carpenter could hardly avoid doing, that time is wasted. The result in this case would be uneconomical for the company. If the coach carpenter did do the work "economically" his skill would probably deteriorate.

All these factors form technical obstacles to mobility, and thus complicate the problem of unemployment. All are natural conditions under which the work must be performed as the industry is now constituted, and thus there is no possibility of ameliorating their effect. We find, then, three separate and distinct branches of railway work, and innumerable crafts in each branch. This complex structure of the industry, and the complications which it introduces, must always be kept in mind.

Trade Union Regulations. The other obstacles to mobility -- the trade union regulations -- have been termed artificial because it is possible to remove or alter them. There is no intention to imply that they are all necessarily injurious in their total effect. They may be desirable from other points of view, but, desirable or undesirable, they constitute obstacles to mobility, and it is as such that they are discussed here.

This aspect of the problem is mainly a question of the way in which the seniority lists are made up. We have already considered the groupings of the employees according to the class

of work which each performs. But the seniority regulations subdivide these groups and therefore introduce further complications. The men in one group do not all belong to the same pool, for they are placed on the seniority lists according to the point at which they work, and can exercise their seniority only on territory covered by the seniority list.

The running trades, because of the nature of their work, have the most complicated arrangements for seniority, and these arrangements are different for the two railways, so that it is necessary to consider each separately. In the C.P.R. the engineers and firemen running out of Montreal are divided between four seniority districts. These districts cover the runs on the lines coming into Montreal and the work in the Montreal yards as follows:

<u>Seniority District</u>	<u>Lines</u>	<u>Montreal Yards</u>
No. 1	Montreal to Ottawa Montreal to Mont Laurier	Outremont Hochelaga
No. 2	Montreal to Smiths Falls	Sortin
No. 3	Montreal to Quebec	
No. 4	Montreal to Megantic	Outremont Glen

Each of the districts includes subsidiary lines along these main routes, and in some cases lines beyond the points mentioned. But this is the division of the work which relates directly to Montreal. The hostlers are on these same lists with the engineers, although some men have been made permanent hostlers because defects in eyesight or other reasons prevent them from taking runs.

The conductors and trainmen have somewhat different

seniority districts. Those running out of Montreal may be on any one of five districts. The lines covered by each of these districts are as follows:

District No. 1	South shore line Montreal to Ottawa.
" " 2	North shore line Montreal to Ottawa; Montreal to Mont Laurier.
" " 3	Montreal to Quebec.
" " 4	Montreal to Megantic.
" " 5	Montreal to Smiths Falls.

Yard foremen and yardmen have seniority rights only in the yard in which they work. In Montreal Terminals there are four main yards -- Hochelaga, Outremont, Sortin, and Glen Yard -- and, therefore, four separate seniority lists.

On the C.N.R. both the engine and train crews running out of Montreal are divided between two seniority districts. Generally speaking, the first, the Montreal District, covers all lines running south of the City and west as far as Brockville, Otter Lake, and Brent. The other, the Quebec District, consists of all lines running north of Montreal and east as far as Riviere du Loup and Monk. These are the operating districts as well as being seniority districts. This arrangement is somewhat more simple, but it is complicated in the case of the conductors and trainmen by the fact that the districts are made up of divisions, and for these classes of employees there is a separate seniority list for the local runs on each division, in addition to the general district list. The men can hold seniority on either of these two lists.

Unlike the C.P.R. men the C.N.R. hostlers have a seniority list of their own, separate from the engineers. Their

seniority districts are the same as those of the road crews. The yard foremen and yardmen in the Montreal Terminals have one seniority list. The C.N.R. has two main yards in Montreal -- Turcotte and Point St. Charles -- and the men in both are on the same list.

With the other classes of workers the seniority regulations are not so complicated, for they do not run over the lines but are stationed at one point at a time. On the C.P.R. the seniority lists for the operators and the levermen cover the Quebec District (which more or less corresponds to the Province); the sectionmen and B. and B. employees hold seniority only in Montreal Terminals; and the station baggagemen, freight handlers, and maintenance of equipment employees can exercise their seniority only in the station, freight shed, or shop in which they work. For example, there are separate lists for freight handlers at Place Viger and at the Montreal wharves, while the men employed in the Angus Shops have no seniority at any other point. On the C.N.R. the operators have the same seniority districts as the road crews, while the B. and B. employees, sectionmen, and freight handlers hold seniority in the Montreal Terminals. The seniority regulations for C.N.R. maintenance of equipment employees are the same as for those in the C.P.R.

The rules covering the working conditions of the maintenance of equipment employees include regulations which separate the running repair and back shop forces, and prevent the switching of men from the one class of work to the other. The machinists' special rules include the following statements

in this connection:

"Machinists assigned to running repairs, shall not be required to do work on back shop work at points where back shop forces are maintained."

"Back shop forces will not be assigned to perform running repair work, except when regularly assigned running repair forces are unable to get engines out in time to prevent delay to train movement."¹

This means that there can be no transfer of employees from one class of work to the other, although the men in each are doing practically the same work. The same regulations against back shop forces doing running repair work have been set up by the boilermakers and sheet metal workers. With respect to running repair forces doing back shop work, however, their regulations are not so strict as those of the machinists. The boilermakers' rules state specifically that "boilermakers assigned to running repairs may be used to perform other boiler work",² while the sheet metal workers, although frowning on this practice in general, permit it at points where no back shop forces are stationed.³ The other crafts have no regulations on this question.

This condition is qualified by the following note in the general rules covering all the crafts. The agreement states:-

"When it becomes necessary to make a reduction in expenses employees in any craft may exercise their seniority in any position belonging to their craft, in shops, round houses, or train yards under the jurisdiction of the same general foreman or shop superintendent"⁴

1 - Wage agreement No. 6 between the Railway Association of Canada and Division No. 4, Railway Employees' Department, A. F. of L., Rules 64 and 65.

2 - Ibid, Rule 76.

3 - Ibid, Rule 115.

4.- Ibid, note to Rule 31.

This provision, however, rather loses its force when we consider that in most cases each shop is under the jurisdiction of a different superintendent, and that the roundhouses are usually supervised separately from the back shops. This is true in Montreal where the back shops are large and where there are several roundhouses and train yards.

The foregoing regulations have the effect of dividing members of the same craft into groups. In addition, the system of trade union organization divides groups of workers doing similar work. There are not many instances in the industry of two groups of workers doing similar work, but one or two cases can be cited. The only conspicuous example is the similarity between the work performed in the shops and that in the bridge and building department. It is by no means certain that the bridge and building employees could do the work in the shops, but a man who had been trained in the shops could almost certainly do the work in the B. and B. department. Pipefitting in a passenger coach is not radically different from pipefitting in a building. Coach carpenters and B. and B. carpenters have much the same degree of skill, while freight carpenters and bridgemen are both rough carpenters. The fact that the craftsmen in the shops could do B. and B. work could only be definitely proved or disproved by trying them out on that work, but there is little likelihood that any efficiency would be lost by using the same men in both departments. But there is a clause in the rules governing the service of maintenance of way employees which precludes any such action. This rule reads as follows:

"Except in cases of emergency or temporary urgency, employees outside of the Maintenance of Way Service shall not be assigned

to do work which properly belongs to the Maintenance of Way Department, nor will Maintenance of Way employees be required to do any work except such as pertains to his division or department of Maintenance of Way Service."¹

This provision obviously restricts mobility.

Another case is found within the confines of the maintenance of equipment group. The welders and riveters are not all in one group. A welder belongs to the craft in connection with which he works. If he is welding in the machine shop he is a machinist. If he is welding in the boiler shop he is a boilermaker. Consequently he is restricted to one class of work. The same applies to the rivetter. Now although it is true that a machinist-welder if suddenly transferred to boiler work would probably be at a loss, it does not follow that he is incapable of performing that class of work. The only difficulty he would experience would be that he would not know where to look for the work, not having done it before. But if he had been trained in all classes of welding he could be moved around without any loss of efficiency. However, the craft demarcations prevent any such movement. The man is placed on the seniority list of his craft and cannot be moved to any other class of work.

One further case of this nature might be mentioned. The clerical forces in the yards and freight sheds are set apart from the assistant agents by the trade union organization. Although these two groups do practically the same work they do not belong to the same pool, for the men in the former group have been organized by the Brotherhood of Railway and Steamship Clerks and the C.B.R.E., and those in the latter by the Order of

1 - Wage agreement No. 8, rates of pay and rules governing service of maintenance of way employees, section 15.

Railroad Telegraphers.

All these regulations, since their tendency is to divide the workers into groups, restrict mobility. In doing so they complicate the problem of unemployment, but whether or not they increase the volume of unemployment is another question. They can only be said to increase unemployment when they prevent the transfer of workers from one job or place where they are not required to another job or place where they are required. It sometimes happens that there are two classes of work, performed at different times of the year, that require almost identical training and skill. It may also happen that the same class of work has different seasonal peaks in two adjacent districts. If there is no possibility of transferring the men from one class of work or district to the other as they are required, then the seasonal unemployment is the sum of the seasonal variations in the two classes of work or districts. But if such transfer is possible, then the seasonal variation in one cancels or minimizes the seasonal variation in the other. The result is that the seasonal unemployment is either eliminated altogether or considerably reduced.

Now the regulations which separate the workers in each department or craft from all others, since they definitely prevent any transfer, have an effect on the volume of unemployment. But as there are very few instances in which dovetailing between departments in the manner described above could be practised to advantage, the total effect of these regulations is not very great.

The effect of the seniority regulations on unemployment is problematical. There is nothing in these regulations to

prevent temporary transfers of employees from one seniority district to another if there is a surplus on one and a shortage on the other. Thus dovetailing between geographical areas is possible even with these regulations in existence. Moreover, a permanent transfer can be effected if the man concerned is willing to sacrifice his previously accumulated seniority. But if these regulations do not actually prevent dovetailing, they certainly do not encourage it. Their tendency as time goes on is to become more and more rigid, and the men become less and less inclined to look with favour on the policy of transferency if there is the slightest hope of obtaining work on their own district. The seniority regulations, then, should not be regarded so much as definite obstacles to mobility, as sources of friction which make transfers more difficult. They might be compared to grit in a machine, which, although it does not prevent the machine from working, yet it does prevent it from working with complete efficiency.

CHAPTER IV.

SEASONAL UNEMPLOYMENT.

When dealing with unemployment in one industry, the emphasis must be laid on that which results from seasonal fluctuations, for it is the only type of unemployment, apart from that caused by day to day fluctuations, that the industry is in any way capable of eliminating without aid or co-operation from outside. There is no need to go into the theory of business cycles to demonstrate that it is beyond the power of one industry to cope with cyclical unemployment. The solution for technological unemployment is a matter of training and placement in new positions, and, for the most part, this placement must be in other industries. Consequently the industry cannot deal with it by itself. But in the case of seasonal unemployment there is always at least the possibility that the activities of the industry can be spread evenly over the year, and unemployment either eliminated or reduced without any outside interference. Even one firm may be able to stabilize its forces without detriment to its position relative to other firms. It is more likely to enhance its position than to weaken it by such action. Without apology, then, the emphasis in this study is placed on seasonal unemployment.

In the analysis of seasonal unemployment two sets of statistics are used, neither of which relates directly to the group of workers studied. The first set, on which the greatest

reliance is placed; consists of statistics of the number of men employed by the railways in the Province of Quebec on the last day of each month.¹ The second set is based on the statistics of the membership and the number unemployed in the locals of the railway unions in Montreal on the last day of each month, the number of unemployed being expressed as a percentage of the membership.² Thus one set relates to employment in the Province of Quebec, and the other is restricted to unemployment amongst the members of the trade unions. However, the employment statistics should be representative of Montreal, for the employees in Montreal form a large proportion of those in the whole Province. But the trade union statistics, since they exclude a considerable portion of the low-skilled groups, can only be said to be indicative of trade union unemployment. The fluctuations in the employment figures and the trade union unemployment percentages, respectively, from 1924 to 1931 are shown in Figures 3 and 4.

The method of calculating seasonal unemployment is that generally recognized at present as the best.³ In the case of the employment statistics the trend is eliminated by means of a twelve-months moving average, and the seasonal is taken as the ratio of the observed figure to the trend. The normal seasonal is calculated by averaging the January, February, etc., ratios for the period 1924 to 1929. The trend is eliminated from the trade union unemployment percentages in the same manner as for

1 - For a detailed discussion of the employment statistics see Appendix A.

2 - The trade union statistics are discussed in detail in Appendix B.

3 - The Problem of Unemployment by Paul H. Douglas and Aaron Director, p. 74.

the employment statistics. Where it is practicable to calculate a seasonal from them, the seasonal is taken as the difference between the observed figure and the trend, and expressed as a plus or minus deviation.

There would be nothing to be gained from a discussion of the seasonal fluctuations in the railway industry in Montreal as a whole. The timing of the fluctuations is different in each department, and therefore the fluctuations in the total are merely an average of the various departments. Since the work is of a different character in each of the three main departments, the fluctuations in the industry as a whole have no significance. For this reason it is necessary to discuss each department separately.

A. Transportation.

Volume of seasonal unemployment. The only employment statistics available for transportation unfortunately include a group of workers not engaged in transportation work. The figures are for "railway operation", and they include the general office workers in Montreal. This latter group is about equal to the transportation group in numbers, and since it is subject to rather wide fluctuations, obscures the picture of unemployment in transportation proper. If the method of calculating seasonal unemployment described above be applied to the railway operation figures, we find that the difference between the maximum and the minimum is 7.4 per cent. (of the maximum). Thus we may say that 7.4 per cent. of the maximum number of workers are unemployed during part of every year due to seasonal factors.

It has been possible to obtain statistics of employ-

FIGURE 3.

FLUCTUATION IN RAILWAY EMPLOYMENT Province of Quebec
As at the Last Day of Each Month
BASE - 1926 = 100

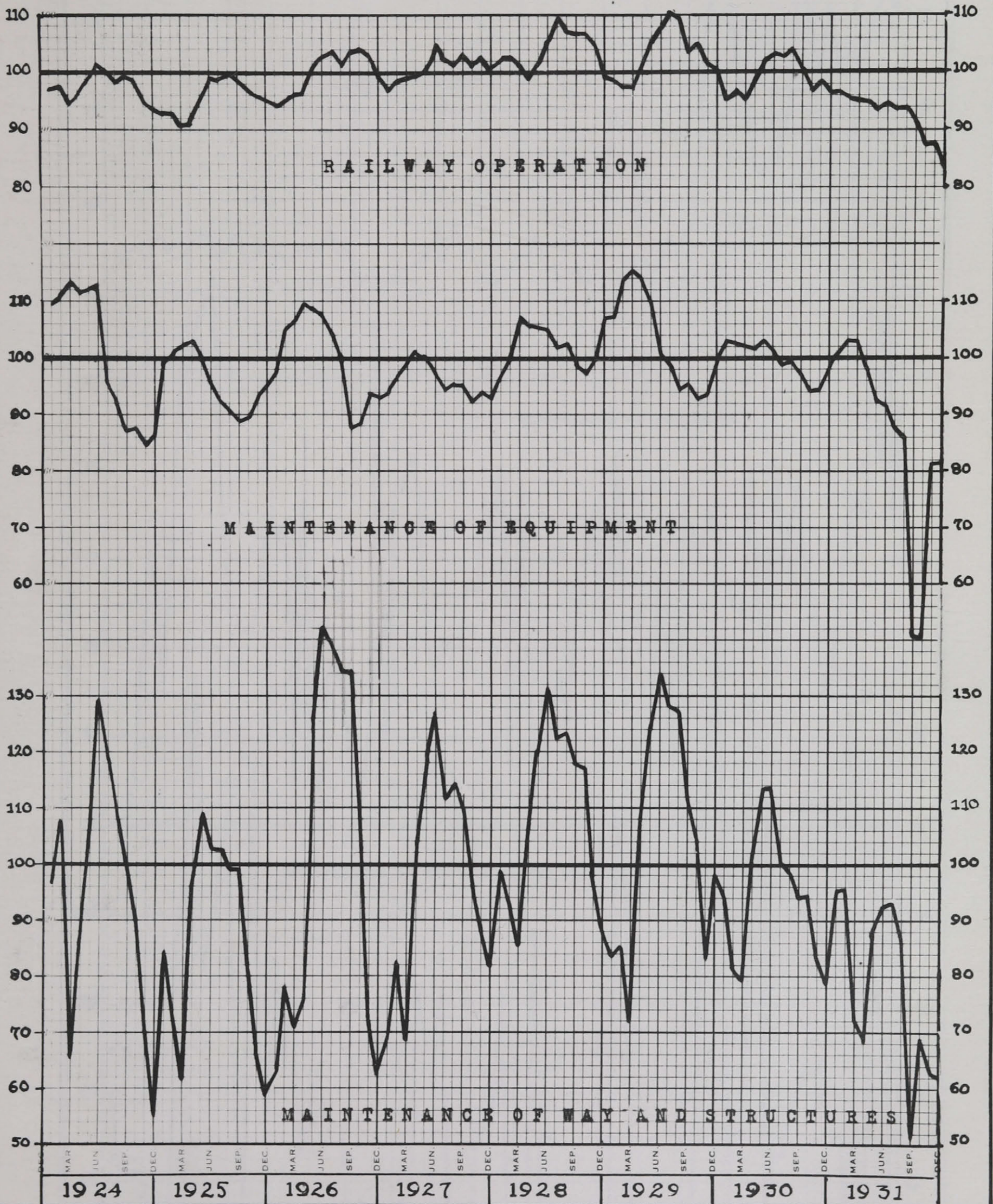


FIGURE 4.

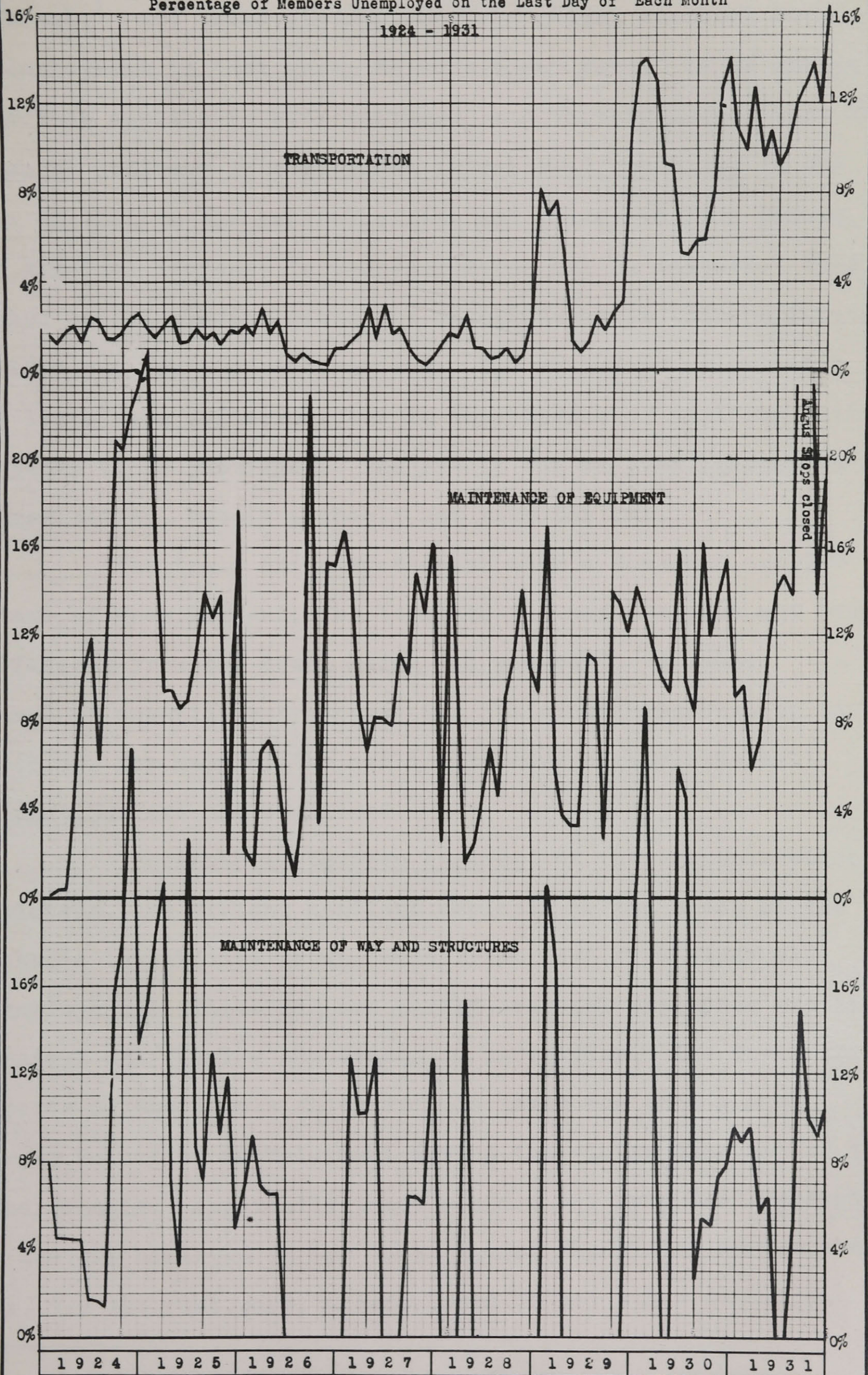


RAILWAY TRADE UNION UNEMPLOYMENT

MONTREAL

Percentage of Members Unemployed on the Last Day of Each Month

1924 - 1931



ment for the general office workers of one of the railways in Montreal,¹ and these figures show the normal seasonal drop in employment in that group to be 4.5 per cent. If we assume that this applies to both railways, and further assume that the seasonal decrease in employment in railroad operation is the mean of that in the general office and transportation groups, the seasonal decrease in transportation can be deduced. This method of calculation gives the unemployment in transportation as 10.3 per cent. of the maximum. The method of calculation may leave room for error, but in the absence of anything better it seems to be justified. The result can only be treated as an approximation, but is probably not very far out.

The trade union statistics show a somewhat smaller volume of unemployment, the total of the maximum plus and minus deviations from the trend being 3.1 per cent. A lesser volume of unemployment amongst the trade union members is to be expected, for many of the men in the more highly-seasonal occupations are not organized.

Incidence as between groups. Of the transportation employees, the freight handlers employed in the sheds on the docks, a low-skilled group, suffer the most from seasonal unemployment. These men are purely seasonal employees who are required only during the season of navigation. The trade union reports of the locals which include these men show a much larger volume of unemployment during the winter than any of the other locals. Apparently these men are not only not employed as freight handlers on the docks during the winter months, but are, for the most part, not employed in any other capacity.

1 - See Appendix C.

This was revealed by a sample study made of the truckers, using the records of one of the railways.

The number included in this sample was 29, for 20 of whom record of winter employment during the five or six years prior to 1932 was available. Of these 20, the records showed that 14 had not worked at all during the five or six winters, five had worked one winter out of a varying number, while only one showed a record of more than one winter's work. Although the sample is small, the results shown are anything but indefinite. It is possible that with such a small sample a larger number of those who did not work in these winters than those who did was included. But even if this were allowed for, the percentage who had no winter work would still be large.

Here we have a group of men, paid approximately fifty cents an hour, who are unemployed for three or four months during each year. How is this possible? How do they support themselves for twelve months on eight months' wages at fifty cents an hour? The answer, or at least a partial answer, seems to be that many of these men come from farms near Montreal, and return there to live in the winter on what they manage to save during the season of navigation.

This group is the one most affected by seasonal fluctuations, there being considerably less seasonal unemployment in the other groups. There are no statistics available to show the relative weight of seasonal unemployment in the other transportation groups. The employment statistics are not subdivided into these smaller groups, and the trade union statistics are not sufficiently comprehensive to demonstrate clearly

anything but the large amount of seasonal unemployment amongst the freight handlers on the docks. But these statistics seem to show that the group that comes next in the volume of seasonal unemployment is that of the station baggagemen and the remainder of the freight handlers, with the latter probably bearing the larger share, the running trades next, while the telegraph operators, agents, ticket sellers, etc., obtain relatively stable employment the year round. Within the running trades the bulk of the seasonal unemployment falls on the firemen and brakemen, for the engineers and conductors can displace them when not required in their regular capacity.

Thus the weight of seasonal unemployment seems to fall on the low-skilled groups -- the freight handlers and station baggagemen. But whether this is only because they are low-skilled is somewhat doubtful. Seasonal unemployment amongst the freight handlers on the docks is shown clearly to be considerably heavier than in the other groups, but these men are engaged in work which is purely seasonal because of climatic conditions. One could not say that their low degree of skill was the cause of their being let out of the industry in the winter, although there might possibly be some connection between their skill and the fact that they do not obtain work elsewhere at that time of the year.

The work of the remainder of the freight handlers and that of the station baggagemen is no more seasonal in character than is that of the running trades. If it could be shown definitely that there was a greater percentage of seasonal unemployment amongst the former than amongst the latter, it

might be possible to deduce some relation of this to skill. But this difference in the incidence of seasonal unemployment is not shown clearly by any available statistics, and, considering the limitations of the data, it would be unwise to draw any such conclusions.

Timing of seasonal fluctuations. The normal seasonal movement calculated from the employment figures, shown in Figure 5, demonstrates that the month of minimum employment in railway operation is March. In April employment increases slightly, and from then on rapidly until the peak is reached in July. There is then a decline until the end of October, followed by a sharp falling off throughout November, December, and January. There is a slight increase in February before the low is reached in March. In one respect this normal is not truly representative, for the peak may occur any time from July to September. However, otherwise it seems to represent the facts accurately.

The month during which the greatest increase takes place in these figures, i.e., the month of the greatest demand for labour in the labour market, is May, although June shows an increase almost as great. The month during which the greatest reduction in forces takes place is December.

The percentages of trade union unemployment in Montreal show a somewhat different normal seasonal movement, as can be seen from Figure 5. If this movement in the unemployment percentages be inverted and expressed in terms of employment rather than unemployment, we find that the month of minimum employment is February, and that the increase is from then until

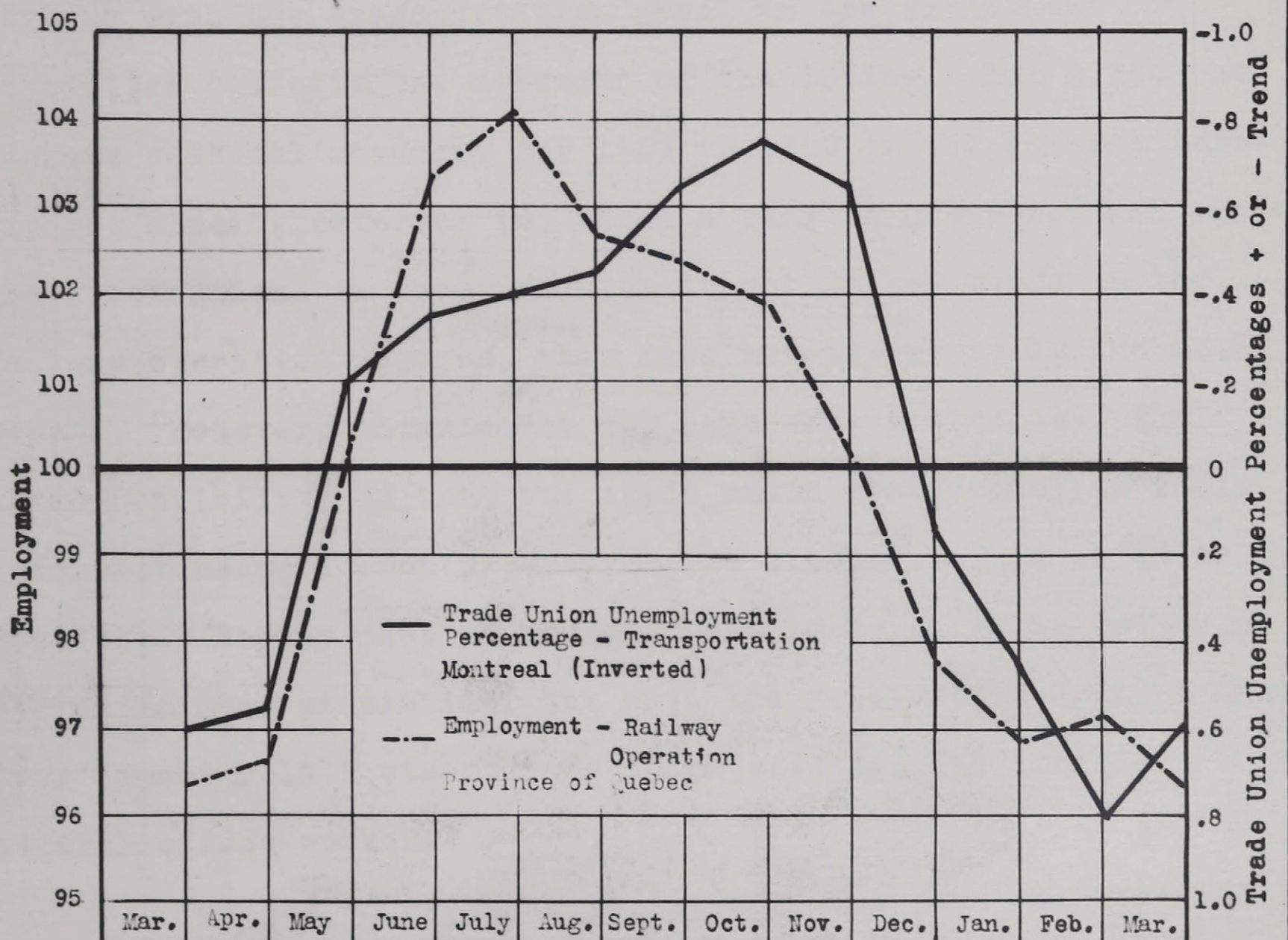
FIGURE 5.

NORMAL SEASONAL VARIATION IN TRANSPORTATION GROUP

Employment Statistics and Trade Union Unemployment Percentages Compared

Average 1924 - 1929

100 = 12 months moving average



October, with a corresponding decrease from October to February.

The reason for the different movements in the employment and trade union unemployment statistics is not immediately apparent. There are only three possibilities. One is that the seasonal movement in Montreal is different from that in the whole Province. This hardly seems likely as the majority of the transportation workers in the Province are either situated in Montreal or work on trains operating out of this city. The second is that the inclusion of the general office workers with the transportation group in the employment statistics distorts the movement of the latter. But since the average seasonal movement for 1924 to 1929 in the general office figures already referred to, shows a peak in October,¹ and since the fluctuations in these figures do not follow those in the railway operation figures, this does not appear to be the main reason. However, this factor may have some influence. The third possibility is that the trade union statistics, in their incompleteness, do not present a true picture. This is quite possible. In any case it would appear to be safer to rely upon the employment statistics, but with the reservation in mind that they do not relate strictly to transportation but include general office workers.

Causes of seasonal variation. The seasonal movement in employment in transportation is directly caused by the variations in traffic. It is the result of two separate seasonal movements in this field -- that of passenger traffic and that of freight traffic, for the peaks in these two services

1 - See Appendix C.

do not coincide. The peak month for passenger traffic is August, whereas the peak for freight traffic comes somewhat later, usually in October. It is the coincidence of these two peaks that creates the peak of employment.

No absolute correlation can be established between traffic and employment. The month in which traffic is at its height is not necessarily the month in which employment is greatest. The only relation which can be established is that employment is greatest at the time of the year when traffic is greatest. The reason for the absence of monthly correlation is that there is a considerable range to the volume of traffic that can be handled by the railways with any given number of employees. The result of an increase or decrease in traffic within this range is merely a change in the amount of traffic carried by each train, or a change in the amount of work afforded the men already engaged.

There are no statistics available of freight handled or of passengers carried in the Province of Quebec, so that in order to analyze the seasonal variation in employment, it is necessary to use figures which can only be considered indexes. Statistics of passenger traffic are available only for the whole of Canada. However, the timing of the seasonal fluctuations in passenger traffic is not likely to be different in Quebec than in the country as a whole. Therefore, the statistics of passengers carried one mile in Canada¹ can be relied upon to show the fluctuations in passenger traffic in Quebec. As an index of freight handled, the total of freight originated,

1 - For the traffic statistics and a discussion of their reliability see Appendix D.

freight unloaded and freight delivered to foreign connections in the Province is used. These, then, are the statistics on which the following analysis is based.¹ The seasonal fluctuations in the traffic statistics from 1924 to 1929 are compared with the seasonal fluctuations in employment in railroad operation for the same period in Figure 6.

The timing of the seasonal fluctuations in passenger traffic is very regular from year to year. There are about a dozen peaks in each year that are approximately equal, such as those at Christmas, Easter, and school closing. These are the peaks for which the railways build, but it is the fluctuations from month to month that concern us here. The monthly totals of passenger traffic show that the month of least traffic is February, while the month of heaviest traffic is August. Climate is the determining factor of this variation. During the winter, travel is largely restricted to the exigencies of business, for there is little pleasure in travelling during the cold winter months.² Summer weather is more conducive to travel, and the practice generally followed by business firms of giving the holidays during the summer, naturally leads to a greater amount of travel during these months.

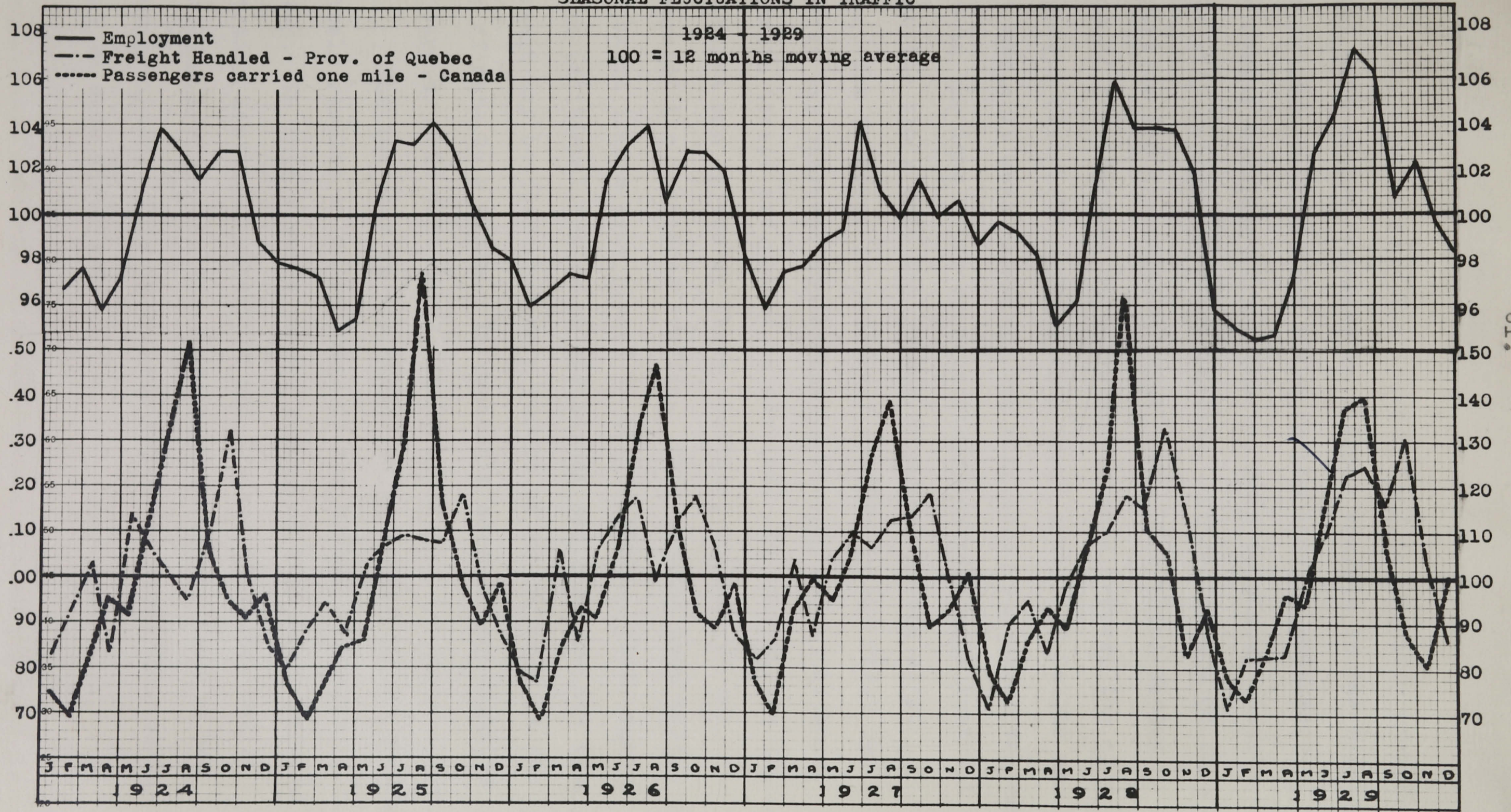
In relation to Montreal there are three ways in which passenger traffic is increased in the summer. There are the tourists who travel from place to place, choosing the summer for this because they then have more time to do so and because the

1 - For the traffic statistics and a discussion of their reliability see Appendix D.

2 - The ski-trains operating out of Montreal are not numerous enough to have much effect on employment.

FIGURE 6.

SEASONAL FLUCTUATIONS IN EMPLOYMENT IN
RAILWAY OPERATION IN THE PROVINCE OF QUEBEC
Compared With
SEASONAL FLUCTUATIONS IN TRAFFIC



weather is more suitable. The tourist traffic probably provides the least part of the increase in railway traffic in the summer, for the greater part of this travel is now done by automobile. A greater factor consists of persons who move to summer resorts from the city during the summer months, either for all of July and August or for a portion of that time. The third factor consists of the increase in those who commute between the city and adjacent districts. There is a large number of people who find it not only more pleasant, but also more economical to take a house on the lake shore or some other district near Montreal and take the train each day to and from work in the city.

The increase in passenger traffic in the first two categories may increase employment in several ways. In some cases extra trains are placed in service. In others, the trains are at times run in two or three sections, instead of one, to take care of the increased traffic. This has the same effect as though extra trains were placed on the schedule. Then, again, although additional trains or additional sections are not run, employment may be increased as a result of an increase in the number of cars to a train. In passenger service any train of eight cars or more must carry two brakemen.

The increase in the number of commuters in the summer definitely results in an increase in the number of trains operated. In this service in the summer of 1932 there were 26 more trains leaving Bonaventure and Windsor stations, and 32 more trains arriving in those stations per week, than in the following winter. This is the equivalent of about four trains per day in each direction.

The seasonal fluctuations in freight traffic are not so pronounced as those in passenger traffic, but they have a greater effect on the fluctuations in employment. In passenger service a certain minimum must be maintained the year round, and the passenger trains operating at the time of the year when passenger traffic is at its minimum are capable of taking care of a considerably larger volume of traffic. In freight service, however, a train pulls out when there is sufficient freight to make up a train load. There is, of course, a schedule for freight trains, but this is not rigid as is that for passenger trains. It is a frame-work around which the service is built, not a rule which must be strictly adhered to.

The peak for freight traffic in the Province of Quebec varies, but it occurs more often in October than in any other month. Now the peak of employment does not coincide either with that for freight or for passenger traffic. In view of the traffic statistics used for Quebec, it is necessary to compare the correlation between traffic and employment in this Province with that in all Canada.

In Canada as a whole the employment figures are at their highest point in October,¹ the month showing the greatest volume of freight traffic,² even though passenger traffic is greatest in August. The reasons why the same correlation is not shown in the figures for Quebec would seem to be two-fold. In the first place, greater weight should be given to passenger traffic because of the larger percentage of urban population,³

1 - Normal seasonal calculated from the employment index for "steam railway operation" as in The Labour Gazette.

2 - Chart attached to the Report of the Royal Commission on Transportation, 1931-2.

3 - Canada Year Book, 1932, p. 102, table 9.

particularly since we are relating these statistics to Montreal. In the second place, although freight traffic in Quebec is usually greatest in October, the peak in that month is not so sharp as it is in all Canada. A greater proportion of this traffic is carried during the summer. An analysis of the statistics for Canada and Quebec reveals this.

The freight handled by the railways may be divided into the five standard groups of commodities, viz., agricultural, animal, mine, forest, and manufacturing products. The proportionate importance of these five groups in Canada and in Quebec is shown in Table 2, the statistics being for the year 1926.

TABLE 2.

RAILWAY FREIGHT TRAFFIC

Proportionate Tonnage of Classes of Commodities; Canada and
Province of Quebec Compared.

1926

Class	Percentage of total	
	Province of Quebec ¹	Canada ²
Agricultural products	16.4	22.3
Animal products	2.3	3.0
Mineral products	26.8	35.0
Forest products	23.3	14.5
Manufactures and miscellaneous	31.2	25.2
	100.0	100.0

- 1 - Calculated from the total of freight originated, freight unloaded, and freight delivered to foreign connections as in the Monthly Traffic Report of the Railways of Canada.
2 - Canada Year Book, 1932, p. 544, table 12.

Agricultural products form a greater proportion of the total freight in Canada than they do in Quebec alone. Now the heavy movement of this group of commodities is in the autumn after the harvest, but since they are not of as great importance in Quebec, the increase in freight handled in the autumn is not so pronounced. Manufactured goods constitute a much larger proportion in Quebec than they do in all Canada. The movement of these commodities is spread fairly evenly from June to October, and their greater weight in Quebec increases the volume of traffic during the summer. A difference between Quebec and Canada is also found in the handlings of mine products. In Canada the peak for this class of commodities occurs in October and November, by reason of the heavy shipments of coal in those months for heating purposes during the winter. In Quebec the heavy movement commences in July and continues throughout August, September, and October. The rail movement of coal is earlier in Quebec because Montreal is the distributing centre for Nova Scotia coal. This coal is carried to Montreal by water during the summer months and is distributed from there to points in Quebec and in the eastern section of Ontario.

It is in the statistics of the handlings of these three classes of commodities that we find the reasons for the heavier freight traffic in the summer in Quebec. The other two groups show much the same seasonal movement in Quebec as in all Canada. Forest products are generally handled in greatest volume in March when logs and pulpwood are moved from the bush. These are cut during the winter as the snow facilitates hauling. However, there is also a heavy movement of these products in July when

TABLE 3.

FLUCTUATIONS IN TONNAGE OF FREIGHT HANDLED
IN THE PROVINCE OF QUEBEC
BY CLASSES OF COMMODITIES¹
 1926

Percentages of Average.

(Figures underlined are maxima and minima.)

<u>Month</u>	<u>Agricul- tural Products</u>	<u>Animal Products</u>	<u>Mineral Products</u>	<u>Forest Products</u>	<u>Manufac- tures & Miscell- aneous</u>	<u>Total</u>
Jan.	82.7	<u>76.6</u>	<u>48.8</u>	<u>100.7</u>	<u>73.2</u>	74.7
Feb.	80.0	<u>62.8</u>	<u>42.7</u>	103.6	73.7	<u>73.1</u>
March	99.3	76.8	96.3	<u>129.1</u>	92.8	102.9
April	79.3	69.2	74.1	96.6	87.3	84.2
May	123.3	108.5	111.1	83.3	105.4	104.8
June	114.9	113.3	123.3	100.6	111.5	112.7
July	78.8	110.5	<u>137.7</u>	123.2	<u>119.2</u>	118.3
Aug.	<u>63.4</u>	116.5	127.4	89.0	104.2	100.5
Sept.	84.9	130.3	135.5	111.5	113.8	114.7
Oct.	<u>143.9</u>	<u>139.1</u>	129.4	95.0	114.6	<u>119.4</u>
Nov.	135.6	113.1	97.1	90.5	111.9	106.8
Dec.	113.9	83.2	76.4	<u>77.1</u>	92.4	87.8

1 - Calculated from the total of freight originated, freight unloaded, and freight delivered to foreign connections, as in the Monthly Traffic Report of the Railways of Canada.

lumber is transported from the mills. Animal products form such a small proportion of the total that their effect on employment is negligible. The fluctuations in the five classes of commodities in 1926 are shown in Table 3.

This analysis, then, demonstrates that a greater proportion of the freight is carried during the summer in Quebec than in Canada as a whole. When to this fact is added the consideration that passenger traffic should be given greater weight in Quebec, the earlier peak in this Province seems to be explained. It is the coincidence of the peaks in the two types of traffic that creates the peak in employment.

In the winter passenger traffic and all classes of freight traffic except forest products are considerably less, and this reduction in traffic results in the volume of unemployment discussed above.

B. Maintenance of Equipment.

Volume. In maintenance of equipment seasonal unemployment is greater than in transportation. The employment statistics show a drop of 16 per cent. from the maximum to the minimum, over twice that in railroad operation and one and a half times the estimate made for transportation. There is little to be gained by calculating a normal seasonal from the trade union unemployment statistics for this group. These statistics exhibit such irregular fluctuations that an average would not show the normal movement, for there would appear to be no normal. These irregularities are not caused by the fact that the locals do not report every month. However, they are not a complicating

factor. The explanation is comparatively simple and is revealed by the statistics of a local of one of the unions.

The majority of the locals report simply the number of members and the number of members unemployed on the last day of each month. But the local already mentioned, has followed the practice of reporting, in addition to the above, the number of members on part time. The following is an extract from the records of the reports of that local for the year 1931:-

<u>Month</u>	<u>Members</u>	<u>Number Unemployed</u>	<u>Number on Part Time</u>
June	421	200	0
July	408	0	408
August	414	204	210

The percentage of unemployment in this local would jump from 50 in June to zero in July, and back to 50 in August, whereas in reality the change in the volume of unemployment did not move as erratically as this. Half the members of the local were unemployed in June, all were on part time in July, and in August half were unemployed and the other half were on part time. This local is composed of carmen employed in the Angus Shops. At that time the passenger car shops there were open thirteen or fourteen days a month, so that there was no difference in the aggregate volume of unemployment, as between there being half the members unemployed and all the members on part time.

Incidence as between groups. The bulk of the seasonal unemployment is caused by the fluctuations in back shop work, and it is therefore the workers in the back shops who are most affected. Seasonal unemployment amongst the men engaged in

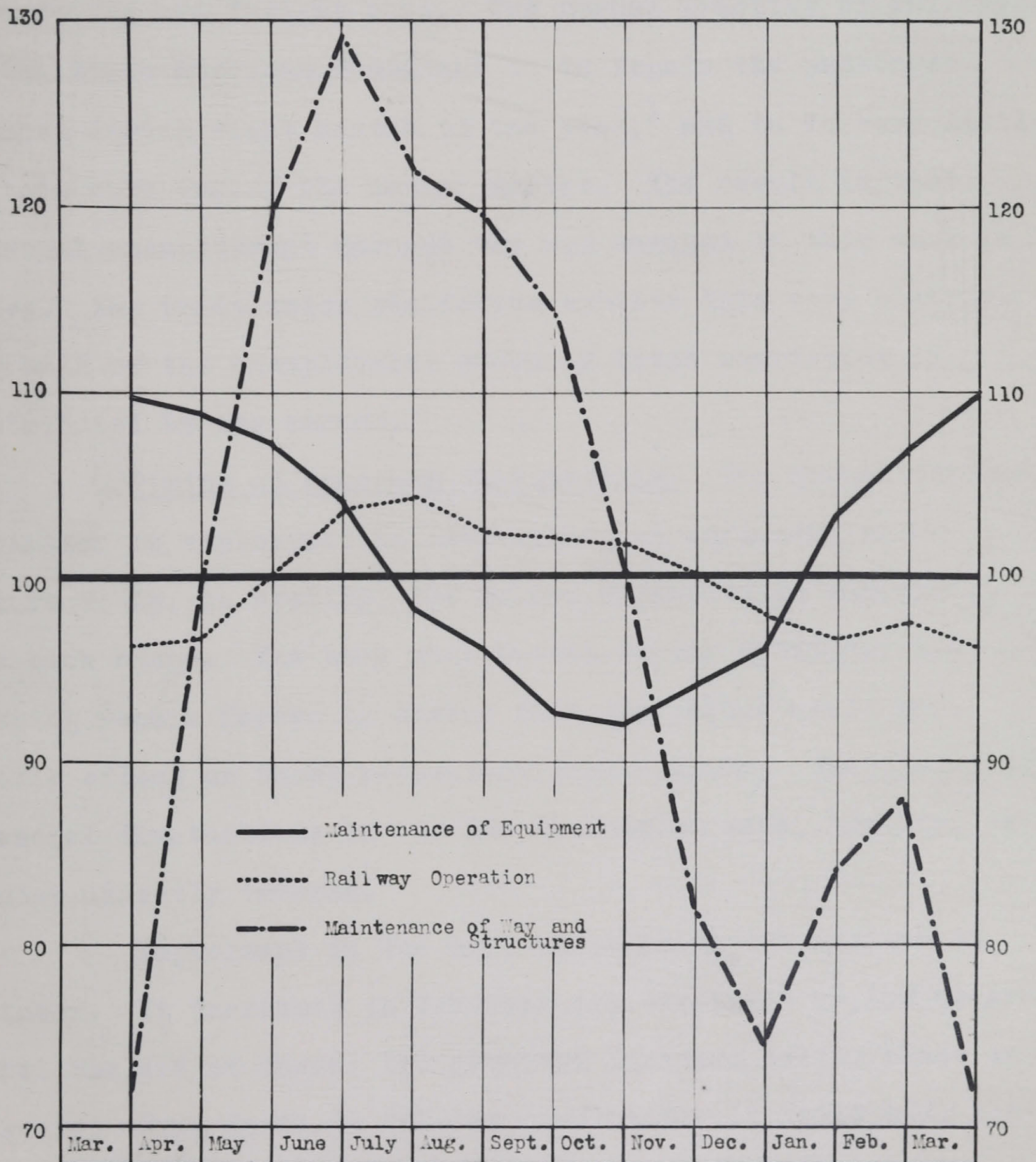
FIGURE 7.

NORMAL SEASONAL VARIATION IN RAILWAY EMPLOYMENT

In the Province of Quebec

Average 1924 - 1929

100 = 12 months moving average



running repairs corresponds more closely to that in transportation than it does to the figure mentioned above.

Of the back shop forces, those engaged in passenger coach work are most affected. The repairs to this class of equipment fluctuate to a greater extent than do those to locomotives and freight cars. The normal practice of railways on the North American Continent is to repair the passenger coaches during eight months of the year,¹ and to do very little of this work during the summer months. The result is that seasonal unemployment amongst the men engaged in this work is heavy. The trade union statistics exhibit this very clearly. The bulk of the unemployment shown by these statistics is contributed by the carmen.

Timing of seasonal fluctuations. The normal seasonal variation in employment in maintenance of equipment, shown in Figure 7, is, in reality, the normal variation in employment in the back shops. The back shop forces so far outnumber the running repair forces in Quebec that the latter would have little effect on these percentage fluctuations. The timing of seasonal fluctuations in the two classes of work, however, is almost directly inverse.

Employment in the back shops is at its minimum in October. It increases in November and continues on the up-grade until the end of March, the greatest increase taking place in January. From April to October, inclusive, it falls off, the lay-offs being in greatest volume during the month of July.

On the other hand, employment in running repairs is at its maximum during the summer and autumn, and at its

1 - The stabilization of employment in the C.N.R. shops is dealt with in Chapter VII.

minimum in March, with a corresponding increase and decrease between these two periods. Although there are no statistics to illustrate or to prove that this is the nature of the fluctuations, it will be apparent from the following section that this is so.

It is not possible to determine the relative burden of seasonal unemployment on the skilled and low-skilled workers in maintenance of equipment as the trade union locals all include both classes.

Causes. Both of the seasonal movements in maintenance of equipment are the logical result of traffic conditions. Heavy repairs to equipment are effected when that equipment is needed least. If equipment must be taken out of service to receive extensive repairs which may require considerable time, it is natural that they should be taken out of service when the demand for that equipment is at its minimum. Since the demand for equipment is regulated by the traffic that must be moved, heavy repairs, and therefore employment in that work, fluctuate inversely to traffic.

However, we have seen that the heaviest traffic in Quebec occurs anywhere from July to September, whereas the month of minimum employment in the back shops is in October. The reason for this is that the Angus Shops, which contribute a large proportion of the total employment in Quebec, serve all the C.P.R. lines east of Fort William. They therefore have more relation to traffic in Canada as a whole than to that in Quebec. The peak of employment in railway operation in Canada is in October and the minimum in March. Thus the back shop forces in Quebec show a direct inverse correlation to this group.

Running repairs, on the other hand, follow traffic directly, not inversely. It is implicit in the very term "running repairs" that they are proportional to the amount of use. The cost of running repairs divided by the relevant train miles is almost a constant. Now, since use is governed by traffic, employment in running repair work must also be governed by traffic. Employment in transportation is governed by the same factor, so that at least the timing of the seasonal variation in employment in running repair work must be the same as that in transportation. Whether the volume of unemployment is also the same is a matter of conjecture, but it seems highly probable.

C. Maintenance of Way and Structures.

Volume. There is more seasonal unemployment in maintenance of way and structures than in either of the other two groups. The difference between the maximum and the minimum in the employment statistics is 44 per cent. of the maximum, over six times that in railway operation, and nearly three times that in maintenance of equipment. Figure 7 demonstrates the much greater fluctuations in employment in this group. The trade union unemployment statistics also show wide fluctuations, but, as in maintenance of equipment, the fluctuations are too irregular to permit of the calculation of a normal. The reason for this is probably that the group is small. With a small group the fact that the constituent locals report only irregularly has a greater effect on the percentages than with a large group. The failure of one local to report in one month may result in a considerable change in the computed

percentage of unemployment for the total. But despite this, the statistics of the locals in this group that have reported regularly show very wide fluctuations, and therefore these statistics should not be ignored. They do reflect actual conditions, although perhaps exaggerating them somewhat.

Incidence as between groups. Those most affected by seasonal unemployment are the labourers in the extra gangs engaged in heavy repairs to the track. Except for one or two all-year-round gangs in Montreal, these extra gangs are formed when there is work to be done, and disbanded altogether when the work is finished. Thus the employment figures exhibit wide fluctuations. Moreover, the men in these gangs work very irregularly even when there is work to be done. This is demonstrated clearly by the results of a study that was made of the extra gangs in Montreal of one of the railways.

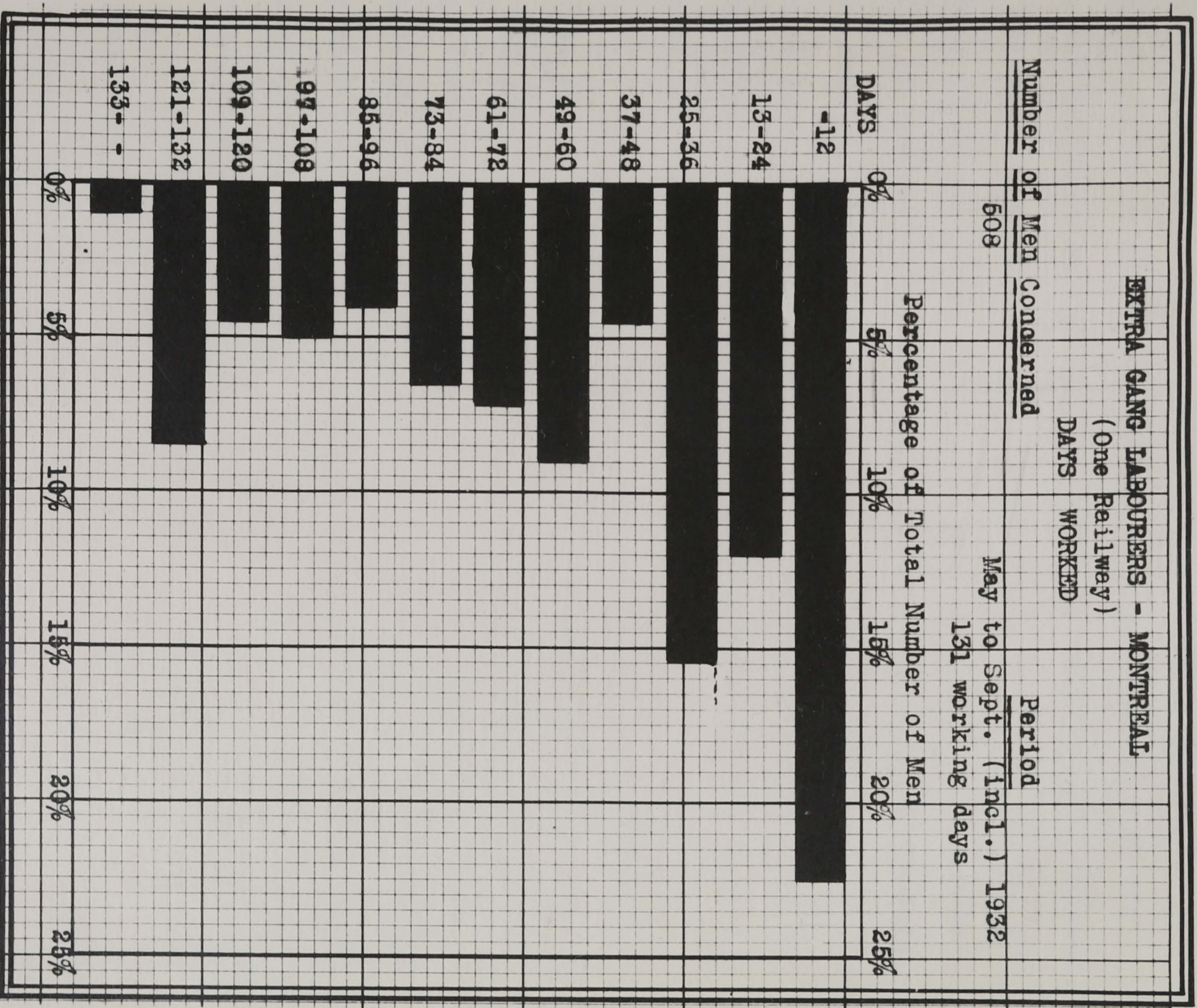
The period to which this study relates is that from May to September, inclusive, in 1932. The total number of working days in this period was 131, and the total number of men employed at one time or another during the period was 508.¹ The maximum number of men on any one payroll was 359, the men being paid twice a month. Of the total of 508 men 22.5 per cent. worked 12 days or less,² and approximately 50 per cent. worked six weeks or less; only 9.5 per cent. approached to any degree the maximum possible of 131 days.

A further analysis revealed that only 16 per cent. worked during every two-week period with the same gang. About

1 - All information quoted here was taken from the payrolls.

2 - Days converted from hours on the basis of a ten-hour day.

FIGURE 8.



one-third of these men did not work full time in every period, but this can be considered as the percentage of men who worked regularly. Those who worked consecutive periods but not the whole season formed 59 per cent. of the total. However, this category includes those who worked only one period. If they were not included the percentage would be considerably reduced. But the most significant fact revealed was that the record of service of 25 per cent. of all the men was broken, either by reason of the fact that they did not work consecutive periods, or because they worked for more than one gang. Over 20 per cent. of this group had done both, that is, they had worked only in intermittent periods, and, also, they had moved around from one gang to another.

Thus the extra gang labourers do not work consistently for the railways even when work is available, and therefore they are not attached to the railway industry any more than to any other industry in which they may happen to find work. They definitely belong to the ranks of casual labour. The condition described above is only the contribution of one industry to a general problem. These men are obviously not necessarily unemployed when they are not working for the railways, but they are more likely to be unemployed because of the wide seasonal fluctuations in the railway work which they perform.

The seasonal fluctuation in employment of the sectionmen is nearly as great as that of the extra gangs. However, the volume of unemployment that can be attributed to the railway industry is not so great, for the sectionmen taken on in the spring are retained throughout the summer. In the rural districts

a winter section force usually consists of a foreman and one or two sectionmen. One or two temporary sectionmen are added to this number for the summer months. In Montreal the section gangs are considerably larger. They vary in size and may comprise six or seven men, but the percentage increase in the summer is about the same as in the rural districts. The period of employment of these summer forces is generally considered to be from April to November, but it may vary from year to year depending on weather and traffic conditions.

Seasonal unemployment is least amongst the bridge and building employees. Particularly in Montreal this group would appear to vary only slightly in numbers from month to month.

Again we find that seasonal unemployment is greatest in the low-skilled group -- the extra gang labourers. These men are definitely unskilled, and there would seem to be a direct relation between this fact and the irregularity with which they work. Since any able-bodied man is capable of doing extra gang work, the railways can use haphazard methods in hiring. If this work required skilled men, greater care would be taken to obtain the right men.

Timing of seasonal fluctuations. The seasonal movement in employment in the maintenance of way and structures group is very regular from year to year. In any one year it corresponds almost exactly to the normal seasonal movement shown in Figure 7. The month of minimum employment is March. Employment increases sharply in April and May and reaches its peak in June. From that month, until the end of December, it decreases, the greatest decrease taking place during October and

November. There is an increase in January and February before the low is reached once more in March. Thus seasonal unemployment is greatest in November, December, and March, and least in May and June.

Causes. Track work is governed by two factors -- traffic and weather, and this is the reason for the large volume of seasonal unemployment. The weather conditions make it difficult to perform heavy repairs to the track during the winter. For a considerable part of the winter months the ballast is frozen solid, and the ties in it, so that there is little opportunity for reballasting or renewing of ties. If rails are placed along the track preparatory to laying, a heavy snowfall may necessitate the running of a plow along the track, plowing the rails as well as the snow. Thus, at best there is a considerable element of risk in attempting even rail-laying in the winter. Consequently only minor repairs are carried out at that time of the year. Then, it is considered desirable to perform at least all heavy repairs to the track before the heavy traffic months, so as to have the track in as good order as possible to carry this traffic. Since the frost is only out of the ground by April, and since the heavy traffic starts in July, the majority of repairs are carried out in April, May, and June. Practically all large scale repairs are carried out during these months, so that the staff is increased greatly at this time. Hence the great difference between the high and the low in employment, and the sharp increase and decrease before and after June. The decrease is not so sharp as the increase because the temporary sectionmen are employed for several

months after the extra gangs have been reduced.

The reason for the increase in employment in January and February is the heavy snowfall during those months. To keep the right of way clear of snow and ice, extra gangs are formed. The men employed in this work may or may not be the same as those employed in the extra gangs in the summer.

The casual character of extra gang labour is probably a result of the methods of employment and of the wages paid. The engaging of the men is left in the hands of the foremen. Previous to 1932 the general practice was for the foreman to go to a private employment agency and ask for the number of men he required. This practice had grown up so that the men who were in the habit of doing extra gang work, registered at the same agency each year and the foreman usually obtained much the same gang every year. Once the work had started, the only way a man could get a job on the gang was to apply to the foreman, and the men went the rounds in order to find work. Since the closing of the private employment agencies, this latter method has presumably been the procedure throughout. In the last year or two the foremen have probably had little difficulty in picking up a gang without going out to look for the men. When the men hear that there is work to be done they apply to the foreman. There is always the possibility of obtaining work even after work has actually started. The City of Montreal pays higher wages than do the railways for the same class of labour and the extra gang men are always looking for an opportunity to work for the City. If the opportunity arises, the men will leave the extra gangs, work for the City as long as they can, and then

perhaps seek work on the extra gangs once more. The result is a continual flux in and out of these gangs, and consequently much time is lost by the men.

Summary.

Seasonal unemployment, then is a serious problem in all three branches of the railway industry. Figure 7, which compares the normal seasonal variation in the three departments, shows that the fluctuations are least in transportation, and greatest in maintenance of way and structures. However, from the point of view of the number of employees affected in Montreal, the problem is most serious in maintenance of equipment.

The outline of the factors that cause these fluctuations shows the difficulties to be overcome in eliminating this unemployment. The main fact that seems to stand out is that the problem is most difficult in transportation and in maintenance of way and structures. Employment in transportation is directly governed by traffic, and therefore the fluctuations in the amount of work to be done can only be levelled if other industries can be persuaded to change the time of shipping. In maintenance of way and structures, although traffic is an indirect factor, weather conditions form an obstacle in the way of stabilization. But in maintenance of equipment there is only one factor governing the fluctuations -- traffic, and this exerts only an indirect influence. Consequently the possibilities of stabilization are greatest in connection with this group.

There is one significant fact in connection with the seasonal fluctuations in the railway industry that is illustrated by Figure 7. That is, that the timing is different in each of

the three main branches. This suggests at least the superficial possibility of dovetailing, although the existence of so many types of work places distinct limits on such a policy. The main facts in relation to this difference in the timing of the fluctuations are set out in Table 4.

TABLE 4,

TIMING OF SEASONAL FLUCTUATIONS:

THREE MAIN GROUPS COMPARED

Average 1924 - 1929.

	<u>Railway Operation</u>	<u>Mainten- ance of Equipment</u>	<u>Mainten- ance of Way and Structures</u>
Percentage drop in employ- ment, maximum to minimum	7.4	16.0	44.2
Month of maximum	July	March	June
Month of minimum	March	October	March
Month of greatest increase	May	January	April
Month of greatest decrease	December	July	November

CHAPTER V.

CYCLICAL UNEMPLOYMENT.

In the measurement and analysis of cyclical unemployment in the railway industry, it is only possible to deal with that resulting from one depression -- the present one, the lack of statistics for the Province of Quebec for any other depression being the limiting factor. Moreover, the study must also be largely restricted to the volume of unemployment in 1931, even though there was a greater volume in 1932. The reason for this is that in January 1932 the C.P.R. changed the method of compiling the employment figures. Prior to that date, they had recorded the number of employees on the payroll for the last two weeks of each month, while the statistics since then show the number of employees actually at work on the last day of each month.¹ This change resulted in a large, and otherwise inexplicable, drop in employment between December 1931 and January 1932. Consequently no reliance could be placed on calculations from these figures of the volume of unemployment in 1932. However, the increase between 1931 and 1932 can be estimated from the trade union figures.

1 - See Appendix A.

Volume of Cyclical Unemployment.

The calculation of the volume of cyclical unemployment might be made by comparing employment or unemployment on two specific dates. But with this method it is difficult to eliminate the unemployment resulting from seasonal fluctuations. An attempt to eliminate seasonal unemployment might be made by comparing one month in 1929 with the same month in 1932. But if this method were used here, a calculation for every month would show a different result in each case, and in no case would it be representative. No month could be chosen, the calculation for which could definitely be said to exclude seasonal unemployment.

Another method is that of comparing the averages for two years, in this case 1929 and 1931. This method also has its faults. In connection with the employment statistics, the drop in employment from the average of 1929 to the average of 1931 does not represent the total drop in employment to the end of the latter year due to the business cycle. There was a downward trend of employment throughout 1931, so that such a calculation would not show the total volume of cyclical unemployment in 1931. However, this method has an advantage in that it does eliminate seasonal unemployment. Moreover, although there is obviously an error, we know definitely on which side the error occurs. This could not be said for the first method. For these reasons annual averages are used here. If the method could be applied throughout to 1932, the probable error would be distinctly reduced.

The total decrease in the railway employment figures

for the Province of Quebec, between 1929 and 1931, was 5,939 or 14.7 per cent. But the percentage reduction in the number of employees engaged in transportation and maintenance was greater than this. Since the Quebec figures include the general office workers, it is necessary to turn to the figures for the whole of Canada¹ in order to eliminate these workers from the calculation. These figures show a percentage reduction of 19.7 per cent. Although this percentage is not necessarily representative of the Province of Quebec or of Montreal, it is an indication of the effect of the inclusion of the office workers in the Quebec figures.

No great reliance can be placed on the trade union figures in the calculation of cyclical unemployment, for many of the unemployed members drop out of the unions during a depression. But since it is not possible to use the employment figures for 1932, the trade union percentages can be used as an index to the increase in cyclical unemployment between 1931 and 1932.

The average percentage of unemployment in the railway unions in Montreal in 1929 was 7.4 per cent. In 1931 it was 15.1 per cent., more than twice as great, and in 1932 it was 23.6 per cent. Thus between 1929 and 1931 the percentage increased by 7.7 per cent., and between the latter year and 1932 it increased by 8.1 per cent., the total percentage increase being 16.2. The percentage of unemployment attributable to cyclical factors, then, doubled between 1931 and 1932.

The question arises as to how the volume of unemployment in the railway industry compares with that in other industries. A superficial comparison can be made by using the

¹ - Statistics of Steam Railways of Canada, annual report.

Dominion Bureau of Statistics employment index. As stated above, the decrease in the employment figures for Quebec between 1929 and 1931 was 14.7 per cent. The decrease in the employment index for all industries in Quebec was 11 per cent.¹ For Canada as a whole, the decrease in railway employment was 19.7 per cent., while the employment index for all industries fell 14 per cent.¹ Therefore, cyclical unemployment in the railway industry seems to be above the average.

Incidence as between Groups.

Three main groups. The employment figures for the Province of Quebec show that the percentage reduction in the number employed has been greatest in the maintenance of way and structures group, the reduction between 1929 and 1931 being 23.4 per cent., as compared with 16.7 per cent. in maintenance of equipment and 10.3 per cent. in railway operation. But the trade union unemployment figures for Montreal show exactly the opposite, that is, that the increase in the average percentage of unemployment between those two years was least in this group. The reason for this is that the trade union figures for maintenance of way and structures include little more than the signal maintainers and the permanent sectionmen. These men have evidently not been affected to the same extent as the others.

The employment figures for railway operation show a decrease of 10.3 per cent. But allowance must be made for the fact that these figures include the office workers. The effect of this is illustrated by the statistics for transportation in all Canada, which decreased 19.4 per cent., nearly double the

1 - Canada Year Book, 1932, p. 653, Table 17.

percentage for railway operation for Quebec.

It is difficult to say whether the percentage reduction in Quebec was greater in transportation or in maintenance of equipment. The figure for the latter group -- 16.7 per cent -- is greater than that for railway operation, but less than that for transportation in all Canada. If it were assumed that the incidence of unemployment has been the same in Quebec as in the whole of Canada, the question would be settled, for the Canadian figures show a greater reduction in transportation. However, the reduction in maintenance of equipment was greater in Quebec than in Canada, so that the assumption is not correct. It is probable that the decreases were much the same in both groups. The trade union statistics substantiate this conclusion. The increase in the percentage of trade union unemployment was 7.3 per cent. in transportation and 7.4 per cent in maintenance of equipment.

However, these figures only take into account the reductions in the number of men employed. From the point of view of time lost, the maintenance of equipment employees have undoubtedly been affected more than those in transportation. Although the fact that the Angus Shops were closed during the whole of October 1931 is at least partially reflected in these figures, the time lost during the other months is not. In 1931 the Point St. Charles Shops were closed every Saturday, and from two to five week days every month in addition. The Angus Shops only approximated a five-day week in three months of that year, and in November they were only open ten days. Thus the inclusion of part time in the calculation of the volume of

unemployment would reveal that the maintenance of equipment employees have been affected more than those in transportation.

The change in the method of compilation of the employment statistics on the part of the C.P.R. does not affect the statistics of the maintenance of equipment group to the same extent as it does those of the others. The number of men working in the back shops on the last day of the month is practically the same as the number of men working in the last two weeks of the month. Consequently, in spite of the change in the method of compilation, the statistics for 1932 for this group are on the same basis as those for previous years. It is possible, then, to estimate the volume of unemployment in 1932. The calculation of a figure for 1932 for this group is particularly desirable, for the C.N.R. did not begin to make large reductions in its staff in the mechanical department until the latter half of 1931. Therefore, the 1931 figures are not as representative for this group as they are for the others. The reduction in the average number of employees between 1929 and 1931, as we have seen, was 16.7 per cent., but the reduction between 1929 and 1932 was 33 per cent. Thus the volume of cyclical unemployment in this group doubled between 1931 and 1932. Moreover, shop hours were also reduced between those two years.

In order to determine the incidence of cyclical unemployment as between the sub-groups of those already discussed, the annual averages for Canada as a whole can be used. These figures are given in detail,¹ and the classifications can be grouped in almost any way desired. For the purpose of

1 - Statistics of Steam Railways of Canada.

clarity the sub-groups are discussed under the main headings. Table 5 compares cyclical unemployment in the three main groups.

TABLE 5.

REDUCTION IN THE AVERAGE NUMBER OF RAILWAY EMPLOYEES IN THE
PROVINCE OF QUEBEC BETWEEN 1929 AND 1931.

<u>Group</u>	<u>Number of employees</u>	<u>Percentage of 1929</u>
Maintenance of Way and Structures	1597	23.4
Maintenance of equipment	2351	16.7
Railway operations	<u>1991</u>	<u>10.3</u>
Total	5939	14.7

Sub-groups in Transportation.¹ The greatest percentage reduction in staff in transportation appears to have taken place in the road and yard service groups. The reduction in yard service between 1929 and 1931 was 23.7 per cent., and that in road service 22.2 per cent. If the latter be split between passenger and freight, we find that those in freight service were most affected. The reduction in that group was over 25 per cent., while the decrease in the number of employees in passenger service was only slightly over 17 per cent.

The station and freight group shows a reduction of 15.2 per cent., but this includes agents and operators. The reduction in freight handlers alone was about the same as that in the freight road service employees. The switch and signal

1 - For the composition of these and other sub-groups see Appendix E.

group was least affected, the decrease in the number of employees in this group being about eight per cent.

Sub-groups in maintenance of equipment. It is difficult to group the classifications in maintenance of equipment in any way that would have any meaning. The difference in incidence between the running repair and back shop groups cannot be shown. The only division that can be made is that between the carmen and the other craftsmen. In this way it is possible to obtain a general idea as to the relative volume of unemployment amongst the workers in the car and locomotive shops. The statistics of these two groups appear to show that reductions in staff have been greatest in the car shops. The decrease between 1929 and 1931 in the average number of carmen employed was 14.5 per cent., while the decrease in the number of men employed in the other crafts was 8.6 per cent.

Sub-groups in maintenance of way and structures. The greatest percentage reduction in maintenance of way and structures took place in the telegraph and telephone maintenance group, the reduction in that group being 47.8 per cent. But since the group is small, the number of men laid off was not very great. This percentage only represents slightly over 200 men. These figures are for the whole of Canada, so that the number of men affected in Montreal or the Province of Quebec would be negligible. In the B. and B. department the reduction was 31.4 per cent. However, the track group makes up the great majority of the maintenance of way and structures employees, and the decrease in the average number of employees in this group was 25 per cent. This figure corresponds closely to the figure

given for all maintenance of way employees in Quebec. The decrease in employment was least in switch and signal maintenance -- only 4.4. per cent.

The incidence of unemployment as between all the sub-groups is summarized in Table 6.

TABLE 6.

INCIDENCE OF CYCLICAL UNEMPLOYMENT AS BETWEEN SUB-GROUPS

Percentage drop in employment, 1929 - 1931

(Calculated from figures for Canada.)

<u>Transportation</u>	<u>Maintenance of Way and Structures</u>	<u>Maintenance of Equipment</u>
Yard 23.7	Tel. & tel. main.. . 47.8	Carmen . . . 14.5
Road service . . 22.2	Bridge & building . 31.4	Other crafts 8.6
Station & frt. . 15.2	Track 25.1	
Switch & signal . 8.2	Switch & signal maintenance . . . 4.4.	

Skill in relation to incidence. Due to the way in which the statistics are made up, it is only possible to divide the workers into two groups in showing the relation between the degree of skill and the incidence of cyclical unemployment. These two groups can be termed "skilled" and "low-skilled", but the crafts included in them are not the same as those set out under these headings in Table 1. All the crafts termed "intermediate" in that table are included in the skilled group here, for it is impossible to segregate them in the statistics used. Moreover,

some low-skilled employees may have been included in the figures termed "skilled" here, but care has been taken not to include in the low-skilled group any classification that might include skilled workers.¹ The calculation is based on the same figures used in connection with the sub-groups above.

This calculation leaves no doubt but that the low-skilled employees in the railway industry have been much more seriously affected by the present depression than have the skilled men. The reduction between 1929 and 1931 in the average number of employees in the skilled group was 14.6 per cent., whereas the reduction in the low-skilled group was 35.4 per cent. But this calculation only refers to the first two years of the depression. The only conclusion that can be drawn is that in the early part of the depression the low-skilled group was most affected. The total effect of the depression cannot be shown, as there are no figures available for any period later than 1931. The 1932 figures might show that between 1931 and that year the reduction was greater in the skilled group, thus making the total reduction from 1929 to 1932 in this group more nearly equal to that in the low-skilled group. The low-skilled employees were evidently the first to go in large numbers, but it is impossible to determine whether the total volume of cyclical unemployment was also greater than in the skilled group.

Relation between Traffic and Cyclical Unemployment.

Between 1929 and 1931 passenger miles decreased nearly 40 per cent. in Canada, and total ton miles fell off

1 - For the classifications included in the figures for low-skilled employees see Appendix E.

by about 30 per cent.¹ But this decrease in traffic was only partly a direct factor in determining the volume of railway employment. It was a direct factor in that it reduced the amount of work to be done in transportation and maintenance. But it was not the reduction in the amount of work to be done that determined the total volume of unemployment. It was the decrease in revenue. If the decrease in traffic had been the direct and only determining factor, unemployment would have been greatest in the transportation group, for the amount of work available for these workers varies more in proportion to traffic than does that of the others. But the percentage reductions in the number of employees were greatest in the maintenance departments. The maintenance of way and structures employees were the ones most affected, and the amount of work to be done by this group has less relation to traffic than that of any other. The weather is a more important cause of deterioration of the track than is traffic. The distinction between revenue and traffic, then, is important, for it explains the incidence of unemployment. Because of the decrease in revenue, work was postponed and employees laid off wherever it was possible to do so.

But what about the reverse movement? What can be expected in the way of increased employment if traffic starts to increase? In the transportation group an increase in the number of employees would result, but this increase would probably not occur immediately. At the present time passenger trains are

1 - Statistics of Steam Railways of Canada, 1931, p. 22.

running with fewer cars and fewer passengers per car than in 1929, and freight trains are carrying less tonnage.¹ Therefore more traffic could be handled with about the same number of employees. However the time-lag between an increase in traffic and an increase in the number of employees would probably not be very great in this group. In maintenance of way and structures the result of an increase in traffic would probably be an immediate increase in the number of employees, for the work in this department has been reduced more than that in any other. But it might be some time before even a sustained increase in traffic could have very much effect on the number of employees. in maintenance of equipment. In spite of the reduction that has been made in the number of employees engaged in this work, both railways have a surplus of good order equipment at the present time, which might be sufficient to take care of a moderate increase in traffic for at least many months. The C.N.R. did not reduce the number of employees engaged in the back shops to any large extent until the latter half of 1931, and consequently equipment was being repaired that was not needed. Since the C.N.R. shops are working only 16 days a month, the immediate result of an increase in traffic would only be an increase in shop hours. It would be some time before the number of employees was increased to any great extent. The C.P.R. is probably not in the same position as the C.N.R., but it would seem it also has a surplus of good order equipment that might take care of an increase in traffic. But the surplus of equipment that the C.P.R. has, is probably the result of another factor, that of the pooling arrangements made between the two

1 - Ibid.

railways, so that the unemployment which might result from the failure of the C.P.R. to increase employment at the time of an increase in traffic, would be more technological than cyclical.

CHAPTER VI.

INDICATION OF THE PROBLEM OF TECHNOLOGICAL UNEMPLOYMENT

Technological unemployment is a study in and of itself, but no study of unemployment in the railway industry would be complete without a reference to this subject. No attempt is made here to measure the volume of this type of unemployment. The intention is merely to enumerate the factors that have been operating to create it, with the hope that at some future date this subject will receive careful attention that it deserves.

Three factors have been operating to create technological unemployment in the railway industry. The first is that of the introduction of labour-saving devices which has been proceeding at an increasing pace for the last thirty years. The second is the amalgamation and reorganization that has been taking place in Canada, principally in the last fifteen years. The third factor is the much-advertised growth of motor transport.

Labour-Saving Devices.

Great strides have been made in mechanization in the railway industry in the last thirty years. Stimulated by the rising prices after 1896, and faced by the increasing cost of labour and materials, the railway companies turned their

attention to the introduction of new machines and new methods that would economize in labour and materials. No branch of the railway industry was left untouched by this process.

No specific instances need be mentioned in connection with maintenance of equipment work, for in that line the railways have merely kept abreast of the times. They have followed the general trends in industry as a whole, and have either adopted or adapted the majority of the inventions that have been introduced into all industries. For instance, the railways have electrified the processes in the shops. It is the technical improvements made in connection with the operations that are peculiar to the railways that should be noted.

Some of the most notable achievements have been made in connection with transportation. In the first place, the size and tractive power of the locomotives have been greatly increased, thus reducing the number of trains, and consequently the number of employees, required to move a given volume of traffic. Between 1911 and 1929, the average power of steam locomotives in service on the Class 1 roads in the United States increased by 58 per cent.¹ As a result, although the tons of revenue freight carried one mile increased by 79 per cent,² the number of locomotives in service decreased one per cent. Even taking into consideration the fact that the number of revenue passengers carried one mile decreased four per cent,³ a fewer number of locomotives moved well over one and a half

1 - A Yearbook of Railroad Information, 1932, p. 5.

2 - Ibid, p. 25.

3 - Ibid, p. 27.

times the traffic. Along with this improvement in locomotives has gone the improvement in cars. The average capacity of freight cars in service increased by 25 per cent. in the same years.¹

However, labour-saving in transportation has not been confined to improvements in rolling stock. Revolutionary changes have been made in the methods of performing yard work. A terminal yard that once employed about a thousand men, might now employ hardly more than a handful. One of the first steps taken was the introduction of the "hump yard". This innovation meant that instead of the cars being sorted by shunting each one onto the correct track, the sorting was done by letting the cars run down an incline and throwing the switch to let them run onto the correct track. Thus one engine could do the work of many. The yard was placed on an incline or hump. A man riding on each car operated the brakes, and slowed it up as it reached its proper place, while other men were required to throw the switches. With the introduction of automatic braking, weighing, and automatic switches, even fewer men were required. To-day all this work can be done by a handful of men. There is the engine crew to push the cars over the hump, one man to attend to the automatic weighing machine, one man to operate the switches from a central box, and a few other men. No men are required to ride on the cars, for the cars are automatically braked as they pass over the switch.

Another striking innovation in transportation is that

1 - Ibid, p. 27.

of automatic signaling. This meant that instead of the complex system of train orders, the direction of train movements could all be done automatically, in much the same way that traffic lights direct automobile traffic. This greatly reduced the number of telegraph operators required, and it also reduced the number of employees in other classes of work that would have been required to move the increased volume of traffic. Mainly through this innovation the capacity of the average line in each direction was increased from about 4000 tons of freight plus passenger traffic, to about 20,000 tons of freight plus passenger traffic.

Many technical improvements have also been made in maintenance of way. One of the principal innovations was the use of the creosoted tie. As a result, tie renewals have been reduced by about one-half. When we compare this with the increase in the size of the locomotives running over those ties, we obtain some idea of the effect that this innovation has had. In addition to this, the weight of the rails has been increased considerably. These improvements in materials have reduced the amount of maintenance work to be done each year. The introduction of new machinery has also reduced the number of men required to do a given amount of work. Although the large machines are not used so extensively in Canada as in the United States, machines are now in use on the Continent that lay rails, wash ballast, and tamp automatically.

These are a few of the innovations that have reduced the amount of labour required to do a given amount of work. There are many others, but these can serve as an illustration

of the degree to which the railway industry has been revolutionized.

Amalgamation and Reorganization.

The process of reorganization of the Canadian railways started in earnest during the war, and has been going on ever since. During the war certain duplicating lines were torn up. Between 1918 and 1922 the negotiations prior to the taking over of the Grand Trunk Railway by the Government were under way, and a certain amount of reorganization was carried out at the same time. In 1922, when the Government definitely took over the Grand Trunk, the process of welding the Grand Trunk, the Grand Trunk Pacific, the Canadian Northern, and the Government railways into one system commenced. It is obvious that this amalgamation must have had considerable effect on employment.

In 1922 it was amalgamation, in 1932 it is "co-operation". The institution of a joint service by the C.P.R. and the C.N.R. between Montreal and Toronto, and between Ottawa and Toronto, has caused unemployment already. This may only be an economy measure dictated by the depression. If so, the unemployment thus caused can be charged to cyclical factors. But if it is only the beginning of a much more comprehensive policy of co-operation, then a further cause of technological unemployment is in the process of taking effect.

Motor Transport.

The development of the motor vehicle as a competitor with the railways is the third factor which is making for

technological unemployment in the railway industry. This factor is in a different class from the other two, for it is a development from outside the industry and not from within, but its effects are the same. If the motor vehicles take certain classes of traffic away from the railways, then they are making for technological unemployment. Mr. L. F. Loree of the Delaware and Hudson might be quoted in connection with this taking over of traffic by the motor vehicles. He says:

"The short haul passenger bussiness, I think, has been permanently lost to the passenger automobile. The short haul freight business, particularly for package freight, perishable goods, and perhaps livestock, will continue to be increasingly absorbed by the automobile truck."¹

1 - Railway Age, December 1932, p. 223.

CHAPTER VII.

STABILIZATION OF EMPLOYMENT.

A. Stabilization Already Attempted.

There has been only one conspicuous attempt made to stabilize employment in the railway industry in Canada -- that made in connection with the Co-operative Plan adopted by the C.N.R. This plan is, in reality, a system of personnel management, the stabilization being only one part of it. The main interest in it here is not as a system of personnel management, but as an attempt to stabilize employment. It is the results of the plan in this connection that are to be examined, but a few remarks as to the underlying principles of the whole plan, and an outline of the machinery set up to operate the plan, are necessary.

The Co-operative Plan was originally sponsored by the Railway Employees' Department of the American Federation of Labour, and was termed by that body "union-management co-operation". The essence of it is co-operation between the employees and the management to the advantage of both. The intention is that the two parties should come together, each doing its share to promote the welfare of both. The employees' part is to increase the efficiency with which the work is done by making any

suggestions they can as to changes in the method of performing the work that will save time and money. The part of the management is to see that the employees share in the benefits accruing from these improvements through greater stability of employment.

This policy sponsored by the railway unions was first tried out in one of the shops of the Baltimore and Ohio Railroad. In 1924 the union officials approached the C.N.R. with a view to having a similar plan established by that railway. Negotiations were finally concluded and the plan was introduced into the main shops in the following year. A local committee for each shop, a committee for each of the four regions, and one committee for the whole system, were set up to operate the plan. These committees are made up of the representatives of the employees and of the management -- an equal number of each. They deal with the suggestions presented by the management and the employees in connection with increased efficiency or better working conditions. The plan was later established in the maintenance of way and structures department, and much the same machinery was set up there.

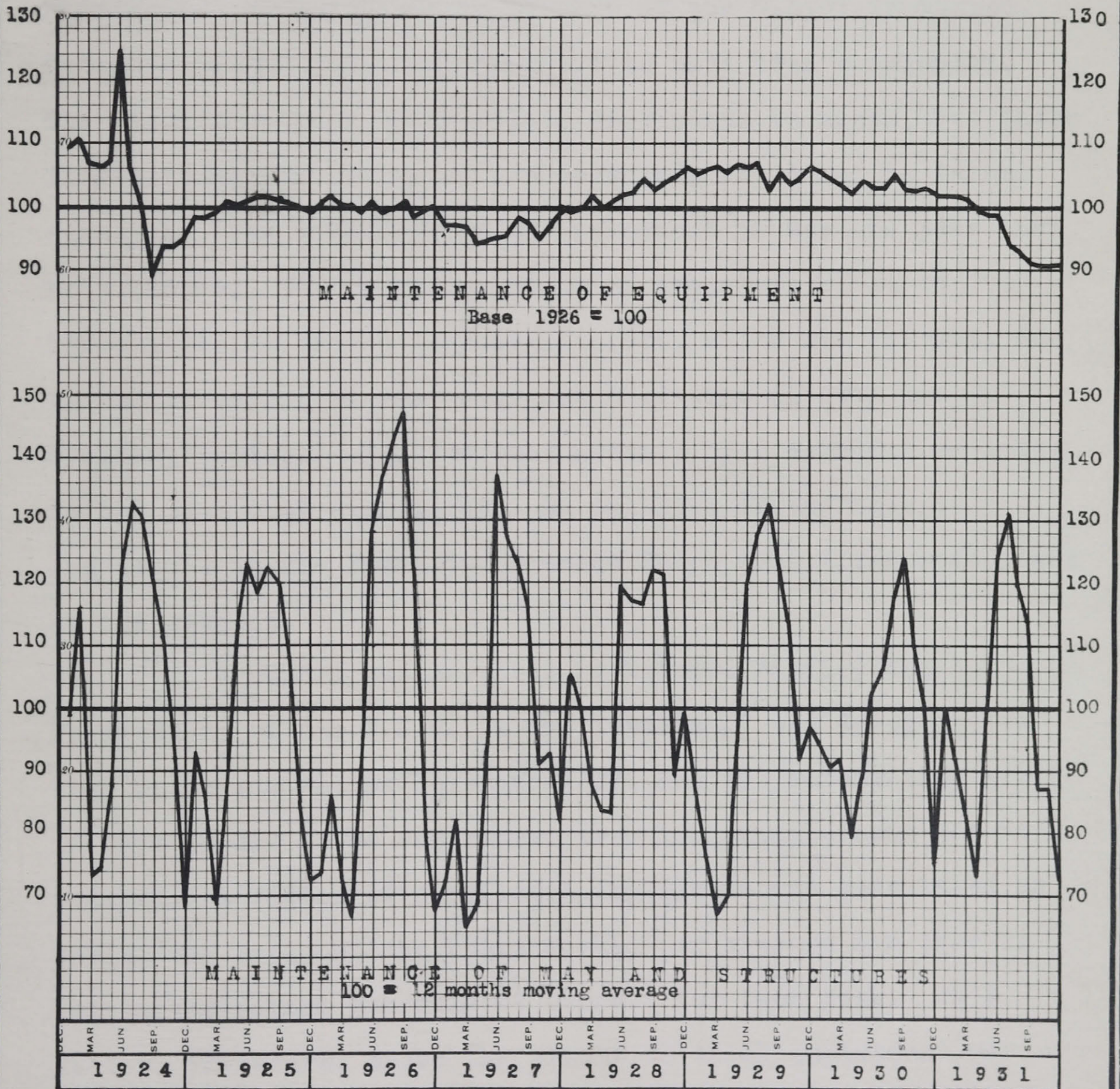
When the Go-operative Plan was introduced the company undertook to do all in its power to stabilize employment. Thus the attempt to stabilize employment in the C.N.R. was part of the plan, and must inevitably be connected with co-operation. However, stabilization of employment is a policy that must be carried out by the management, and therefore co-operation between management and the employees is not essential to its success. For this reason it is not necessary to go into the

FIGURE 9.

FLUCTUATIONS IN EMPLOYMENT

Maintenance Departments - Canadian National Railways
In the Province of Quebec

(As at the last day of the month)



details of the Co-operative Plan, but we can continue to a consideration of the degree of success that has been achieved in stabilizing employment in each of the two maintenance departments of the C.N.R.

Maintenance of equipment. Figure 9 illustrates the extent to which employment has been stabilized in the maintenance of equipment department of the C.N.R. in Quebec. Seasonal unemployment would appear to have been eliminated. The statistics show fluctuations from month to month, but these fluctuations are not great and certainly could not be termed seasonal. The fluctuations in employment in any one year have been reduced, if not to the minimum, then very close to it. The statistics show a decrease in 1927, which was probably due to the recession of that year and a decline in 1931 due to cyclical factors. However, the absence of a seasonal movement is the fact that stands out. An analysis of employment conditions in the Point St. Charles Shops will throw more light on the subject.

A report was prepared by Messrs. Battley and Fairweather of the C.N.R. on the results of the Co-operative Plan up to the end of November 1927, and the information given in this report shows the extent to which unemployment has been reduced. A factor of stabilized employment was calculated by taking the ratio of the hours worked per average man drawing pay to the normal schedule of hours,¹ for each year. This factor, therefore, shows the extent to which employment was stabilized, and its complement, the disturbed time factor,

1 - Based on a 44-hour week with six holidays.

shows the time lost. The stabilized factor, and the disturbed time factor divided between that attributable to the company and that attributable to the men, are given in Table 7.

TABLE 7.

ANALYSIS OF EMPLOYMENT - C.N.R. POINT ST. CHARLESSHOPS

1924 - 1927

	<u>Car Shop</u>				<u>Locomotive Shop</u>			
	<u>1924</u>	<u>1925</u>	<u>1926</u>	<u>11 mos. 1927</u>	<u>1924</u>	<u>1925</u>	<u>1926</u>	<u>11 mos. 1927</u>
Normal sched- ule of hours	2240	2240	2240	2052	2240	2240	2240	2052
Hours worked per average man drawing pay	1535	1710	1921	1672	1402	1568	1575	1639
Factor of stab- ilized employ- ment	68.5	76.4	85.8	81.5	62.6	70.1	70.3	79.9
Disturbance due to company	21.4	13.5	1.9	7.9	25.1	17.7	13.7	6.6
Disturbance due to men	10.1	10.1	12.3	10.6	12.3	12.2	16.0	13.5

It will be noted that the stabilized employment factor for the car shops increased from 68 in 1924 to 81 in 1927, and that for the locomotive shops increased from 62 to 79 between the same years. This was due to the efforts of the company as can be seen by the change in the disturbed time factors -- that representing the disturbance due to the company fell from 21.4

in 1924 to less than eight in 1927, while that due to the men changed only slightly.

The analysis of the disturbed time given in Table 8

TABLE 8.

DISTRIBUTION OF DISTURBED TIME -
POINT ST. CHARLES SHOPS, C.N.R.

1924 - 1927

(Hours.)

	<u>Car Shop</u>				<u>Locomotive Shop</u>			
	<u>1924</u>	<u>1925</u>	<u>1926</u>	<u>11 mos. 1927</u>	<u>1924</u>	<u>1925</u>	<u>1926</u>	<u>11 mos. 1927</u>
Disturbed time	705	530	319	380	838	672	665	413
<u>Due to company:</u>								
Shop closed	280	128	4	4	314	219	218	60
Labour turnover	199	175	39	159	249	179	89	76
Total	479	303	43	163	563	398	307	136
<u>Due to men:</u>								
Absenteeism	132	142	195	146	211	171	164	188
Lateness	1	1	2	1	-	-	-	-
Labour turnover	93	84	79	70	64	103	194	89
Total	226	227	276	217	275	174	358	277

reveals the way in which it was reduced. The hours lost due to the shop being closed were reduced considerably in both shops. In the car shop they fell from 280 in 1924 to four in 1927, and

in the locomotive shop they fell from 314 to 60. The number of hours lost due to labour turnover in the locomotive shops was reduced from 249 to 76, but in the locomotive shops the hours lost from this cause were only reduced from 199 to 159.

Thus distinct progress has been made in the elimination of seasonal unemployment. The locomotive shops were closed only five days, and the car shops only half a day, in 1927. In the aggregate of the two shops labour turnover was also considerably reduced. Up to this point the comparisons have all been made as between 1924 and 1927. In the case of the car shop, however, a distinctly better showing was made in 1926 than in 1927. The stabilized employment factor was 85.8 in 1926 as compared with 81.5 in 1927. Now, as regards general business conditions, the year 1926 was somewhat better than 1927, and, therefore, perhaps the comparison should have been made between 1924 and 1926. The drop in the stabilized employment factor in 1927 may have been due to the recession of that year. In that case it would not represent seasonal unemployment. However, 1927 was used in the comparison to show the total improvement that had been made up to that time, in spite of the fact that a relatively poorer showing was made in the car shop in that year as compared with 1926, for if any criticism could be made it would be in connection with that drop in the stabilized employment factor in the car shop.

The increase in disturbed time in the car shop in 1927 was entirely due to the company,¹ for the disturbed time due to the men decreased in that year. A closer examination shows that

1 - In this connection it might be noted that discharge for cause is attributed to the company.

it was also almost entirely caused by the increase in labour turnover. The percentage of time the shop was closed was slightly greater in 1927, for, although it was closed four hours in both 1926 and 1927, the figures for 1927 only include 11 months. But the percentage increase is negligible. The hours lost because of labour turnover due to the company, increased from 39 in 1926 to 159 in 1927. This increase in labour turnover might have been due either to transfers to other shops, or to the fact that more men were discharged and taken on. The analysis of the payroll changes given in Table 9 shows that it

TABLE 9.

PAYROLL CHANGES, CRAFTSMEN AND HELPERS -C.N.R. POINT ST. CHARLES SHOPS

1924 - 1927

	<u>Car Shop</u>				<u>Locomotive Shop</u>			
	<u>1924</u>	<u>1925</u>	<u>1926</u>	<u>11 mos. 1927</u>	<u>1924</u>	<u>1925</u>	<u>1926</u>	<u>11 mos. 1927</u>
Total no. of men drawing pay	1117	1057	1017	1077	1288	1170	1116	1172
Taken on payroll	105	282	62	138	82	173	85	84
Discharged	267	37	10	73	247	37	13	2
Pensioned or deceased	16	17	15	9	13	24	22	19
Left of own accord	55	45	32	30	25	24	24	16
Transferred to other payrolls	4	3	21	4	6	4	9	9

was caused by the latter. The number of men transferred decreased

from 21 in 1926 to 4 in 1927. On the other hand, discharges increased from 10 to 73, and the number of men taken on increased from 62 to 138. Thus it would appear that men were laid off and then taken on again during the course of the year.

It seems from this that the problem of unemployment arising out of recessions has not been met in connection with the car shop employees. However, this is only a minor consideration when the total increase in the stabilized employment factor is remembered. The interesting fact in this connection is that the stabilized employment factor for the locomotive shop increased from 70 in 1926 to nearly 80 in 1927. Whether this difference between the car and locomotive shops has any particular significance it is impossible to say.

The experience of the C.N.R., then, shows that the stabilization of employment in the back shops is possible. As for running repair work, although no definite information is available, it is not likely that the same degree of success has been achieved there.

Maintenance of way and structures. As can be seen from Figure 9 very little has been done in the way of stabilization of employment in maintenance of way and structures. The reason for this is the important part that weather conditions play in preventing the performance of track work in the winter. However, a certain amount of stabilization has been accomplished. In the bridge and building department, work has been rearranged so as to extend the working season. Such work as it is possible to perform economically in the winter is done at that time of the year. On some divisions the bridge and

building employees have been given work the year round, but this result has not been general.

Since there were great difficulties in the way of spreading the work evenly over the year, the emphasis in the maintenance of way and structures department has been laid on dovetailing. A system has been developed in an attempt to give the men the maximum of work possible. Each employee is given an identification card when he is furloughed from his regular position. Those desiring further work fill out an application, and these applications are filed in the local office and referred to when men are needed in any kind of work. The various departments of the railway will take on these furloughed employees if they are capable of doing the work. The identification cards are an aid to the men in obtaining work outside the company. Contractors doing work for the railway are requested to give preference to the men who have these cards. In addition, governments, cities, and municipalities are canvassed for jobs for the men.

This plan has met with a certain amount of success. In the Montreal Terminals in 1932, 287 men were provided with 9,921 man days of work with the railway in this way. This is an average of about 34 days per man. The majority of this work was in connection with industrial tracks and snow removal. No work was provided in Montreal by contractors or other employers outside the railway. However, the total figures for the system show that this was done at other points. Table 10 gives the number of men placed, and the number of man days provided for the three years in which this plan has been in operation.

TABLE 10.

WORK PROVIDED FURLOUGHED EMPLOYEES -
C.N.R. MAINTENANCE OF WAY AND STRUCTURES DEPARTMENT
 (System.)
 1930 - 1932

	<u>1930</u>		<u>1931</u>		<u>1932</u>	
	<u>No. of</u> <u>men</u>	<u>Man</u> <u>days</u>	<u>No. of</u> <u>men</u>	<u>Man</u> <u>days</u>	<u>No. of</u> <u>men</u>	<u>Man</u> <u>days</u>
Railway work	2149	80,301	1494	61,404	2834	85,335
Contract work	188	13,296	112	8,536	77	4,708
Total	2337	93,697	1606	69,940	2911	90,043

B. Possibilities of Further Stabilization.

When considering the possibilities of the stabilization of employment in one industry, only the stabilization of employment from month to month need be considered, for the stabilization of employment throughout the full course of the business cycle is beyond the power of one industry.

One cannot make any sweeping recommendation for the stabilization of employment in the railway industry. The organization of the industry is so complicated, and there are so many classes of work, that it would be difficult to apply one general plan to the whole industry. The problem should be tackled in connection with each group separately, but, of course,

with a picture of the whole industry in mind. However, there is one general consideration that has already been referred to. The very fact that there are so many branches to the industry enhances the possibilities of dovetailing between occupational groups, and the fact that the industry extends from coast to coast opens up the opportunity for dovetailing between geographical areas. Some of the obstacles to such a policy have already been considered. The obstacles set up by the division of labour, except in a few isolated cases, must be taken as defining the limits to which dovetailing could be practised. But the obstacles created by the trade union organization and regulations are of a different nature. These are artificial obstacles, which can be eliminated if there is a will to do so. The trade union regulations, for the most part, were made in an attempt to provide security for the men, and if this security is guaranteed in another way, it should not be very difficult to do away with these obstacles. If the trade unions could be brought to see that they would benefit by such action, the difficulty would be solved.

The part of the trade unions in a policy of stabilization of employment, does not end with these regulations. The strength of the railway unions necessitates that they be consulted in connection with any question of this nature. Whatever may be said of these unions, the fact remains that they are there; they are strong; and they cannot be ignored.

Although no attempt is made here to outline a detailed plan for the stabilization of employment, it is possible from the study that has been made to indicate the direction in which

stabilization might be achieved in connection with each of the three main groups of workers.

Transportation. The problem of stabilization in transportation is a difficult one. It would be impossible to spread the work evenly over the year, for the amount of work to be done at any one time is not determined by the railway industry but by other industries. It might be possible to level out the peaks in freight traffic to some extent. Could the rates for certain commodities be adjusted so as to encourage shipping during the slack periods of the year? The suggestion is merely thrown out for what it is worth. Only a detailed study of the traffic handled by the railways could reveal whether or not seasonal rates would have any effect. Even if this could be determined, it would obviously not be a simple matter to put them into effect. Any action of this nature would probably involve the Board of Railway Commissioners. However, this is only a suggestion which might bear looking into.

But even if this were possible, there would still remain considerable fluctuations in employment in transportation. Stabilization of employment in this group must be accomplished in some other way than by spreading the work. The amount of work to be done will continue to fluctuate from month to month, but this does not necessarily mean that the number of employees must fluctuate in the same way. The same number of men might be employed the year round to accomplish a different volume of work in each season. This would mean the elimination of overtime as it is now known, for, in return for a guaranteed monthly income, the men would be expected to work a longer than

standard day at certain times in the year, and a shorter than standard day at certain other times. Thus, although the amount of work done would fluctuate from month to month, the number of men would be about the same in every month. The Delaware and Hudson Railroad has instituted a plan of this nature in connection with the running trades, and its application to Canadian railways deserves earnest consideration.

Maintenance of equipment. The experience of the C.N.R. demonstrates that it is possible to stabilize employment in the back shops. The problem of seasonal unemployment amongst the men engaged in this work that remains, is in connection with the employees of the C.P.R. Whether employment will also be stabilized in the back shops of that railway will probably depend on the extent to which such a policy is economical for the passenger car shops. If employment is to be stabilized in connection with passenger car work there must be a surplus of passenger cars, that is, the railway must have more cars than are needed to carry the peak traffic in the summer. Some of the cars would have to be in the shops during the summer and thus the maximum use would not be obtained from them. But the question is more than simply one of the maximum utilization of passenger cars. It is also one of the maximum utilization of the shop equipment. Without stability of employment the latter is not used to the full. No matter what happens one class of equipment must be lying idle at least part of the summer. Whether it is more economical to have maximum use from the passengers or from the shops is a question, the answer to which cannot be given here. However, inasmuch as all railways in the

United States and Canada have a surplus of passenger equipment, it would appear that the balance is in favour of the stabilization of employment.

Maintenance of way and structures. The obstacles in the way of stabilization are probably greatest in maintenance of way and structures. The principle cause of the fluctuations in that work -- the weather -- is not man-made, and therefore the spreading of the work evenly over the year is an extremely difficult problem, the solution of which is a matter for the engineer. But, no matter what the possibilities of spreading the work, there is always the possibility of using the method of varying the length of the working day. The Delaware and Hudson has adopted what is termed "the elastic working day". The hours vary from eight to ten. No men are laid off until there is not sufficient work to provide eight hours a day for all employees, and no men are taken on until ten hours work a day on the part of all employees is not sufficient to accomplish what has to be done. This would seem to be the direction that stabilization must take in maintenance of way and structures.

The problem of seasonal unemployment in the railway industry, then, is of a different character in connection with each group, and therefore no standard methods can be applied. The problem is a difficult one, but if both the management and the men are willing to tackle it wholeheartedly, it can be solved.

APPENDIX A.

PROVINCE OF QUEBEC EMPLOYMENT STATISTICS

Source. The employment statistics for the Province of Quebec were furnished by the railway companies. They were taken from the reports that these companies make to the Dominion Bureau of Statistics each month, and they are therefore the same figures that are included in the D.B.S. employment index for the first of each month.

Composition. Statistics were secured only from the C.P.R. and the C.N.R. so that the figures used are merely totals for these two railways and do not include the lines of the other railways extending into Quebec. However, the number of employees working on these other lines in Quebec is negligible when compared with the total. The inclusion of them would not alter the fluctuations, nor would it even affect that actual number of employees in any one month to any great extent.

The area covered by the statistics has been given as the Province of Quebec, but in reality this is only the area to which the C.N.R. figures relate. That railway has compiled the number of employees actually working in each Province, making the division at the point nearest the border. But the C.P.R. statistics are for the Quebec District of that railway, and this District includes a portion of Ontario.

Method of compilation followed by the railway companies.

These statistics are intended to show the number employed on the last day of each month, for they are compiled for the purpose of

inclusion in the employment index for the first day of the following month. But they have not been made up by a count of the number employed on the last day of the month. The C.N.R. has no standard method of compiling these statistics, a different method may be used at each point. However, for the Montreal District the general practice seems to have been to take a count of the number of employees on the payroll for the last two weeks of each month. Whether the same method has been used for other areas included in the Province, it is impossible to say. As for the C.P.R., prior to 1932 the method used for all areas was to take a count of the number of men on the payroll for the last two weeks of each month. In January 1932, however, a change was made, and from that date the statistics show the number of employees actually working on the last day of the month. Another change was made on that date in that the sleeping, dining, and parlour car employees were divided between the various districts. Previously they had been recorded as a unit for all Canada, and consequently none of them were included in the statistics for the Quebec District.

One correction was made in the statistics for the C.P.R. It was found that the figures for the running trades prior to 1932 were obviously incorrect, for they showed the number of employees to be much lower in 1928 and 1929 than in 1931. In order to adjust this obvious error, the number of employees in each month was calculated from the wages paid in that month. Each railway, in addition to a report for the end of the month, makes a return to the Dominion Bureau of Statistics of the average number of employees for the year and

the wages and salaries paid. This average number of employees is calculated from a count of those employed on the fifteenth of each month. This annual figure for each year was divided into the total compensation paid in that year, thus obtaining the average annual compensation. This figure was then divided by 12 to obtain the average monthly compensation. This monthly figure was then divided into the total compensation paid in each month of the year to which the figure related. The figures obtained in this way were included in the statistics for railway operation. Thus the figures for the C.P.R. running trades, if they are accurate, are in reality the average number of men employed in each month.

TABLE A-1.

RAILWAY OPERATIONNumber of employees as at the last day of each month, 1924 - 1932.

<u>Month</u>	<u>1924</u>	<u>1925</u>	<u>1926</u>	<u>1927</u>	<u>1928</u>	<u>1929</u>	<u>1930</u>	<u>1931</u>	<u>1932</u>
January	18,275	17,554	17,739	18,232	19,228	18,512	17,958	18,173	14,886
February	18,354	17,514	17,880	18,500	19,249	18,387	18,316	18,056	14,419
March	17,787	17,068	18,079	18,558	19,073	18,421	17,935	17,970	14,626
April	18,044	17,119	18,138	18,735	18,558	18,895	18,553	17,934	14,901
May	18,620	18,007	19,053	18,821	19,162	19,915	19,289	17,630	14,809
June	19,064	18,623	19,399	19,756	19,784	20,280	19,469	17,809	14,764
July	18,829	18,616	19,582	19,254	20,623	20,785	19,446	17,728	14,558
August	18,516	18,784	19,010	19,094	20,155	20,553	19,522	17,711	14,600
September	18,596	18,716	19,486	19,472	20,092	19,444	19,107	17,275	14,578
October	18,522	18,334	19,544	19,116	20,090	19,752	18,155	16,391	14,250
November	17,799	18,077	19,335	19,294	19,764	19,165	18,493	16,560	14,072
December	17,581	17,993	18,705	18,931	18,636	18,841	18,179	15,805	13,446

TABLE A-2.

MAINTENANCE OF WAY AND STRUCTURESNumber of employees as at the last day of each month, 1924 - 1932.

<u>Month</u>	<u>1924</u>	<u>1925</u>	<u>1926</u>	<u>1927</u>	<u>1928</u>	<u>1929</u>	<u>1930</u>	<u>1931</u>	<u>1932</u>
January	6,288	5,479	4,100	4,497	6,493	5,444	6,127	6,185	3,478
February	7,017	4,661	5,099	5,370	6,032	5,553	5,245	6,189	3,700
March	4,247	4,005	4,600	4,480	5,554	4,659	5,149	4,686	3,770
April	5,615	6,259	4,914	6,705	6,900	6,942	6,530	4,435	3,635
May	6,952	7,113	8,180	7,749	7,778	8,054	7,372	5,700	3,987
June	8,419	6,673	9,240	8,279	8,533	8,710	7,393	6,019	4,243
July	7,692	6,662	9,069	7,264	7,953	8,335	6,504	6,037	4,362
August	7,017	6,449	8,711	7,430	8,021	8,275	6,401	5,665	4,352
September	6,481	6,449	8,720	7,213	7,663	7,224	6,111	5,065	4,173
October	5,859	5,306	6,653	6,241	7,624	6,832	6,136	4,507	3,799
November	4,581	4,294	4,681	5,729	6,305	5,369	5,393	4,068	3,558
December	3,570	3,817	4,047	5,290	5,788	6,361	5,105	4,030	3,311

TABLE A-3.

MAINTENANCE OF EQUIPMENTNumber of employees as at the last day of each month, 1924 - 1932.

<u>Month</u>	<u>1924</u>	<u>1925</u>	<u>1926</u>	<u>1927</u>	<u>1928</u>	<u>1929</u>	<u>1930</u>	<u>1931</u>	<u>1932</u>
January	15,019	13,648	13,344	12,920	13,233	14,775	14,130	13,877	11,142
February	15,182	13,878	14,460	13,368	13,649	15,606	14,023	14,180	11,727
March	15,577	14,049	14,647	13,640	15,067	15,788	14,001	14,193	11,489
April	15,347	14,194	15,017	13,776	14,800	15,642	13,941	13,438	9,997
May	15,333	13,827	14,915	13,708	14,782	15,023	14,117	12,741	9,765
June	15,398	13,092	14,758	13,417	14,684	13,902	13,945	12,605	9,129
July	13,077	12,749	14,288	13,035	14,051	13,530	13,559	12,078	9,008
August	12,613	12,436	13,600	13,102	14,069	12,931	13,603	11,751	8,853
September	11,899	12,347	12,053	13,023	13,502	13,001	13,344	6,934	8,828
October	12,031	12,362	12,167	12,692	13,321	12,725	12,918	6,894	5,473
November	11,668	12,857	12,890	12,877	13,723	12,750	12,935	11,178	8,725
December	11,866	13,076	12,785	12,748	14,720	13,605	13,440	11,207	9,117

APPENDIX B.

MONTREAL TRADE UNION STATISTICS

Source. The statistics of the number of members and the number of members unemployed for each of the Montreal locals of the railway unions in Montreal, were obtained from the Employment Service of Canada. These figures are those contained in the reports made by the locals to the Employment Service as for the last day of each month.

Composition. The grouping of these locals in order to arrive at the figures given in Tables B-1, B-2, and B-3, was as follows:

Transportation:

All Montreal locals of - Order of Railway Conductors;

Brotherhood of Railroad Trainmen;

Brotherhood of Locomotive Engineers;

Brotherhood of Locomotive Firemen and
Enginemen;

Canadian Association of Railway
Enginemen, etc.;

Order of Sleeping Car Conductors.

Certain locals of - Canadian Brotherhood of Railway Employees;

Brotherhood of Railway and Steamship Clerks, etc.

The statistics of the Order of Railroad Telegraphers were not included, as that union has no local lodges but only divisions that extend over a considerable area.

Maintenance of equipment:

All Montreal locals of unions comprising Division No. 4, as shown in Figure 2, and certain locals of the Canadian Brotherhood of Railway and Steamship Clerks, etc., and of the C.B.R.E.

Maintenance of Way and Structures:

All Montreal locals of - Brotherhood of Maintenance of Way
Employees;

Brotherhood of Railroad Signalmen of
America.

TABLE B-1.

TRANSPORTATION:MEMBERSHIP AND NUMBER UNEMPLOYED IN THE MONTREAL LOCALS OF THE TRADE UNIONS

1923 - 1932.

	<u>1923</u>		<u>1924</u>		<u>1925</u>		<u>1926</u>		<u>1927</u>		<u>1928</u>		<u>1929</u>		<u>1930</u>		<u>1931</u>		<u>1932</u>		
J.	1470	8	3107	48	2757	51	3206	63	2795	29	3387	45	3370	280	3080	419	3498	378	3413	581	J.
F.	861	6	2910	36	3033	42	2909	43	3035	38	3134	50	3617	254	3231	459	3500	341	3069	528	F.
M.	1067	3	2823	47	2475	49	2433	100	2991	53	3687	51	3441	269	3344	438	3316	430	2767	530	M.
A.	885	8	2817	54	2851	66	3647	54	3413	107	3677	96	3230	193	3377	319	3064	280	3048	303	A.
M.	915	6	2781	34	2804	35	3447	75	3392	44	3135	33	3567	46	3635	341	3363	374	3164	363	M.
J.	1131	6	2687	65	3131	45	3492	26	3007	97	3326	32	3545	23	3525	189	3245	300	3391	406	J.
J.	1163	9	2681	63	3114	59	3386	13	4175	47	3376	20	3104	42	3268	177	3316	332	3230	449	J.
A.	926	7	2778	33	2726	39	3499	27	3084	57	3424	19	3631	97	3357	199	2848	350	2779	474	A.
S.	1927	17	2762	34	2812	43	3185	16	3497	35	3458	35	3800	68	3370	201	3262	412	2941	427	S.
O.	1206	15	2753	40	3564	43	2933	10	3511	18	3634	16	3422	89	3416	280	3425	481	3076	400	O.
N.	1449	32	2638	63	3255	56	2594	9	3394	10	3590	21	3488	109	3253	402	3252	383	2820	451	N.
D.	1030	3	2789	69	3490	58	3130	31	3094	11	3655	88	3326	330	3334	447	2954	497	2654	463	D.
Mem. Un. Mem. Un. Mem. Un. Mem. Un. Mem. Un. Mem. Un. Mem. Un. Mem. Un. Mem. Un. Mem. Un. Mem. Un. Mem. Un.																					

TABLE B-2.

MAINTENANCE OF WAY AND STRUCTURES:MEMBERSHIP AND NUMBER UNEMPLOYED IN THE MONTREAL LOCALS OF THE TRADE UNIONS

1923 - 1932.

<u>1923</u>		<u>1924</u>		<u>1925</u>		<u>1926</u>		<u>1927</u>		<u>1928</u>		<u>1929</u>		<u>1930</u>		<u>1931</u>		<u>1932</u>			124.
<u>Mem.</u>	<u>Un.</u>	<u>Mem.</u>	<u>Un.</u>	<u>Mem.</u>	<u>Un.</u>	<u>Mem.</u>	<u>Un.</u>	<u>Mem.</u>	<u>Un.</u>	<u>Mem.</u>	<u>Un.</u>	<u>Mem.</u>	<u>Un.</u>	<u>Mem.</u>	<u>Un.</u>	<u>Mem.</u>	<u>Un.</u>	<u>Mem.</u>	<u>Un.</u>		
140	20	190	15	260	40	289	20	315	0	310	0	360	0	355	73	451	43	556	100	J.	
170	0	220	10	220	40	325	30	315	40	305	0	365	75	355	102	484	43	555	100	F.	
180,	8	220	10	294	61	289	20	295	30	315	0	365	25	355	50	474	45	505	50	M.	
220	1	220	10	279	20	309	20	295	30	320	50	360	0	340	0	445	25	493	50	A.	
220	4	220	10	309	10	310	20	315	40	330	0	355	0	350	0	473	30	265	25	M.	
220	5	240	4	309	70	309	0	315	0	340	0	365	0	340	88	441	0	163	0	J.	
220	8	240	4	290	25	309	0	305	0	355	0	355	0	590	145	450	0	215	50	J.	
220	8	260	4	280	20	319	0	315	0	357	0	365	0	575	15	505	25	408	25	A.	
220	4	190	30	310	40	310	0	315	20	360	0	365	0	555	30	508	75	429	50	S.	
220	6	220	40	325	30	310	0	318	20	360	0	365	0	583	30	505	50	404	50	Ø.	
220	10	260	70	339	40	318	0	325	20	360	0	365	0	572	42	541	50	384	50	N.	
220	20	260	35	306	15	316	0	320	40	365	0	365	50	562	42	480	50	414	50	D.	

TABLE B-3.

MAINTENANCE OF EQUIPMENT:MEMBERSHIP AND NUMBER UNEMPLOYED IN THE MONTREAL LOCALS OF THETRADE UNIONS

1923 - 1932.

	<u>1923</u>		<u>1924</u>		<u>1925</u>		<u>1926</u>	
	<u>Mem.</u>	<u>Un.</u>	<u>Mem.</u>	<u>Un.</u>	<u>Mem.</u>	<u>Un.</u>	<u>Mem.</u>	<u>Un.</u>
Jan.	3543	10	4007	4	5886	1480	5050	111
Feb.	4103	160	2221	9	6169	1005	5132	77
Mar.	3539	0	4154	18	5413	516	5069	346
Apr.	3500	0	4944	227	6230	593	6018	429
May	3110	0	6116	603	5378	465	4941	303
June	3533	800	6090	717	6380	573	5356	141
July	4324	40	6049	380	5801	654	5165	54
Aug.	3838	0	5639	674	4788	667	5094	227
Sept.	3944	0	6023	1256	5524	706	6147	1411
Oct.	5001	136	5061	1029	5581	771	5775	199
Nov.	4793	150	5325	1176	4713	93	5795	884
Dec.	4858	120	5858	1332	5810	1028	6215	946
	<u>1927</u>		<u>1928</u>		<u>1929</u>		<u>1930</u>	
Jan.	4749	796	6962	181	7129	670	8268	1177
Feb.	6208	896	7085	1115	7970	1344	9302	1205
Mar.	6175	543	8578	804	9473	564	9586	1104
Apr.	7507	513	8013	126	7842	306	7674	786
May	7643	629	8066	200	8913	294	8383	787
June	7684	632	8106	356	8314	275	8844	1402
July	7375	580	8463	582	9153	1021	9178	909

TABLE B-3 (cont.)

	<u>1927</u>		<u>1928</u>		<u>1929</u>		<u>1930</u>	
Aug.	7256	811	8013	380	7918	863	7961	681
Sept.	7621	786	8046	744	9584	267	6262	1015
Oct.	5376	800	7335	804	8635	1212	8241	992
Nov.	6697	873	7668	1079	9722	1309	6973	977
Dec.	7139	1155	8290	868	9335	1140	6231	958

	<u>1931</u>		<u>1932</u>	
Jan.	7306	674	5760	883
Feb.	7223	704	6656	1514
Mar.	6263	364	6124	870
Apr.	7454	536	5417	1588
May.	8294	954	5387	1377
June	6571	912	5693	1897
July	8180	1200	5310	1750
Aug.	8265	1152	5016	1737
Sept.	8206	3064	5130	1873
Oct.	8944	3626	4778	1927
Nov.	7095	976	5289	1888
Dec.	6023	1145	5099	2013

APPENDIX C.

FLUCTUATIONS IN EMPLOYMENT IN GENERAL OFFICE GROUP

(From statistics of one railway.)

TABLE C-1.

FLUCTUATIONS IN EMPLOYMENT

1924 - 1929

(Base - Average 1926 = 100.)

	<u>1924</u>	<u>1925</u>	<u>1926</u>	<u>1927</u>	<u>1928</u>	<u>1929</u>
Jan.	107.3	94.8	95.3	100.4	104.1	101.0
Feb.	107.5	94.4	95.1	99.9	104.0	99.9
Mar.	95.2	93.4	95.5	99.4	104.1	100.5
Apr.	95.1	93.3	96.0	102.9	104.0	105.1
May	97.3	99.6	100.7	103.0	104.5	103.1
June	98.2	100.5	102.2	98.0	105.8	103.7
July	97.0	97.6	103.5	97.5	106.7	107.2
Aug.	97.1	101.0	101.4	94.7	106.6	108.6
Sept.	95.6	98.7	103.4	94.5	103.9	106.8
Oct.	100.5	97.3	103.8	103.6	104.2	106.0
Nov.	93.9	95.8	102.7	103.2	102.0	102.6
Dec.	93.8	95.2	100.4	102.6	103.2	101.9

TABLE C-2.

NORMAL SEASONAL VARIATIONS IN EMPLOYMENT

Average 1924 - 1929.

(100 = 12 months moving average.)

Jan. 99.9	Mar. 97.4	May 100.7	July 101.1	Sept. 100.3	Nov. 100.2
Feb. 99.4	Apr. 98.7	June 100.8	Aug. 101.1	Oct. 101.9	Dec. 98.5

APPENDIX D.

FREIGHT TRAFFIC STATISTICS

Source. Monthly Traffic Report of the Railways of Canada.

Remarks. The statistics of passengers carried one mile in Canada, given in Table D-2, need no comment, as such statistics are of a standard nature. But the statistics of freight handled require one or two comments. The tons of freight originated, unloaded, and delivered to foreign connections in the Province of Quebec are given in Table D-1. It is the movement in the total of these three categories that is shown in Figure 6 as "freight handled". However, this total is not the "freight handled" in the customary sense of the term. It includes duplications. Internal freight is counted twice -- once when loaded and once when unloaded.

In addition to there being duplications in this total, there is also a category that is not included. Freight originated covers the freight loaded and freight received from foreign connections, foreign connections in this case being United States lines and Montreal harbour. The other two categories cover all freight terminated. Thus only the freight originating and terminating in Quebec is covered by these statistics, and the freight that is moved through the Province from one point outside to another point outside is not included.

However, the qualifications necessary because of these

inaccuracies are not serious. The duplications would probably only affect the seasonal movement if the seasonal movements in internal freight and in freight received from and delivered to foreign connections were not the same. In this case the duplications would have more effect on the index at certain times of the year and less effect on the index at others. As it is not likely that these movements are different, it is probable that the index numbers do represent the seasonal movement in freight handled.

The fact that the through freight movement is not included should not affect the seasonal variation. The freight affected is that moving from Ontario to the Maritime Provinces. Even if the seasonal variation were different for this movement, the effect on the index numbers would not be great, as the total volume of freight handled in this way cannot be very large.

TABLE D-1.

TONS OF FREIGHT HANDLED IN THE PROVINCE OF QUEBEC - ALL CLASSES

1924 - 1929.

(000 omitted.)

	<u>1924</u>			<u>1925</u>			<u>1926</u>		
	<u>O.</u> ¹	<u>L.</u> ²	<u>D.</u> ³	<u>O.</u>	<u>L.</u>	<u>D.</u>	<u>O.</u>	<u>L.</u>	<u>D.</u>
Jan.	1079	788	534	1076	737	417	1147	815	512
Feb.	1268	857	551	1209	861	488	1100	793	528
Mar.	1459	1030	609	1291	896	513	1626	1179	602
Apr.	1162	809	458	1192	816	485	1318	938	533
May	1381	1106	582	1335	1032	543	1541	1189	742
June	1431	1160	494	1463	1099	518	1693	1309	733
July	1366	1073	414	1516	1122	529	1848	1434	636
Aug.	1318	1010	374	1536	1126	486	1586	1238	504
Sept.	1392	1182	555	1502	1099	579	1844	1304	653
Oct.	1483	1436	833	1474	1270	762	1783	1417	754
Nov.	1193	1015	620	1284	968	698	1515	1194	830
Dec.	1082	798	511	1226	866	613	1244	1052	613

	<u>1927</u>			<u>1928</u>			<u>1929</u>		
Jan.	1178	990	506	970	737	466	1097	843	460
Feb.	1260	940	620	1229	958	543	1282	1011	490
Mar.	1507	1108	671	1348	1028	601	1277	958	575
Apr.	1284	989	525	1218	927	509	1309	954	538
May	1459	1213	642	1400	1110	670	1480	1170	632
June	1585	1200	683	1524	1198	564	1596	1312	677
July	1564	1125	616	1653	1344	637	1854	1459	688
Aug.	1630	1268	595	1725	1487	694	1852	1482	635

TABLE D-1 (cont.)

	<u>1927</u>			<u>1928</u>			<u>1929</u>		
Sept.	1528	1289	666	1619	1394	803	1725	1405	602
Oct.	1534	1390	713	1794	1716	914	1935	1573	644
Nov.	1196	1186	645	1484	1332	956	1521	1162	578
Dec.	1114	900	478	1297	1050	600	1250	924	456

1 - Freight originated.

2 - Freight unloaded.

3 - Freight delivered to foreign connections.

TABLE D-2.

PASSENGERS CARRIED ONE MILE - CANADA

1924 - 1929.

(000,000 omitted.)

	<u>1924</u>	<u>1925</u>	<u>1926</u>	<u>1927</u>	<u>1928</u>	<u>1929</u>
Jan.	190	181	190	196	201	199
Feb.	173	158	167	175	186	182
Mar.	208	181	202	233	222	228
Apr.	232	201	229	249	245	231
May	219	204	224	239	230	223
June	266	352	265	263	277	275
July	307	310	330	320	321	325
Aug.	357	404	365	351	420	330
Sept.	244	283	286	280	283	254
Oct.	218	242	232	223	269	206
Nov.	206	219	220	233	212	187
Dec.	222	246	250	253	237	229

APPENDIX E.

GROUPING OF EMPLOYEES IN CONNECTION WITH THE INCIDENCE OF
CYCLICAL UNEMPLOYMENT

The statistics used in determining the incidence of cyclical unemployment were taken from Steam Railway Statistics of Canada, 1929 and 1931. The classifications and the average number of employees for the year are given in the section -- Employees and Salaries and Wages. The numbers of the classifications included in each of the sub-groups are given below. The numbers are for the revised classification of 1926, as used in Steam Railway Statistics of Canada since then.

<u>Sub-group</u>	<u>Classification numbers</u>
Road service	56, 57, 60, 61, 67, 68, 69, 70, 73, 74, 76, 77.
Yard	64, 66, 71, 72, 75, 78.
Station and freight . . .	48, 49, 50, 51, 53, 54, 55.
Switch and signal . . .	52, 62, 63, 65.
 Tel. and tel. maintenance	22, 23.
Bridge and building . . .	9 to 16.
Track	17, 19, 20, 21.
Switch and signal main'nce	18, 24.
 Carmen	29 to 32.
Other crafts	26, 27, 28, 33, 34, 35, 36.

The titles of the classifications included in the low-skilled group are as follows:

Maintenance of way and structures: Labourers.

Maintenance of equipment: Car cleaners;

Other unskilled employees;

unclassified labourers.

Transportation: Freight handlers and other station employees;

Labourers;

Dining car and restaurant helpers and attendants;

Sleeping and parlour car porters.

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