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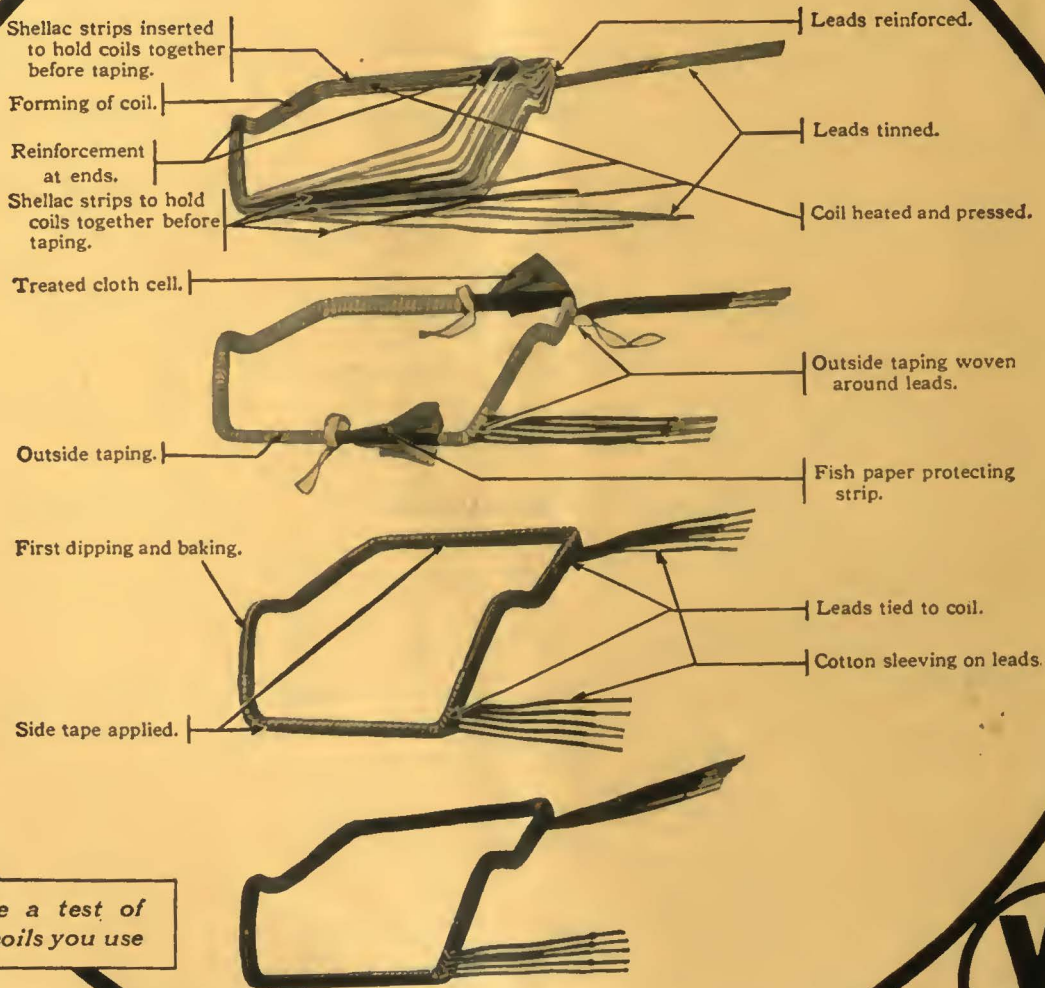
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270,000 Words

A CONSERVATIVE estimate of the number of words spoken during the official sessions of the two-day Midyear Meeting held at Washington Monday and Tuesday of this week would be approximately 270,000. To publish in full the remarks of the various speakers would require some 170 pages of ELECTRIC RAILWAY JOURNAL size, averaging 1,600 words to the page.

Instead of presenting this material to its readers in that way the JOURNAL has abstracted and condensed the reports of the proceedings into 20 pages in this issue. A vast amount of work was involved in this process. All of the proceedings were of interest and careful weighing was necessary to determine which portions were of such outstanding importance that they should become part of the permanent record of the industry.

Such condensation, we believe, will make the story of the meeting readily available to railway men who were unable to attend. Few would have time to read 170 pages, but any one can easily read 20. If more general interest in the proceedings of the meeting results from this effort the JOURNAL will feel amply repaid.

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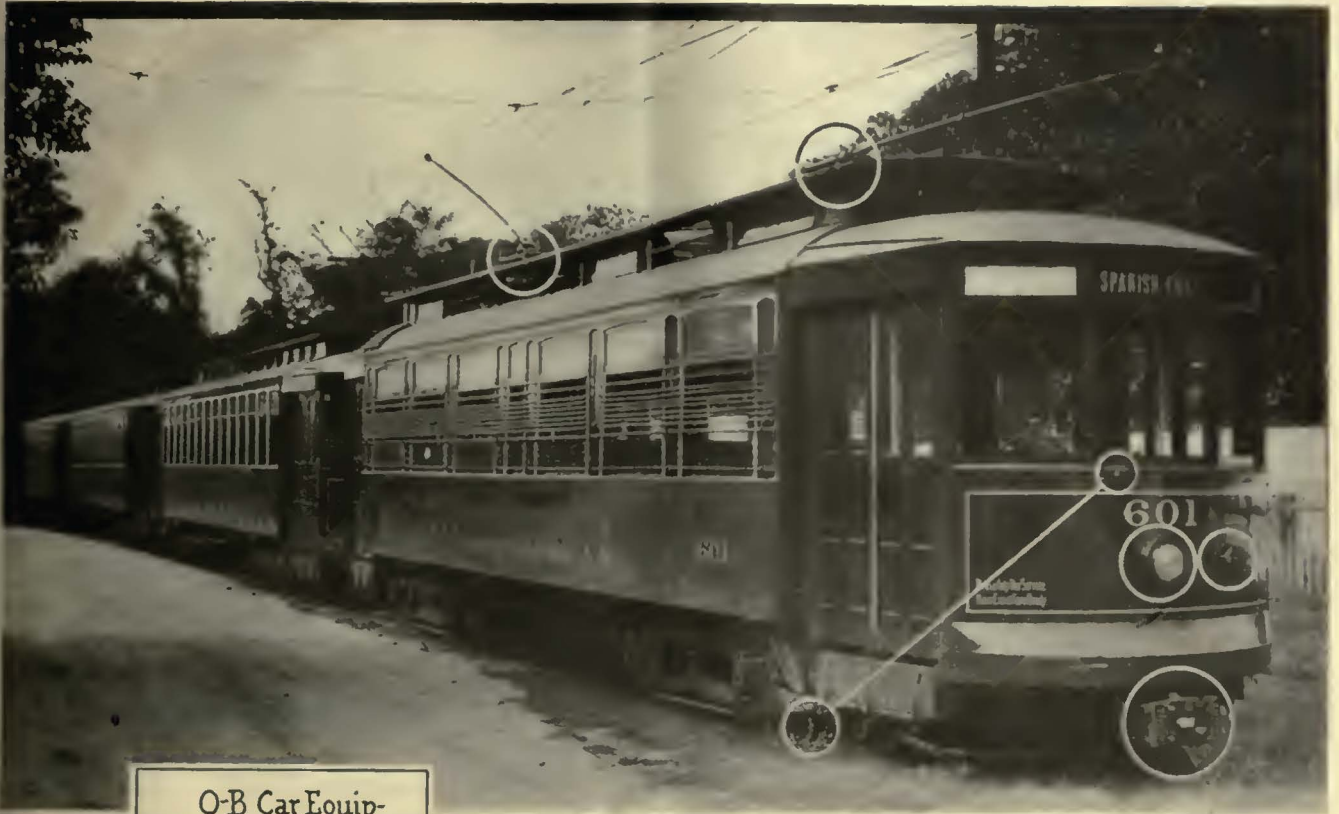
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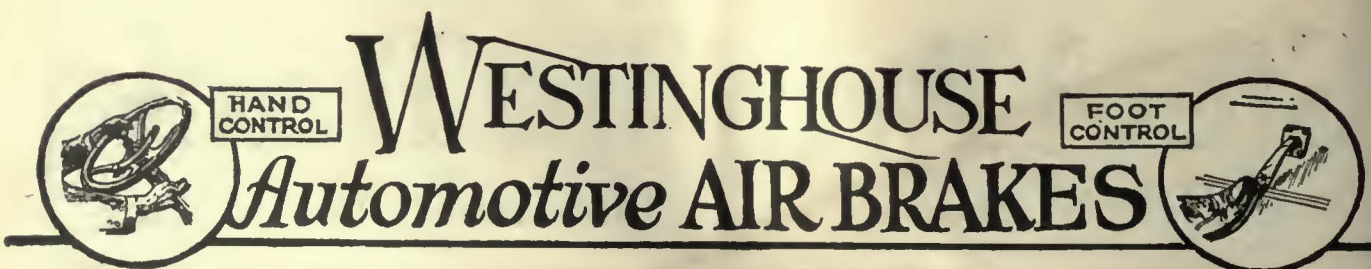
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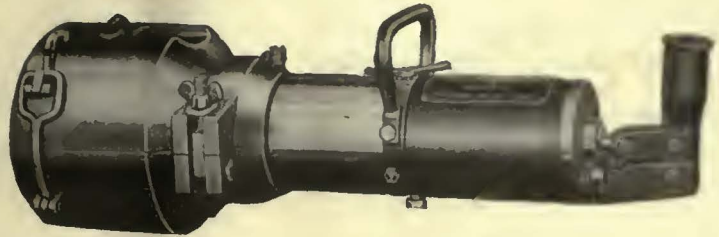
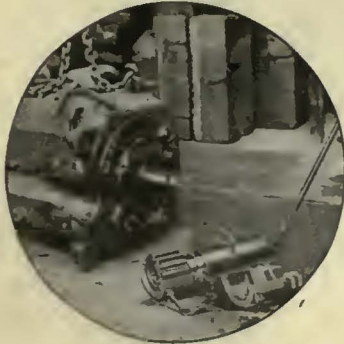


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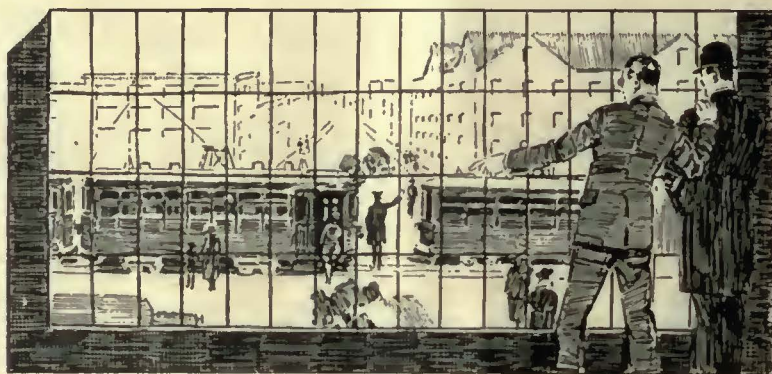
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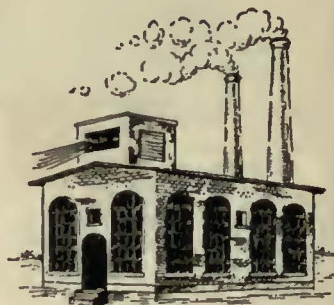
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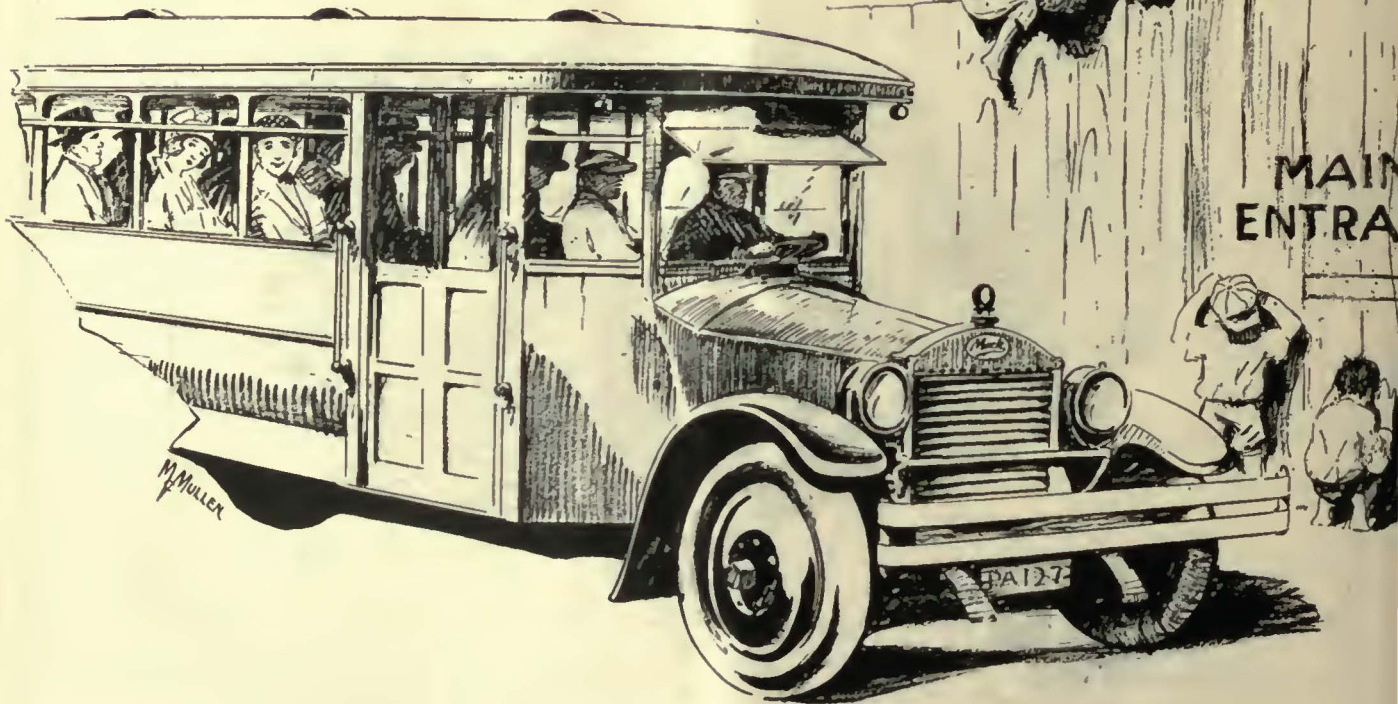
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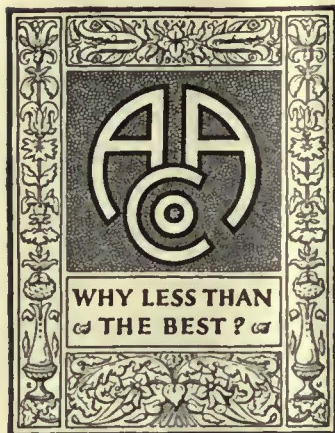
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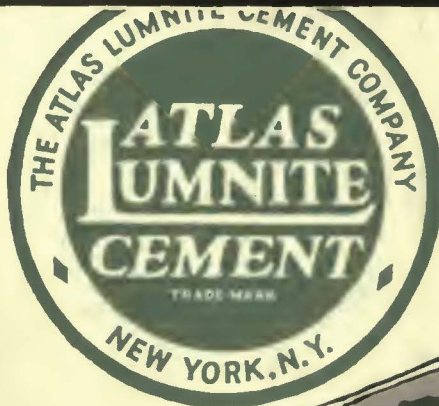
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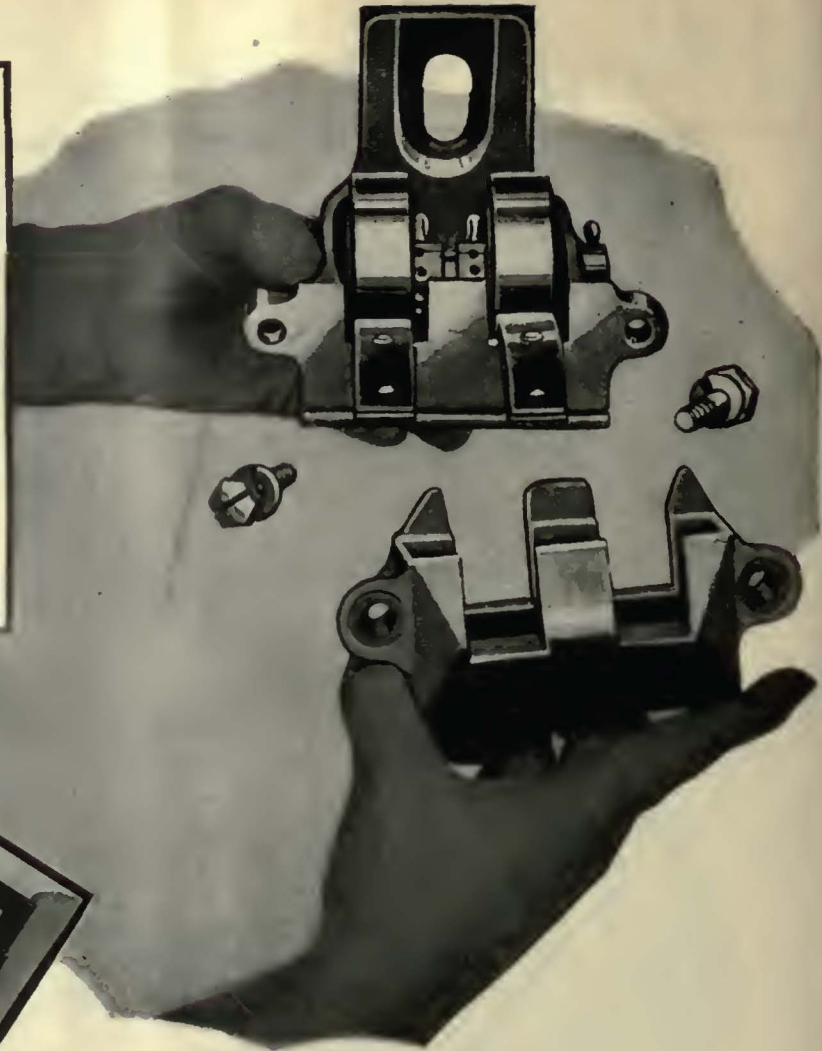
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Volume 65

New York, Saturday, February 21, 1925

Number 8

Railway Association Raised to New Plane of Usefulness

NO MORE important step has been taken by the American Electric Railway Association than that brought to fruition and announced at the Midyear Meeting in Washington, and for which the industry is primarily indebted to President Shannahan.

First, an advisory council has been formed which brings to the electric railways and to the association the active interest, support and direction of such outstanding men as these:

B. C. Cobb, Owen D. Young, Guy E. Tripp, Samuel Insull, Randal Morgan, Lucius S. Storrs, Henry G. Bradley, Nicholas F. Brady, Britton I. Budd, Frank R. Coates, Samuel M. Curwen, Frank L. Dame, Henry L. Doherty, Charles D. Emmons, Philip H. Gadsden, Thomas N. McCarter, Sidney Z. Mitchell, John H. Pardee, H. Hobart Porter, Paul Shoup, R. P. Stevens, Arthur W. Thompson and John N. Shannahan, president of the American Electric Railway Association, *ex officio*.

Second, the association activities are broadened by appointment of a managing director in the person of Lucius S. Storrs, president of the Connecticut Company, a past-president of the association and one of the foremost men of the industry.

The association in years past has done splendid work and has been a very constructive and helpful agency. But it has been apparent to many that its maximum possibilities were not being realized, and could not be, under the leadership of a president elected annually. The president has always been a railway executive whose primary duties lay with his property, the association necessarily being to him a secondary responsibility. However capable and far-seeing he was, he could not give the time to do the many bigger things for which there have been and will continue to be repeated opportunities. In other words, the industry has had no one who could represent it adequately before various public bodies, or who could take part in those local situations which, in their reaction and reflection throughout the entire industry, have so vital and important a national aspect.

Under the plan now adopted the industry will have one of its most successful executives, backed by the advisory council, as its permanent representative, and making it his sole duty to look after the interests of the electric railway business. This will naturally tend somewhat to relieve the president of duties which have come to demand more time and energy than could be devoted to them by an active railway executive. It should be remembered that the president of the association is selected from the country at large and not because his own headquarters are near those of the association. The association has been extremely fortunate in having presidents who have spent considerable time at headquarters, often at great personal sacrifice, but this condition cannot always prevail.

This, indeed, is the most important step the association has yet taken and no words of praise will be too glowing for the accomplishment of Mr. Shannahan.

Expense of New Association Plan of Small Importance

THERE are those who will see first the expense of this new plan of the association rather than the possible results. It will add expense, to be sure—but when this is spread over the industry, the amount needed from each company will be so small as to be negligible.

At the present time, it was felt that this expense could not be borne by the association out of its revenue from dues, inasmuch as the cost of the work heretofore done by the Committee of One Hundred has but recently been taken over by the association. This will consume most of the surplus the association has heretofore enjoyed. Rather than raise the dues, the advisory council members agreed to underwrite the cost of the expanded activities of the association which this move contemplates. Nevertheless, it is anticipated that the value of the work to be done will be so far-reaching that it will be enjoyed by the small companies as well as the large. Accordingly, the support of all companies, both railways and manufacturers, should be accorded if the plan is to come to full fruition, and they should be glad to relieve the underwriters of the burden they have assumed.

The JOURNAL is heartily in accord with the whole plan. It should be given full support and co-operation by the railways and the manufacturers of the industry generally.

Selecting the Right Man for Managing Director

AFTER the advisory council had agreed on the new plan of organization, attention turned to the work of obtaining for the position of managing director a man of outstanding ability. A new position of this character can only be as great as the man selected to fill it, for what it becomes depends almost entirely on what he makes of the opportunity. It was, therefore, no small task to select a man who would combine those attributes essential to obtain results—a man of vision, breadth of purpose, and depth of character, and one who had the confidence of the industry, of the financier and of the public.

To make the selection a yardstick was set up, and each man thought suitable was compared with it. Before the council was able to find a man who possessed the particular experience and ability considered essential, the thought came to those making the selection that there could be but one answer—why go afield if the one man, the yardstick, could be persuaded to take the position? So Mr. Storrs was approached, even

though it was felt that he would not consider severing his connections with the Connecticut Company, which he had served so ably. It was only because of the opportunity for greater service to the industry that he was willing to accept the newly created position.

In Mr. Storrs are combined those qualities that are needed for leadership. He has successfully piloted one of the largest railways in this country through the most difficult period in the history of the industry. In turn, he has displayed the patience and tact necessary to solve harassing problems by negotiations and the indomitable fighting spirit needed to insure victory when the situation has passed beyond the point of mediation. No better indication of his executive ability can be found than the high esteem in which he is held by his fellow workers in the industry and by the general public in the territory where his company is located.

Partial Relief of Traffic Congestion Can Be Had at Once

ABOLITION of left-hand turns wherever possible was favored by the committee on relief of traffic congestion of the Transportation & Traffic Association at the Midyear Meeting in Washington. In the past it has been claimed by those wishing to permit left-hand turns that congestion is increased by forcing vehicles to go around three sides of a square to accomplish a change of direction. After careful consideration of the problem and investigation of conditions in a number of cities, however, the committee is strongly of the opinion that the elimination of left-hand turns at street intersections and in the middle of the block will relieve traffic congestion. This is a measure which can be put in effect now where congestion is serious.

A criticism which can justly be made of most schemes to relieve traffic congestion is that they are too ambitious for practical purposes. More and wider streets are frequently urged as a remedy. Whether this would really improve matters or only encourage more vehicles to use the streets is problematical. Aside from that, the great defect of such a plan is that it would take years to carry it out. Immediate relief is needed. Rather than devoting their attention to plans to relieve congestion 5 years, 10 years or 50 years in the future, municipal authorities should consider what can be done now. After partial relief has been secured the future needs can be studied.

In addition to the elimination of left-hand turns several other partial remedies could be put into effect at once at small cost. By limiting parking to the left-hand side of narrow, one-way streets and forbidding vehicles to park two abreast on any street a considerable gain in useful street capacity would be had. Loading and unloading of delivery trucks could be regulated to leave the street free for moving vehicles. Some inconvenience would undoubtedly result from the enforcement of such rules. On the whole, however, it would probably be less than the inconvenience incident to the ever-recurring delays under the "do as you please" plan so generally in effect now. Certainly no intolerable hardship would be inflicted on any one.

Regulations of this kind are not a complete and permanent solution of the problem. Elimination of all parking in the congested area would be far preferable to partial elimination. Such simple remedies as

that recommended by the committee on relief of traffic congestion, however, can be put into effect without arousing antagonism. After this has been accomplished it may be possible to follow up with other more far-reaching measures. It is better to take a step in the right direction now than to hesitate simply because the ultimate goal seems a long way off.

Census Report, Just Out, Contains Much Interesting Information

ALTHOUGH very late in appearance, the census report of electric railways for 1922, just published, will prove of great value to electric railway companies. One reason for this is that no other agency than the Census Bureau compiles such extensive data in regard to the industry. Another reason is that the census figures for 1922 are directly comparable with those for the preceding electric railway census years of 1917, 1912, 1907, 1902 and 1890. A digest of the report, including reproductions of eleven tables of special interest in the 1922 census, is contained in this issue.

In general, the figures confirm those on the status of the industry, as shown in earlier unofficial figures compiled by independent observers, including this paper. There has been no increase in electric railway trackage in the 5-year period. In fact, there has been a slight decrease, since most of the recent extensions by railway companies have been made by buses. There is also a reduction in the number of passenger cars. This may be explained by the destruction by many companies of a considerable number of obsolete cars within the last few years. A lower value of road and equipment is shown in the balance sheet for 1922 as compared with 1917. This is perhaps explainable through the reorganization of several large companies and the fact that better times have enabled the companies to put their balance sheets in better condition. Clearer evidences of a more prosperous condition are an increase in number of revenue passengers of 12.2 per cent, of railway operating revenue of 42.3 per cent, of net revenue from railway operation of 7.9 per cent, of net corporate operating revenue of 12.3 per cent, of operating income of 6 per cent and, finally, of net income of 1.3 per cent.

A study of the operating expenses in 1917 and 1922 shows that the expenses in all of the primary accounts have increased greatly, the range being from 18.7 per cent for the small item of "traffic" to 83.9 per cent for "maintenance of way and structures." The average increase in expenses during the 5-year period was 60.8 per cent. The primary expense account showing the largest increase in dollars was, of course, "conducting transportation," owing to increases in wages paid. But it is an evidence of the economical measures introduced by railway companies to note that during each half decade since 1902 there has been a constant increase in number of revenue passengers carried per car operator (car operator in this case being understood as including conductors, motorman and one-man car operators, but not elevated railway and subway guards). In the last half decade this number increased from 83,010 passengers in 1917 to 97,267 passengers in 1922. Expenses beyond the power of the railway to control have also gained in magnitude, the taxes having gone up 35.6 per cent during the last 5 years considered in the report.

Managing Director Appointed for American Association

Advisory Council Recently Formed by Executive Committee Creates New Office—Lucius S. Storrs, Selected to Fill This Important New Position, Is Widely Known in the Industry—Appointment Effective April 2

FOR some time past it has been felt that the American Electric Railway Association has not been tied in closely enough with the owners of the electric railway properties. It has been the operating men, the managers, engineers, superintendents, accountants and claim agents who have carried on the greater part of the association activities, both at conventions, in committee work, and even in the councils of the association. There have been questions of policy under discussion that are vital and of far-reaching importance. At times these have been of such a character that they could not be handled adequately by operating men. Yet the organization has not provided the opportunity for financial men and owners to take their place in the councils of the association.

This situation has been fully realized by President Shannahan and the executive committee. Complete recovery and modernization have been considered essential if the industry is to take the place it should hold among the industries of the country. This, it was felt, depended on the whole-hearted backing of the owners. Accordingly, the executive committee of the association, at a meeting held on Nov. 20, 1924, passed a resolution authorizing and directing the organization of a new committee to be composed primarily of owners of the electric railway properties. This new body, termed the Advisory Council of the American Electric Railway Association, was at once appointed by President Shannahan. It consists of 23 members with B. C. Cobb, a man prominent in utility financing, as chairman. The full personnel of the committee is given on page 287 of this issue.

The council held its first meeting in New York on the evening of Feb. 3, with a large attendance. It was apparent at once that there was an opportunity to do a fine piece of constructive work. But in discussing



PRESIDENT J. N. SHANNAHAN

ways and means of procedure it soon became evident that there must be some one who could be charged with the duty of working out whatever policies were decided on. Such a man would of necessity have to speak, not alone for the advisory council nor for the association, but he actually would have to represent the industry itself.

A position such as this demands a man of the highest type—one with courage, vision, tact and industry. Representing both the owners and the operators, intimate knowledge of



LUCIUS S. STORRS

details of management, of financing, of public relations, are all essential.

The man selected for the place, Lucius S. Storrs, president of the Connecticut Company, is felt by all to be the man for the place. His choice will make available to electric railway managements and the public the services and advice of a transportation executive with wide experience. The company with which he is associated is one of the largest electric railway properties in the world. Its electric cars and buses operate practically in all parts of the State of Connecticut. That the people of that State have faith in Mr. Storrs is evidenced by their attitude. In return for square dealing, clean cars and good service, they have given his company better fares, protection against jitney competition and relief from paving charges.

During the last 6 years Mr. Storrs has devoted much time and energy to furthering the recommendations of the Federal Electric Railways Commission, which, under appointment of President Wilson, investigated all angles of the traction situation. Outstanding among its recommendations were frank dealing with the public, improved service and fair returns to the companies.

According to a statement made by leaders of the industry, the foremost problems now confronting it are modernization of equipment, new financing, and co-ordination of bus and electric railway service. It is maintained that best service and most reasonable fares will be provided to communities through the consolidation of all local transportation under suitable public regulation.

Mr. Storrs will retire from his position as president of the Connecticut Company, but will remain as a director. He will assume his duties on April 2, with offices in the Johns-Manville Building, Madison Avenue and 41st Street, New York City, on the floor adjacent to the new offices of the American Electric Railway Association.

Transportation Topics Considered at Midyear Meeting

Fares, Merchandising Methods, Improving the Quality of Service and the Place of the Bus Were Among the Subjects Discussed by Prominent Speakers at Washington—Attendance Was Unusually Large

ONE OF the liveliest Midyear Meetings ever held by the American Electric Railway Association took place at Washington, D. C., on Feb. 16 and 17. Transportation topics were discussed by men representing the operating companies, the manufacturers, the public and the regulatory bodies. The bus played a prominent part in the discussions. Meetings of committees of the association took up the first day, while the second day was given over to addresses by prominent speakers.

The morning session Tuesday was called to order by President Shannahan, who introduced Col. J. Franklin Bell, chairman Board of Commissioners of the District of Columbia. Colonel Bell welcomed the association to the "town meeting," stating that Washington is the nation's town, and so every one has a right to be there and enjoy its facilities.

Senator William B. McKinley, Champaign, Ill., greeted the association as a former electric railway man. Next to fire, he said, our greatest discovery is that of electricity. In a few words he sketched the growth of the electrical industry from its beginning up to the present time.

The association was welcomed also by Elliot H. Goodwin, vice-president of the United States Chamber of Commerce. He said that the Chamber of Commerce is representative of all the business interests of our country, among which is the American Electric Railway Association. He explained briefly that the new Chamber of Commerce Building in Washington is available as a contribution to the work of the various civic organizations represented in the national body.

In his presidential address Mr. Shannahan reviewed the status of the elec-

tric railway industry for the year 1924. He showed that the electric railways have improved their condition both in a material and in a financial way. He quoted figures to show that the industry had held its own during the year and that the outlook for the present year is even better. These figures were embodied in a statement given out to the daily newspapers some time ago by him and referred to at the time in *ELECTRIC RAILWAY JOURNAL*.

The formal address of the meeting was delivered by Interstate Commerce Commissioner John J. Esch. He sketched the regulation of interstate commerce as defined in the Constitution of the United States. The development of the various interstate industries of the country was shown, covering the entire history of the nation. The portion of Mr. Esch's speech dealing specifically with electric

Owen D. Young's Tribute to Mr. Storrs

I SHOULD like to join General Tripp in congratulating the president of the association and the association itself in gaining as your managing director Mr. Storrs.

As I have been thinking about it, you have an industry, but perhaps you haven't an art; you have a trade, but perhaps you haven't a science, and I take it, it will be the business of your managing director to develop the science of transportation in your field. That is to say, to collect that body of things known in order that you all may benefit. And it is the kind of thing which is always done when need arises. We suffered from typhoid fever, from diphtheria, from malaria, and finally the time came when we suffered no more from those diseases. Great heroism and suffering had been shown to avoid those plagues. People had prayed and suffered, but the plagues existed. Nothing really happened worth while



OWEN D. YOUNG

until a man whose business it was to find out about that particular difficulty sat down in his laboratory and his study and devoted his time and attention solely to that particular job, and when he did, the germ was isolated, the specific ways found, and the disease disappeared.

Now, to the extent to which you have diseases in this business, you are adopting that same

policy, and that policy will succeed. It depends only upon the capacity of your reserve worker and, fortunately, of that we have no doubt, and second, it depends upon the confidence and belief of the administrators of the properties in the man and the specific help which he proposes, and of that you are assured.

Typhoid would not have been eliminated if the physicians of the world had not confidence enough in it to inoculate. So Mr. Storrs can render you no service unless you at least try to follow the formula which he proposes. If you will do that, and give him your support, then I am sure that your difficulties will be solved—not tomorrow; you must be patient about it, but ultimately they will be solved.

And so I congratulate you on this step forward. And difficult as the job is, I congratulate Mr. Storrs upon the opportunity which its very difficulties present.

railways is abstracted elsewhere in this issue.

A spirited talk in characteristic style was given by Peter Witt, traffic consultant and formerly street railway commissioner of Cleveland. Mr. Witt recited many of his experiences in the street railway business, some of which indicated opportunities for great improvement. Mr. Witt's address is abstracted elsewhere in this issue.

Following Mr. Witt's address the meeting adjourned to the south lawn of the White House, where a picture was taken with President Coolidge.

Afternoon Session

At the afternoon session, J. G. Barry, vice-president General Electric Company, read a paper outlining the views of the manufacturer relative to the electric railway industry, with particular reference to the view of the electrical manufacturer. This is abstracted elsewhere.

A rising vote of thanks was extended to Mr. Witt and Mr. Barry for their contribution to the program on motion of C. E. Morgan, vice-president and general manager Brooklyn City Railroad. Commenting on Mr. Witt's talk, M. B. Lambert, manager railway department Westinghouse Electric & Manufacturing Company, said that in paying deserved tribute to Mr. Birney for his work in developing the safety car Mr. Witt had failed to give credit to himself for the car which has been called by his name. Mr. Lambert also said that credit was also due to P. N. Jones, late general manager Pittsburgh Railways, for the development of the low-floor car. Development of a small number of standard trolley car designs with standardized equipment was advocated as a means of improving conditions in the railway industry.

Referring to the talk of Mr. Witt, Mr. Morgan called attention to the importance of having electric railway executives ride in their own cars. From his own experience, he said, great benefit is derived by the railway manager from this first-hand contact with employees and customers. An opportunity is available for individual contact with the men in charge of the car and valuable suggestions may frequently be obtained by contact with the passengers.

Miss Helen Sterner of Lorain, Ohio, discussed the subject of electric railway service from the standpoint of the feminine passenger and entered a plea for consideration of the woman's viewpoint in judging the character of service being rendered to the public.

Continuing with this topic of improving service, C. D. Emmons, president United Railways & Electric Company, Baltimore, Md., discussed briefly the work of the service department in his company. Its primary object, he said, was to get the viewpoint of the car rider. After getting this viewpoint, and in adopting steps to improve service, promptness in applying a remedy is considered one of the most important factors. "Do it now" is the motto of this department. Mr. Emmons added that so far as service department work is concerned this motto is based on the thought that things promptly done are twice done. On the subject of standardization, he said that improvements



PRESIDENT COOLIDGE GREETES THE LEADERS OF THE INDUSTRY AT THE MIDYEAR MEETING

in the apparatus used on cars were one factor responsible for the large number of types developed, and that lack of standardization is largely attributable to this cause.

Speaking from the car rider's viewpoint, Walter Drey, vice-president and general manager *Forbes Magazine*, said that many small incidents and conditions may affect the car rider's impression of electric railway service. He mentioned the matter of illumination in cars as a subject that was worthy of serious study. Contact between trainmen and the public is particularly difficult, according to Mr. Drey, because it is a group contact rather than that of individuals. Situations which might readily be handled between individuals become productive of irritation and bad feeling when the contact is with larger groups. He advocated study of crowd psychology as a means of determining methods of improving public relations of the industry.

W. H. Sawyer, president East St. Louis & Suburban Railway, called attention to the attendance at the meeting and compared this with the conditions regarding previous electric railway conventions attended by Mr. Witt. Mr. Sawyer called this another day, and he referred to the audience as a 1925 group of electric railway operators. He also recorded the fact that it was a representative of the public, in the person of Mr. Witt, who during the morning session had advocated zone fares and who had criticised public service commission regulation of electric railways.

President Shannahan prefaced his introduction of the newly elected managing director of the American Electric Railway Association by saying that the need for this step had been developed from a realization of the lack of a direct tie between the owners of electric railway properties and the activities of the association, which are carried on primarily by the managements of these properties rather than by their owners. In handling situations of national importance, he said, there is a limit be-

yond which the operator or manager cannot go. In the administration of the National Electric Light Association he pointed out that a policy committee had been formed to overcome just this situation. The advisory council of the American Gas Association performs the same function. The American Electric Railway Association executive committee had therefore decided to take a leaf from the experience of these other associations and had formed an advisory council which consists of the following members: B. C. Cobb, Owen D. Young, Guy E. Tripp, Samuel Insull, Randall Morgan, L. S. Storrs, H. G. Bradlee, Nicholas F. Brady, Britton I. Budd, F. R. Coates, Samuel M. Curwen, Frank L. Dame, Henry L. Doherty, C. D. Emmons, P. H. Gadsden, Thomas N. McCarter, S. Z. Mitchell, J. H. Pardee, H. Hobart Porter, Paul Shoup, R. P. Stevens, A. W. Thompson, and J. N. Shannahan, president American Electric Railway Association, ex officio.

At the initial meeting of this council, held in New York City on Feb. 3, 16 members were present. It was apparent at this meeting that an opportunity existed for doing widespread constructive work in improving the situation of the electric railways. It was also apparent that this work must be put in the hands of some one individual to direct and co-ordinate. Mr. Shannahan announced that Lucius S. Storrs, president the Connecticut Company, had been elected to this newly created position, with the title of managing director of the American Electric Railway Association. Mr. Shannahan went on to say that this new activity will give the industry an opportunity for taking up nationally the problems affecting its interests just as soon as it becomes evident that such questions are of national significance. He said that the advisory council has agreed to underwrite the cost of this work until it could be distributed among the individual companies who are to receive its benefits. Steps will therefore be taken to distribute the expense resulting from this new activity.

At the conclusion of President Shannahan's remarks, Mr. Lambert said that the association and the industry owed its president an expression of appreciation for his initiative and action which had resulted in the formation of the advisory council and in the election of a managing director of the association.

MOTOR BUSES DISCUSSED

A paper on motor buses from the electric railway viewpoint was read by H. A. Mullet, assistant general manager the Milwaukee Electric Railway & Light Company in the absence of the author, S. B. Way, vice-president and general manager of the same company. Mr. Way's paper appears elsewhere. At the conclusion of the paper Mr. Mullet answered a number of questions relative to the operation of buses in Milwaukee. He described the conditions under which seven-passenger sedan automobiles are run in competition with the electric railway company's service, and the system of fare collection used on buses of the railway company. He said that in interurban service the buses had shown earnings which paid the entire cost of operation and depreciation, together with a slight return on the invested capital.

The motor bus was considered from the motor vehicle viewpoint in a paper by T. R. Dahl, secretary the White Company, representing the National Automobile Chamber of Commerce. This paper appears elsewhere.

Following the presentation of the paper, President Shannahan commended Mr. Dahl on his extremely fair view of the relation between the automobile and the electric railway industries and said that the association and the electric railway industry owed Mr. Dahl a vote of thanks for his able presentation of this subject.

Then followed a consideration of the need for co-operative treatment of the transportation requirements in a city, and a spirited discussion ensued on the relations which should exist between an electric railway company and an independent bus company operating on the same streets. The principal speakers were Col. A. T. Perkins, manager for the receiver United Railways Company of St. Louis, and T. S. Wheelwright, president Virginia Railway & Power Company, Richmond, Va. At its conclusion President Shannahan declared it to be the policy of the association to stand for fair tactics between rival transportation systems.

J. C. Thirlwall, General Electric Company, discussed the development of the electric bus drive recently perfected by his company. He said that in general the trend today is toward bigger and bigger buses, both of the single-deck and double-deck type. The bigger vehicle has compelled the use of a bigger power plant. The six-cylinder engine of greater horsepower is being generally adopted. Using the mechanical drive that has been a standard part of automotive equipment on these larger vehicles with their larger power plants has developed difficulties that were never apparent in the pleasure car or in the smaller and earlier forms of the bus. It is almost amazing to the average railroad man who takes up bus

AT THE MEETING of the executive committee of the American Electric Railway Association held in Washington Feb. 16 the following statement of principles regarding the motor bus was unanimously adopted:

Principles Regarding the Motor Bus

Recognizing that there is a place for the bus in local transportation, the executive committee of the American Electric Railway Association subscribes itself to these convictions:

1. No medium has yet been developed which alone can take the place of the electric railway in moving large numbers of persons during morning and evening rush hours in cities. There is a place for the bus in transportation as an auxiliary of or supplement to and, in some instances, substitute for electric lines.

2. Electric railways are in the business of providing transportation in their respective communities. It is their duty to supply all local transportation, both by electric railways and buses, essential to good public service. When supplying such service by rail cars, buses, or both, they should be protected against competition in the operation of all such lines.

3. Buses should be regulated by law as common carriers and the effort to make bus regulation uniform throughout the United States continued and encouraged.

4. Both buses and electric railways should bear proportionate taxes and other public obligations fairly chargeable to them as public carriers.

operation for the first time, the terrific maintenance cost and the comparatively brief life of the driving mechanism when he compares it with his rail car expense. In analyzing the cost of maintenance, it is found that the mechanical drive itself is largely responsible in the hands of the average operator. The gear shift and clutch, handled by the ordinary driver, is a weapon of mechanical assault and battery on the engine itself, on the clutch, on the gearing and on the axle and tires.

It was to minimize the terrific shocks and strains that are inherent in the mechanical drive that the gas-electric drive for buses was recently developed and perfected.

Electric drive simply means taking out the gear box, the transmission gearing and the clutch, and in some instances taking out the differential drive and substituting for it a dual drive, removing parts that are inherently short-lived and high maintenance parts and replacing them with an electric generator, directly connected to the engine and with a motor or motors of the ordinary railway type.

By actual tests, he said, it has been found that in city service the engine revolutions per mile are reduced from 15 to 21 per cent; that the maximum engine speeds are reduced approximately 40 per cent; that the inspection of the engine, which many of the larger companies put on a 2,000-mile basis, can be stretched out to 4,000, 5,000 or 6,000 miles, which in itself saves materially in cost, and that, better than that, the electric equipment permits of an almost instantaneous test of the efficiency of the engine by

connecting the generator to a water rheostat and taking ammeter readings at a given engine speed. That permits in a few minutes an exact determination of the condition of the engine which can only be had at the present time by taking the engine off the car and settling it up on a stand dynamometer test, which is a long and extremely expensive performance.

A bigger thing than maintenance, however, is the fact that it was found by an extensive series of tests that a higher schedule of speed could be maintained with the electric drive without abuse to the equipment or without discomfort to passengers than is possible with the mechanical drive, and as railway men I think we all realize that high schedules are not only the greatest economy that can be effected in railway operation, but they are also one of the best means of selling transportation. In answer to a question he said that he believed it possible ultimately to develop this type of drive so there would be little if any increased weight in the mechanical construction.

A resolution proposed by C. D. Emmons was passed expressing the thanks and the appreciation of the association to the speakers and various organizations which had co-operated to make the meeting a success, particularly the Chamber of Commerce, the management of the New Willard Hotel, the committees of the association on transportation, subjects and meetings, and dinner arrangements. Thanks to the local railway companies and to J. H. Hanna, vice-president in charge of operations Capital Traction Company, were also included in the resolution.

President Shannahan announced that the annual convention of the association would be held in Atlantic City during the week beginning Oct. 5, after which the meeting adjourned.

The last event on the program of the meeting was a banquet in the ballroom of the New Willard Hotel. More than 700 diners were present to enjoy one of the best sessions of the entire convention.

During the dinner the guests were entertained by a number of vocal selections. Much amusement was occasioned by the distribution of a four-page leaflet, "One Bell," made up to resemble a newspaper. The publication of this sheet was arranged by Robert Dougan, publicity agent Capital Traction Company, and printed with the assistance of the Washington Times.

After the dinner the guests listened to three speakers who discussed topics of interest to the electric railway industry. The speakers were G. F. Hamilton, president Capital Traction Company; Gen. Guy E. Tripp, chairman board of directors Westinghouse Electric & Manufacturing Company, and Matthew C. Brush, president American International Corporation. By special request of Mr. Brush, Owen D. Young, chairman of the board General Electric Company, spoke a few words of congratulation to the association and to Mr. Storrs concerning his appointment as managing director. These remarks appear verbatim elsewhere. At the conclusion of the speeches there was informal dancing.

The Car Rider's Viewpoint*

By Peter Witt

Street Railway Consultant, Cleveland, Ohio

Observations on Railway Operating Methods in Nineteen Cities—Better Transportation Is Demanded Rather than Cheaper Transportation—Larger Field for Railway Service Pointed Out

I HAVE been in 19 cities and I have ridden cars until I was sore but satisfied. I have seen many things that the owners of transportation companies have never seen; and my advice to you is—get acquainted with your own product and you will be able to appreciate the feelings of the people that you are doing business with.

Most of the people who are engaged in transportation seem to look upon their customers as enemies. It is the most remarkable business that you can imagine, where every owner thinks that every fellow who gives him a nickel is his enemy. You sort of have an attitude toward him like a merchant would have if he put a bulldog in front of his store after he spent money in advertising a cheap product. It doesn't work that way.

Take your engineers and your master mechanics and general managers and send them around the country and let them see what other properties are doing. Don't go there announced, to be entertained by the other fellow, but go there as a stranger, because it is my observation, of course, that we do make progress, and you then will see the many things that I have seen in the 19 cities that I have been doing car riding in, and you will have many a good laugh.

Of course, the common thing that I meet in most places is that very few transportation people keep their track in good condition. It seems to be the universal rule that when a joint commences to show a break and the equipment starts to hit it, you don't send the man out to repair it, but you wait until the joint is gone and the rail on the opposite side is cupped. And after the equipment has pounded itself to pieces for 2 years, you go out and put in a new piece of equipment. That isn't the way a car rider ought to be treated.

You will become informed of many things if you will send your men around the country, so that they may observe how things are being done and come home and tell you, so that you may profit by it. In every town something is done better, and some things are done worse than in any other town; all you have to do is to pick up the good things and bring them home in a collection and then you will have all the good things for your own town.

I have ridden in street cars where I found transfers three weeks old. I have seen conductors punch transfers with a nail. I remember one city I got into, where I was waiting for the car to start. All of a sudden a fellow came along and I looked at him and I



PETER WITT

thought he was a curve greaser. He had on a pair of overalls—not even made of the checked stuff, but made of the plain blue. I looked at him and thought, "This fellow is riding the car with his grease bucket; I wonder if he keeps the grease off of the passengers." But I was mistaken; that wasn't the fellow who greased the curves, it was the conductor himself.

Now, you wouldn't like, if you were riding the street car, to have a fellow in the uniform of a curve greaser come up to collect the fare, would you? Well, the chances are that that corporation in that particular city, through the individuals in control, did not like it, but the officers never rode a car, they didn't know the way the conductor was dressed.

In that same city I saw a thing that amused me very much. I noticed that the trail pullers running around in the daytime had a night shirt on them; they were dressed in a night shirt made out of canvas. Well, I never had seen a coupler incased in a canvas bag, and I said to one of the men operating the property, "What's the idea of putting canvas over the couplers?"

"Why," he said, "that will keep the dust off of them."

Now, that sounds funny to you, but I saw it with my own eyes, and saw the man take it off and then put it on. Imagine a railway spending good money in buying canvas bags to put over couplers to keep the dust off of them.

Can you wonder that sometimes the car-riding public doesn't take kindly to the trials and tribulations that you go through, when they see such nonsensical performances? That is patent, you know, when you go out if you merely observe those things. You can't observe them if you stay home; you can't get next to them if you go down to Young's Pier at Atlantic City, but if you travel all over the country you will become acquainted with them.

I have been in cities where the cars have a horrible appearance and are rusty for lack of paint. The operators are careful about having the carhouses, where the cars remain for 6 hours at night, nicely painted, but they will allow the cars, which are out on the street for 18 hours a day, go without any paint. Remember that it is just as important, if not more so, to keep the cars painted as it is to see that the carhouses are in good condition and painted.

To me, there was only one man in the United States who really ever understood the question of transportation, and that was George Pullman. When he conceived that wonderful thing that we now enjoy, known as a sleeping car, and took it to New York to peddle it, he was buffeted from one sidewalk to the other, and he was confronted with the statement by the people who had money that it wouldn't do, and that it would increase the cost of transportation. And to that, George Pullman had just one reply, and that one reply was that the people did not want cheap transportation, they wanted better transportation!

You can't make transportation too good. The better you make it the more car riders you will see, and the worse you make it the fewer car riders you will sell. Now, you have got to understand that you are merchants, that you are selling something that people must have, and that people are eager to buy if you will merely deliver the stuff that they want.

You are disturbed about the automobile. Now, I am not disturbed about the automobile. I think the privately owned automobile has been a boon to this industry. The private automobile, to the extent that it brings people down in the morning and takes them home in the evening, during the rush hours, is a benefit to you because it relieves you of part of the peak which is the unprofitable end of your business. Of course, at one time it was believed that that was the profitable end. You know, they used to write franchises which stipulated that people should be carried for so much a ride, but when the hour of heaviest peak came, then the charge was reduced, when it cost most. Now the privately owned machine is not hurting you, and when you realize in your cities that every fourth or fifth person is the owner of a machine, don't get into the frame of mind of thinking that he is going to hurt you, because he is not. And when you see 20,000 and 30,000 and 40,000 machines on the highway going this way and that, don't figure that is a loss to your business, because it is not. Don't assume for a moment that when a man has taken a pleasure ride in the car that he would be on the street car if he wasn't in the automobile, because he wouldn't.

The automobile has merely made it possible for people to take more rides that they wouldn't take if they had to use a street car. It is not a loss of business to you. Then, of course, after that comes the bus, which now is agitating this industry. I don't know what the bus can do, and neither do you. It is something new, and there isn't anything yet by which we can gauge it. All that we can say about it

*Abstract of a paper presented at the Midyear Meeting of the American Electric Railway Association, Washington, D. C., Feb. 17, 1925.

is that the bus is an economic factor and that if you can transport people on rubber tires for less than you can move them on steel wheels on steel rails, the bus will supplant the street car, and nothing can prevent it.

However, I don't think that time ever will come. I know that there isn't anything in this world that is so frictionless as a street car, a steel wheel on a steel rail. I know that there are car bodies in this country that have been on wheels for 35 years. I know that no bus body will remain on wheels for 35 years, even if you carry three mechanics on every trip. I know that there are motors operating on trucks and under street cars in this country that have been obsolete for 20 years, but they are still turning around.

And I know that there isn't an internal combustion engine made, or that ever will be made, that will run 35 years!

I know that I can take a pinch-bar and move a gondola with 80,000 lb. of coal; that tells me that there isn't anything as cheap as steel to steel. So I don't subscribe to the theory that seems now to be running rampant among this fraternity, that the day of the street car has passed and the day of the automobile is here, because it is not. The automobile or the bus can be used, of course. There is a place for it as well as for the street car, but it will never supplant the street car in the cities of this country, and it shouldn't, and it won't, unless it can do it cheaper—and only time will be able to demonstrate that to us.

so that the carriers were enabled to raise the intrastate rates to the level of the interstate—and like relief may be granted in other cases where a like situation is presented.

Street and interurban electric lines have been suffering under two handicaps—the nickel and the jitney. The 5-cent fare was originally a part of your charter or your contract rights. Being incorporated in a charter or in a contract made with the Council, it was considered as immutable as the law of the Medes and the Persians, and for a long time, notwithstanding your presentation of increased costs of labor and materials, the 5-cent fare remained a constant.

You ought to increase the fare—and I have noticed in the address made by your president that the average fare now has attained something in excess of 7 cents. The nickel was considered as a sacred number, but I take it that 7 is more sacred because you will find it justified in Holy Writ.

Jitney competition, which was so severe a few years ago, is in a way resolving itself because you are laying your cards upon the table before common councils, your patronizing public, and the regulatory bodies; you are meeting them across the table, and to the degree in which you manifest frankness in every detail can you expect relief.

I am glad to note that the situation of electric lines is better than it has been in prior years; far better than it was during the war, during 1919, during 1920, during 1921, and even a part of 1922. Reading your proceedings in 1921, I noticed there was a tone of pessimism throughout the addresses and there was also in the statistics offered; but I think you have seen that the sun is shining through a gap in the range and that the slough of your despondency is now being brightened by the full sunlight. At least, I sincerely hope that that is being realized.

It would be my suggestion that you continue your plan of advertising what you have to sell, of taking the public into your confidence, of increasing your public relations to a point where there be mutual confidence between yourselves, the patronizing public, and the regulatory bodies. By doing that, there will be a better feeling between yourself and your employees. You have a right to tell the patronizing public that they owe you something; you have a right to tell them that by reason of these electric lines it has been made possible to relieve the congestion of the great cities and to give the man of moderate means a chance of buying a home out in the open spaces where he can raise his family at a reasonable cost. You have a right to tell the manufacturer and the merchant that because of your lines and your facilities you are bringing customers to their very doors. These are legitimate methods of advertising, and you have the full right of going to the uttermost limit in presenting your views to this public.

You have a right also to try to secure ownership in your securities, on the part of your employees and the patronizing public. Have you noticed the result of an experiment tried by

Transportation Acts and the Electric Railways

By John J. Esch

Member Interstate Commerce Commission

Despite Original Franchise Provision a Fare Higher than 5 Cents Is Now Deserved—Legitimate Advertising Will Improve Public Relations—Stock Ownership by Employees and the Public Gives Them a Stake in the Success of the Property

WITH reference to the immediate interests of the electric railway industry I might say that the original interstate commerce act in defining a common carrier declared that it was engaged in the transportation of persons or property by railroad. There is no distinction made in Section 1 of the original interstate commerce act as between the steam and the electric line, and ever since Frank Sprague of New York developed the practical trolley at Richmond, in 1888, electric interurban lines engaged in interstate commerce have been subject to the jurisdiction of the Interstate Commerce Commission. In numerous cases we have passed upon your rates and fares and charges, and they have gone to the Supreme Court and the jurisdiction of the commission has been sustained.

In the transportation act of 1920 there has been an exception made with reference to street, urban or interurban and electric lines which are not a part of a general system of steam railroad transportation. I remember distinctly that your people were not of one mind as to the scope of the proposed legislation. There were some of you who believed that you should come under the full provisions; others were opposed to such a proposition. Some were willing to come under title 3, the labor provisions; others were opposed thereto. With this contrariety of views, the committees of Congress formulated the



JOHN J. ESCH

transportation act as it is today. Each individual case, therefore, will have to be determined upon its own merits.

On Jan. 5 the Supreme Court of the United States handed down a very interesting decision with reference to two Ohio traction companies. The city of Wellsville and the village of Hebron brought action. The interurban lines supplying this city and this village also connected with cities in Pennsylvania and in West Virginia, thus making them interstate common carriers. The common carrier had an interstate level of rates. The intrastate rates were lower. It sought to have the intrastate level of rates raised to the level of the interstate. The commission granted the relief. This city and the village took the case to the Supreme Court, and that court affirmed the decision of the Interstate Commerce Commission,

*Abstract of a portion of a paper presented at the Midyear Meeting of the American Electric Railway Association, Washington, D. C., Feb. 17, 1925.

the New York Central last week? It put out 35,000 shares of its stock, par value \$100; first chance of purchase by employees. There were over 42,000 applicants for the stock. The company doubled the amount of the stock that could be subscribed, and the company today has 42,000 more stockholders

than it had two weeks ago, and it has disposed of \$6,800,000 in stock at par. What is the significance of that? It means that 42,000, practically one-fourth of the employees of the New York Central System, now have a financial stake in the success of that great railroad.

on streets and bridges and for the cost of regulating traffic. The cities and towns are not permitted to levy a franchise tax as such. The only taxes assessed against such carriers are the taxes applicable to any business and property, the federal bus tax and the state auto license fee.

The only regulation of the service is that imposed by local sheriffs or police in respect to observance of rules of the road, speed ordinances and the like. The meager protection of the public against the operation of more or less irresponsible buses or common jitneys embodied in the requirement of the filing of bond, as described, was enacted only after one city in this state became infested with as many as 1,500 jitneys at one time and where the jitneys in some of the smaller cities practically ruined the street railway business. The cost of insurance coupled with the war activity, higher cost of automobiles and their operation, and the general and substantial advance in wages operated practically to eliminate the old fashioned 5-cent jitney or even the converted touring car operating at a 10-cent-fare.

In this situation and subsequent to the enactment of the bonded carrier or so-called jitney law, buses first made their appearance as a medium for extending interurban railway service to points beyond rail heads. These buses were first operated by individuals but were shortly taken over by the railway and operated in its own name. The small patronage enjoyed by these buses, the low earnings and the comparatively high expenses per bus-mile gave the railway officials the impression that buses were not likely to become extremely popular. These initial operations, however, were undertaken over gravel surfaced highways and with bus equipment not in any way comparable to later equipment in respect to comfort or attractiveness to passengers.

As soon as the first 36-mile stretch of concrete road paralleling one of the interurban railway lines was completed, a fleet of, at that time, relatively high-class buses was imported from a bus operating organization which had achieved a considerable measure of success in its operations between neighboring cities in a near-by state. These buses were operated by experienced bus men and the organization appeared to have a considerable measure of responsibility. As additional roads were completed, paralleling the interurban lines, these people experimented with different routes until they located their equipment on routes which would yield the largest revenues per bus-mile. It early became apparent that buses of this character operating on concrete or other hard, smooth-surfaced roads were taking away an appreciable amount of traffic from the railway.

COMPETITION COULD NOT BE IGNORED

The railway management early concluded that it could not afford to ignore the possibilities of such bus operation, particularly under these circumstances of total lack of protection by state laws or municipal ordinances, its obligation to operate regularly and safely at fixed rates of fare and the charac-

One Railway's Experience with Buses*

By S. B. Way

Vice-President and General Manager
Milwaukee Electric Railway & Light Company

Where, When and How They Should Be Employed — The Results Obtained by This Company Show that It Is Essential to Use the Best of Equipment and to Be First to Render the Service—Principles Found to Be Successful Are Enumerated

THE answer to the question "When, where and how should motor buses be used by electric railways?" can, from the experience of at least some of us, be compressed into a few words, namely: Anticipate demands and opportunities for bus service; be first to render such service; employ only the best equipment and personnel. Analysis of a particular situation will illustrate the point.

Take the case of an electric railway system operating something like 230 miles of city track and 260 miles of track in suburban and interurban service. The city tracks are practically all in paved streets. The suburban and interurban lines are largely on private right-of-way. This railway system serves a total population of about 800,000. The interurban cars reach the centers of the principal cities over tracks used also for local street railway service. The suburban and interurban lines are in every instance directly or closely paralleled by concrete or other hard-surfaced roads, and the area between these lines is in practically all instances further supplemented by similar hard surface roads. These hard surface roads extend to practically all towns within a radius of 100 miles or more from the principal center from which this railway is operated.

NO RESTRICTIONS IN STATE LAWS

The state law is such that any one can go into the bus business either in the city or in the country, or both, upon the mere filing with the Public Utility Commission of a statement of the general route over which such buses are to operate, a proposed general schedule of hours during which service will be rendered and a general statement of the rates of fare to be charged. This statement must be accompanied



S. B. WAY

by an indemnity bond for the payment of damage claims up to the amount of \$2,500 for any one individual and \$5,000 for any one accident.

The Public Utility Commission has substantially no discretion in the matter of approving such applications where accompanied by indemnity bonds. The law especially provides that the fact that the route parallels a street railway system shall not be taken into consideration by the commission in passing upon the adequacy of the application or the bond. After the commission has once discharged its rather perfunctory duty it loses jurisdiction unless notice is given by the bonding company of the cancellation of the bond, whereupon the commission is required to cancel its certificate. The commission has no means whatever of ascertaining whether or not the carrier observes his proposed route or operating schedule or even adheres to his filed rates of fare.

Under the law, cities and towns may require the payment of license fees by buses or so-called bonded carriers, which license fees, however, are limited to amounts reasonably to compensate the cities or towns for wear and tear

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teristic tendency of the public to prefer travel on rubber and soft leather cushions in modern vehicles. The situation was squarely put up as to whether the electric railway should lie down and take a good licking, or whether it should stand up and make an effort to remain the predominant factor in organized transportation service in the district served.

It was quickly recognized that it was impracticable to attempt to retain the business for the electric railway by attempting to compete with modern high-class buses operating on close headway with 15 and 20-year-old railway cars, well maintained to be sure, but nevertheless lacking much in the way of novelty and attractiveness of interior finish that was offered by the buses. It was believed that unrestricted, unregulated and uncorrelated free-for-all bus service, on magnificent hard-surfaced roads and operating substantially tax free, could result in but one thing—the destruction of the railway and the complete disintegration of organized and responsible transportation service.

MEETING COMPETITION WITH BUSES

There appeared to be but one course left open to the railway management, namely, that of meeting bus competition with buses. The railway proceeded according to its best judgment, procured buses which it believed were best adapted to meet the situation which confronted it and launched into the bus business. It started out with an announced policy of recognizing that a change in transportation methods had occurred, and that it was prepared and proposed to give the public the best transportation service of whatever character the public wanted and at the lowest consistent cost. The railway made numerous grievous errors in the initial selection of its equipment and rapidly awoke to the fact that time-honored ideas and prejudices of electric railway men could not be successfully grafted onto the bus business.

Bus companies multiplied in the district and the railway company was kept extremely busy keeping up not only with the rapid development of bus lines as fast as new highways were completed and opened, but also in keeping up with the rapidly changing styles in buses. Each new competing bus organization brought out a type of bus which it believed would be most attractive to the public and which would gain for it the lion's share of the patronage. The railway company utilized its inherent advantages of established credit and superior purchasing power and its experience in respect to standardized methods and training of personnel, all with the result that it rapidly acquired fleets of different types of buses, each carefully selected with respect to the particular class of service to be rendered. In each case the equipment was made the most attractive that could be devised with reasonable regard for practicability in operation.

This policy began to tell, and within a year from the time competition was first encountered in parallel bus operation, the first competing organization sued for peace and sold its equipment to the railway on the basis of the de-

preciated value of the equipment and with no allowance for going value, good will or the like. Numerous other competing organizations operating buses of various types have found the railway competition too severe, not from the standpoint of cutting rates, but from the standpoint of absolutely reliable, courteous and safe service in vehicles of the highest possible standard, with the result that they have one after another likewise sued for peace. The refusal of the railway to pay tribute to get rid of troublesome competition has, it is believed, deterred many bus men from entering the field.

MAKING BUS SERVICE PAY ITS COST

In the meantime the railway has been able to operate its interurban bus service on a basis of recovering the full cost of operation, including depreciation, and with a substantial contribution toward a full reasonable return. It has not been able entirely to eliminate destructive competition as yet.

The latest development in such competition has been the utilization of high-class seven-passenger sedan cars, on which license fees and taxes are very light, which operate at extremely high speed and which offer the public carriage in what amounts to a private limousine. Careful study of this type of competition reveals the surprising fact that such buses can exist on revenues as low as 12 to 14 cents per bus-mile. This surprisingly low cost of operation is accounted for by the fact that buses of this type are quickly loaded and the loading is accomplished with few stops. When the buses are once loaded, they run practically without stops and at high speed from one terminal to the other. The high speed reduces the element of driver's wages per bus-mile and does not materially increase maintenance or other operating costs per bus-mile. Such cars are available at less than \$2,000 each, and even in relatively hard service can be operated so as to keep the factor of depreciation down to about 1 cent per bus-mile.

Experience is demonstrating that this character of competition can hardly be successfully met by any of the conventional types of 15 to 30-passenger machines, and that where such competition exists the railway or other organized and responsible transportation agency must employ its purchasing power, operating organization and its best experience to meet the demands of the public in developing a high-speed small car service which the public will prefer to that offered by competitors.

While this intensive development was going on in the railway company's interurban and suburban territory, the operators of a bus line in another city connecting depots with a department store conceived the idea of procuring a so-called franchise for the operation of buses paralleling certain of the company's best city railway lines. Notwithstanding the law was fairly clear to the effect that cities could not give any franchise for the operation of buses, but could impose on bonded carriers procuring certificates from the public utility commission reasonable license fees to compensate for wear

and tear on streets and bridges and for the cost of regulating traffic, these parties caused to be introduced into the city council an ordinance authorizing the exclusive operation of a line of buses and proposing to pay the city a license fee of \$100 per bus. Prior to the filing of this application for a so-called franchise the railway company had anticipated that some one was likely to begin the operation of buses paralleling its best street railway lines. Demonstrated popularity of the interurban buses could lead to no other conclusion.

Considerably in advance of any talk whatever of the inauguration of local city bus service, the company accordingly placed an order for what were at that time the highest types of single and double-deck buses available in this country. In advance of the actual receipt of these buses, the company had filed its application with the public service commission for the necessary bonded carriers' certificates. Upon filing the application by these outside parties for the so-called franchise in the city, the company, with the cooperation of the manufacturer in hastening deliveries, immediately inaugurated service. Through a period of a year and a half the railway company continued and constantly improved its local operation in spite of many attempts to harass it.

EXTENDING CITY RAIL LINES

In the meantime, the company had not overlooked the places in its city transportation system where service was required but where the volume of traffic could not by any stretch of the imagination begin to justify the heavy initial outlay required for the construction of tracks, paving and other accessories of a street railway. These lines were generally in the outskirts and the locations were not in any way attractive to independent bus operators. In these situations, the company installed high-class bus service at railway rates of fare and exchanged transfers with the cars. These local city bus lines were at first operated at a net loss represented by the total cost of operating the buses, because in the beginning they did not produce any appreciable increased riding over what would have come to the railway without the buses. However, by keeping the bus equipment strictly high class and operating on regular schedules, good weather and bad, and practically independent of the quantity of snow, the public began to increase its patronage to the point that these lines can as a whole now be said to be at least entirely self-supporting in respect to the full cost of bus operation, exclusive of return. The surplus over and above this expense is making some appreciable contribution toward return. The main return from these buses, however, is in the improved position which the company occupies in the community, which is reflected by better patronage of its transportation system as a whole than would have been the case otherwise, and in the final conclusion of the city itself that it could not afford to invite outside bus operators to jeopardize the highly organized and complete local system of transportation.

In attempting to fulfill its mission of rendering a complete and properly correlated railway and bus transportation system, this railway has found it necessary and expedient to operate something over 750 miles of interurban bus route and close to 50 miles of city bus route. The operation of these several bus services requires 132 buses of all types. The number is yearly increasing.

PRINCIPLES FOUND SUCCESSFUL

The experience here briefly sketched has led the management to the following conclusions:

That the time to operate buses is before the other fellow gets the jump on the job.

That the place is wherever buses can render a useful service on a self-sustaining basis, whether necessarily correlated with the railway system or not.

That bus service should be inaugurated wherever the so-called independent operators attempt to horn in on the railway company's transportation business without being willing to assume all of the responsibilities and burdens which the railway organization must assume and carry.

That to render satisfactory and profitable service to the railways the buses must be of at least as high class as individual or so-called independent operators could or would procure.

That buses must be operated by a carefully trained and especially selected and supervised personnel.

This experience has also taught that where the buses are operated as a part of the railway system, i.e., at railway rates of fare and exchanging transfers with the railway, it is desirable that the buses be operated under the supervision of the railway transportation department; that they be painted the car colors, that the men wear the railway uniforms and that everything else possible be done to identify closely the bus with the railway system.

Where, however, the buses are operated as a competing or auxiliary service rather than as a part of the railway, it is desirable to paint equipment distinctive colors and even to distinguish special classes of equipment by different colors, as, for instance, parlor cars from regular cars. Such operation cannot well be handled by the regular railway supervisory force, and best results are secured from the organization of a bus transportation department in charge of a superintendent carefully selected for his adaptability to this service.

ENGAGEMENT OF OPERATORS

The value of special care in the selection and training of bus operators cannot be overstressed. It is interesting to observe that it is possible, through the observance of such a plan, to operate buses over a period of several years and many hundred thousand miles of service, with lower average costs for injuries and damages expressed as a per cent of operating revenue than are experienced in the same situation in a railway, where the same care is used in the selection and training of railway platform men and otherwise in promoting safe and satisfactory railway service.

Manufacturer's Contribution to the Electric Railway*

By John G. Barry

Vice-President General Electric Company

Many Technical Gains in Last Few Years Have Added to Earning Power of the Railways—Means by Which Operating Companies Can Help the Manufacturer Are Standardization, Anticipation of Requirements and Correct Shipping Dates



JOHN G. BARRY

IN A recent message to our stockholders the president of the General Electric Company said, in effect, that the problem of a manufacturing corporation is threefold, and that its accomplishments must be measured from three points of view: (1) Service to the public; (2) to the employees, and (3) to the stockholders. The first consideration is "service to the public," and it seems to me that if we render efficient service to the public, both employees and stockholders will benefit. We feel that the manufacturers have rendered valuable service to railway companies, and while it has not been all that we would like it to be or that we hope to make it, nevertheless it has been of distinct benefit. From an engineering viewpoint manufacturers are prepared to have their engineers study your problems. In the manufacturing end we endeavor to carry stocks of the more popular types and sizes of apparatus and so to equip our plants that reasonably early shipments can be offered on apparatus not carried in stock.

In addition, electrical engineers have made contributions, such as the introduction of the automatically controlled substation and the light-weight motor and control equipment for light-weight cars, which have improved the service to the public and reduced the expenses and increased the revenues of operating companies.

There has been marked improvement accomplished in the design and efficiency of generating apparatus. I quote from a statement issued Jan. 15 to

*Abstract of a paper presented at the Midyear Meeting of the American Electric Railway Association, Washington, D. C., Feb. 17, 1925.

stockholders of the General Electric Company:

Twenty years ago the efficiency of conversion of the energy of coal to electricity was a little over 10 per cent. Since that time the efficiency of the turbo-generator has been greatly improved, much larger units have been introduced, higher degrees of steam pressure and superheat with better auxiliary conditions have been adopted, so that we now realize an efficiency of conversion of approximately 19 per cent, an increase of about 90 per cent. We now seek to gain a kilowatt of energy from a pound of good steaming coal, which means an efficiency of 24½ per cent in the conversion of coal to electric power. Looking forward to the introduction of the mercury boiler and turbine, it is expected that these will further increase the efficiency of this conversion to 33 per cent, or more than three times as much as 20 years ago. What this means to the industry, and more particularly to the public as a whole, may be gathered from the following. In 1919 the average of the electric central stations throughout the United States was 3.2 lb. of coal to produce a kilowatt of energy. In 1923 the efficiency of the turbines and other apparatus in use in central stations had been so increased that the average was 2.4 lb. per kilowatt of energy, an improvement of 25 per cent. This is equivalent to a saving of 15,000,000 tons of coal per year, or \$50,000,000 in the cost of coal alone, not taking into consideration the attendant advantages that this saving implies in the mining, transportation and handling of coal—as well as the capital required for these operations.

There has been a similar, but not so pronounced, improvement in substation apparatus and car equipment.

Manufacturers do not claim that in making these contributions they have been actuated solely by altruistic motives, for with no one is the truth of the Rotary slogan "He profits most who serves best" truer than with the manufacturer. However, in order that we may "serve best" and that both operators and manufacturers may profit, it is essential that we receive the co-operation of operating companies, and I wish to suggest one or two means by which such companies can render effective assistance.

HOW OPERATING COMPANIES CAN HELP

First, adopt as far as possible the standards of manufacturing companies. We believe they have standard apparatus that will be applicable to practically any condition of service, and it is hoped that railway companies will accept such standards, even though they may not embody all detailed features which may be desired by individual companies. Perhaps many do not realize the importance of this or the relatively large increase in expense and delay involved in what may appear a minor change from standards. Detailed engineering instructions must be prepared, drawings changed and frequently

new patterns or dies made, with consequent increases in cost and in time for producing such apparatus. We believe that the large number of different types, sizes and varieties of cars, trucks and electrical equipment now desired by operating companies could be substantially reduced if careful study were given to standardization of such apparatus, thereby allowing manufacture on a quantity basis, and by so doing that manufacturing costs and selling prices would be materially reduced.

The operating company can help the manufacturer by anticipating as far as possible his requirements, not only as regards new apparatus, but also supplying materials.

Another method in which railway companies can help not only the manufacturer but also other railways is by

not specifying shipments materially in advance of actual requirements. It is not unusual for us to be advised that certain dates of shipment are required and then, after the apparatus is completed, to receive a statement from the customer to the effect that they were not yet ready to receive it and asking that it be held. Had we been advised earlier that this material would not be required on dates originally specified, it would have permitted us to concentrate our efforts on apparatus which was urgently needed and thereby relieve some other customer of a very trying situation.

The manufacturers are not only willing but anxious to do their part, and I believe that if we all pull together we can expect and deserve a continuance of the improvement which the railway industry has shown recently.

Relation Between Automotive and Electric Railway Industries*

By *T. R. Dahl*

Secretary the White Company, Cleveland, Ohio
Representing National Automobile Chamber of Commerce

Standardization of Design and Excessive Size of Buses Should Be Avoided—Co-operation of Railway with Motor Vehicle Associations Will Give Excellent Access to Public Opinion

THERE is no doubt of the bonafide operation of buses by electric railways today. In the past there has been a strong suspicion among bus operators that electric railways began bus operations for the purpose of killing that kind of public passenger transportation, having accomplished which they would again furnish only transportation by rail. They suspected that the railways put "trick" in "electric" as a warning to competitors. Present operations by electric railways have effectively removed that suspicion.

Certain conclusions as to the use of the bus can admittedly be accepted, for the present at least, as major premises. First, buses are no longer considered as a passing phase of public fancy. They are here to stay. Second, buses cannot supplant electric railways in handling peak loads in congested districts in large cities. The use of the bus by railways is, therefore, a question of determining the proper place for each service.

It is generally admitted that buses should be operated as extensions of car lines in extending service into new territories where the traffic does not justify the necessary capital expenditure for rails and power. This economic condition exists very generally, as the cost of existing trolley lines is often four and sometimes five times the amount of annual gross revenue, and this means that if 6 per cent is considered a fair return, 24 per cent of the annual gross income must be set aside

to pay interest and dividends on invested capital alone. Buses should be used as feeders to the electric railway lines.

Urban population in the United States is increasing much faster than that of the country as a whole. New building developments are rife in all live cities, and as homes go up in the outskirts of the city, transportation facilities must be provided to serve them. The high cost of construction and maintenance of street railways makes it impossible to extend them into such outlying districts except under exceptionally favorable circumstances. The solution in such cases lies in the bus.

In a number of cities the electric railways themselves have replaced certain lines and in other cities replaced their entire systems with motor buses. This has been particularly true where an extensive paving program by the city has loaded an entirely unjustifiable charge upon the electric railway. Rather than capitalize that additional investment buses have been placed in service, replacing the street car.

The history of city public utilities consistently proves them monopolies. One has but to recall several street car lines, electric light companies, gas and telephone companies operating in the same city. They have been universally unsuccessful until combined and operated as a monopoly. The transportation problem of a city is as much a monopoly as the water, fire and police departments of that city. Transportation being a monopoly, the electric railway, as the established responsible and experienced carrier of pas-

sengers, should undertake to furnish all passenger transportation in its community.

DON'T STANDARDIZE THE BUS BODY TO LOOK LIKE A CAR

You are no longer selling 5-cent car rides. You are purveyors of transportation. The riding public is appreciating to a greater extent than ever that it must pay a fare commensurate with service. It is willing and anxious to pay higher rates of fare to ride in buses. Do not jeopardize that earning capacity of your buses by too great a standardization of bodies, either as to form or appearance. Give no suggestion to the bus rider by standardizing the bus body to look like a street car that he should only pay a street car fare. The bus is regarded by the rider as a Pullman service for which he is willing to pay a Pullman charge. Do not take a chance of giving that rider a day coach impression, for as surely as you do he will demand a day coach rate.

In the operation of bus lines it should be continually borne in mind that your best prospective customer is the automobile owner. I do not know of any better way of antagonizing him than by forcing him off the pavement or frightening him by a bus which at least appears to be nearly as wide as the pavement itself. Manufacturers of buses engaged in competitive selling must pretty much give the purchaser what he wants. Consequently the initiative in keeping bus widths within limits must come from you. The danger is not limited to losing customers, but even more important is the danger of punitive legislation limiting widths to an extent that will interfere with economic operation through limited seating capacity.

SOME ADVANTAGES OF LIMITING BUS DIMENSIONS

This is no mere chimera. Some states have already limited by law permissible widths of buses below 90 in. The only manner in which to avoid the swinging of the pendulum from the present liberality in width limitation to stringent and unreasonable width regulation is by voluntarily limiting your bus body widths to conform to 18-ft. pavement limitations, as the 18-ft. pavement has been adopted as standard by the Bureau of Public Roads of the United States Department of Agriculture and applies to all federal aid projects.

This is true also of lengths of buses. A bus that requires the entire width of the street intersection in order to turn the corner not only violates every principle of traffic safety but antagonizes motorists who are held up and must get out of the way for that operation.

The Motor Vehicle Manufacturers Association and your association during the past year, through the work of representative committees, have agreed on all fundamental principles of law that should control motor bus operation. It is no longer open to argument that bus operations should be regulated as public utilities by state commissions in the same manner that electric railways are now regulated. We may still have some differences of opinion on such questions as the method of taxing

*Abstract of a paper presented at the Midyear Meeting of the American Electric Railway Association, Washington, D. C., Feb. 16, 1925.

the motor vehicle; but the present day extensive operation of buses by electric railways makes it essential that our attitude toward such questions should be one of co-operation.

The bus says it is overburdened by special taxes. The electric railway makes the same claim. We entirely subscribe to your claim that you should not be burdened with paving charges for two reasons. First, it is an anachronism, and second, the charge is a direct charge on the street car rider—the public. There is only one source from which relief from such charges can come, and that is public opinion.

Co-operation with motor vehicle associations will give you the greatest access to public opinion that there is in this country. Would you not admit that if you could reach every telephone subscriber in the United States that you would have access to an overpowering public opinion? Remarkable as it sounds, there are more motor vehicles in this country than there are telephones. That co-operation is offered you, but it cannot be one-sided. You also must appreciate that taxes levied on motor buses are a direct charge against the bus rider, and therefore our co-operative effort must be directed in reducing special taxes and charges levied on both the motor bus and the electric railway for the benefit of our customers who must bear this charge.

We as bus manufacturers have every desire to co-operate with you in another respect. You are our customers. We desire to sell you buses. Having sold you equipment we will not indirectly enter into competition with you by financing competitors' equipment. We do not believe it good business ethics to finance companies operating in competition with our customers, either through stock ownership or by time sales that are a mere subterfuge. In a competitive business where time sales are common and expected we, of course, are compelled to sell equipment on deferred payment plans. We have adopted a plan limiting both the minimum cash required and the maximum of time granted and we will live up to that plan. I am, of course, speaking for the National Automobile Chamber of Commerce, and I expect from your own experience you appreciate that there are "die-hards" in every association who do not live up to the principles agreed upon by their national organization. The best we can say for them is that with your help we will try to show them the error of their ways.

There is one more phase of co-operation that will have an important effect on how buses should be used by electric railways, and that is a national bus association. The American Automobile Association is offering to bus operators throughout the country its facilities as a going users' organization in forming a bus group and affiliating that group with the A. A. A. Independent operators have formed an organization committee to work out a national association of bus operators. Your association has a committee for the purpose of considering some kind of bus group or organization. Three such independent organizations would be fatal to legislative activities and the establishment of policies which the entire automotive

industry could support. Haven't we had enough of divided and therefore dissipated efforts? Have we not found in our dealings with each other that when personal misunderstandings have been removed by personal contacts our competitors are, after all, business men with pretty much the same ideas as our own? Are we not big enough, broad enough and have we not had sufficient experience with the national organizations to appreciate that now, before these various organizations are

formed, all representing pretty much the same business, that we should bring together the representatives of these three proposed national organizations of bus operators in an attempt to work out a plan for one national association, with fair representation for each type of bus operator that can successfully represent this great business? To accomplish this purpose the National Automobile Chamber of Commerce again offers you its wholehearted co-operation.

Opportunity and Responsibility of the Railway Executive*

By G. E. Hamilton

President Capital Traction Company, Washington, D. C.

The American Association Has Helped in Removing Difficulties in the Past—It Should Be of Even Greater Assistance to the Industry in the Future with Its New Organization Perfected



G. E. HAMILTON

THE electric railway with its allied industries has become one of the prime factors in the business and commercial life of our country. It enters into and carries forward urban and suburban growth and development. It promotes business and social intercourse, it populates towns and links city with city in the chain of commercial progress. It gives comfortable and convenient transportation to all. In it are invested billions of the people's money. It constitutes, in the aggregate, one of the largest purchasing powers in the country. It is, in very truth, a vital artery in the body politic and business life of the nation, and for its preservation and future advancement in usefulness and service it requires, on the part of its executives and executive boards, wise, prudent and honest direction within the law; on the part of the public a fuller understanding and closer co-operation, and on the part of the government, sound legislative policies and regulation that is constructive and not destructive.

This industry has grown to its present status of useful greatness by slow

degrees and through difficulties and dangers met and overcome. At one time consisting of unrelated units, small and experimental, scattered over the face of the country, unregulated and operated as private enterprises, lacking often in sufficient capital and inspiring popular prejudice rather than confidence and support, the industry, because of its own mistakes and faults, perhaps, because of popular distrust and of legislative disfavor, was confronted with difficulties and dangers that threatened to destroy it.

At this crucial time, when the clouds were darkest and disaster seemed at hand, the American Electric Railway Association, with a vision broadened and made clear by its long, patient and comprehensive study of street railway management and relations, brought to the companies the counsel and confidence, the initiation and courage needed to meet and overcome the adverse conditions existing, to re-order their broken and faulty lines in policy and direction, and to lay the foundation of successful accomplishment.

Widely separated entities were brought together for conformity in policies, for improvement in operation and for mutual aid and protection through organization.

We have been taught the true meaning and purpose of a public service corporation; a fairer conception of our relations to employees; a fuller recognition of the rights of the people; a realization that reasonable regulation, rightly applied, is strength to the industry. The benefits that have come to us through membership in the association, especially during the last 10 or 15 years, cannot be fully measured or overestimated. It may confidently be expected that this success will be even greater with Mr. Storrs as managing director.

We have grown, and are growing, in the confidence of the people, of regulatory boards and legislative bodies,

*Abstract of an address at the Mid-year Dinner of the American Electric Railway Association, Washington, D. C., Feb. 17, 1925.

and this growth will continue and increase so long as we continue to recognize the rights of the people; to safeguard our stock and security holders, and to live within the law.

Let us then, knowing our duty and seeing our opportunity, endeavor to

meet the responsibilities that come to us; let us sustain and strengthen the guiding hand of the American Electric Railway Association, to the end that we may better serve the people and the interests that are committed to our keeping

Both Buses and Cars Are Needed*

By Guy E. Tripp

Chairman Westinghouse Electric & Manufacturing Company

Maximum Transportation Efficiency Will Be Obtained by
Co-ordinating the Two—Buses Should Provide Special Service
at a Higher Fare—Trolleys Are Essential for Heavy Traffic

THE kinds of service offered by buses and by trolley cars are quite different. Buses are especially adapted to de luxe service in cities and to serving suburban regions where it does not pay to install trolley systems. Their operating cost is relatively high. On the other hand, nothing has yet appeared which equals the trolley car for serving great numbers of people at a low cost.

Local railway systems, or parts of systems, which furnish high-speed transportation by means of subways or elevated tracks hold, and probably will continue to hold, their places as natural monopolies. This is rapid transit of a character which is not open to competition from any radically different form of transportation and whose financial difficulties are susceptible of cure by the simple means of raising the fare charged. If such lines are not permitted to charge a rate which will support them, it is a form of confiscation, whatever may be their contractual obligations. No one else can operate them any better or cheaper than do the present owners, and if operation is undertaken by the people, the people must pay the deficit themselves.

Nothing can be gained for anybody by seizure under the law, because any loss to present security holders is sure to be included in the higher cost of new money in the future. In other words, so long as the physical properties exist and are a public necessity the public cannot escape from paying for the cost of construction and operation of them quite regardless of who owns certain pieces of paper.

Therefore, while the rapid transit problem is serious, the proper solution of it is simple, viz., a rate of fare which is sufficient to preserve good service. Now I approach more difficult ground. Your industry is confronted with the serious competition of automobile buses and that competition is of a character that cannot be met wholly by the simple remedy of raising fares.

In some localities there is actually a

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GUY E. TRIPP

decrease in the number of car riders, and an increase in fare might in some cases accentuate this trouble. Therefore, this new problem of competition is in general a much wider one than the mere rate of fare.

I have called it a new problem of competition, but I would not have you infer that it is an unprecedented one, or that it is the first occasion when a public service, enjoying a natural monopoly, has been confronted with a rival service having quite different characteristics. Some of these rivals have been successful and some have been written off the books. The electric light and power industry threatened to drive the gas business into remote regions, but so far with a conspicuous lack of success. Another, the very recent wireless communication business, has also been a remarkably successful enterprise, but has completely failed to ruin the wire and cable lines. These successful ones, and in fact all successful ones, can only be successful in this day and generation if founded upon fair competition.

You would have an easy and profitable time with the automobile bus competition if it were unfair competition, because the law provides for treble damages in such cases. But is it unfair competition? It is obvious that unfair competition cannot be defined by metes and bounds which can be ap-

plied to all cases, but the principles have been laid down by Professor Stevens of Columbia University and the publication of his treatise while the Federal Trade Commission act was under discussion in Congress undoubtedly had a profound influence upon the legislation. He lays down the following standard:

Fair competition in an economic sense signifies a competition of *economic or productive efficiency*. On economic grounds an organization is entitled to remain in business so long and only so long as its production and selling costs enable it to hold its own in a free and open market. . . . Unfortunately, competition is not always conducted under such conditions of equal opportunity in a free and open market. Productive and selling efficiency alone do not always permit an organization to survive owing to the introduction of methods and practice which destroy the freedom of the market, which hamper the production or selling efficiency of other units and which prevent efficient potential rivals from becoming actual rivals. Such artificial restrictions are clearly unfair, since they hinder or prevent other organizations from competing to the extent *which their productive and selling efficiency may warrant*. If there be a sound basis for competition it lies in the preservation of the economically efficient and the destruction of the inefficient. *It follows that methods which destroy the efficient along with the inefficient are economically unjustifiable and must be regarded as unfair.* . . . In many cases unfairness can not be determined except with reference to the consequence of a given act. The definition of unfair competition therefore should be general in terms. *Any act or method of competition which hampers, injures or destroys concerns which could compete on the basis of their productive and selling efficiency should be forbidden, as should also any method except productive and selling efficiency which prevents potential competitors from becoming actual competitors.*

Measured by these principles, it appears probable that you are not being attacked by unfair competition; and if this be so, then you are reduced to the process of painstaking comparisons between services rendered if you are to form judgment as to whether this new form of transportation will supplant or supplement the street railway or will itself pass into the shadows of unsuccessful business ventures.

The buses claim, among other things, greater comfort, high speed and public preference for their vehicles. Comfort is becoming a greater and greater factor in our daily lives. Steam heat and electric lights are by no means indispensable, but comfort demands them as it does a thousand other things, and if the bus ministers to the public good cheer, its adoption will be limited only by other considerations which outweigh the comforts.

What are some of the superior enjoyments offered by the auto bus? First comes the relief from the nervous strain of being compelled to board and alight from a vehicle standing in the middle of the street—a feat which only a very few years ago could be lightly attempted by any one in possession of his five senses, but which today in all our large cities has become an adventure, to all those who have not become hardened to it by constant exposure. Add to this the disagreeable navigation of the space between the sidewalk and the track in bad weather, and you must conclude that it is more comfortable to have your automobile bus drive up to the curb and invite you to step daintily aboard.

Second, comes the enjoyment of rolling noiselessly along upon pneumatic rubber tires with an occasional toot of

the horn, as compared with the roar of metal against metal and the frequent clanging of the gong.

Third, comes the comfortable assurance that you will get a seat because, when the seats are full, no more passengers are taken on. Of course, you must wait for another bus, but you wait in comparative ease on the sidewalk, which is quite different from frequent round trips to the middle of the street in order to ascertain that there is no standing room in a car.

Yes, there is no denying these comforts, but one can get them all by being wheeled to and from his business in a boardwalk chair, and that introduces the other luxury which the public wants to a degree that ought to cause our ancestors to turn over in their graves. Speed is what we all want. This is the "step on the gas" era.

But the bus also claims speed, and I am bound to say that on well-paved city streets I see no reason to dispute the claim. The car is confined to its track, and when blocked not only must stay where it is but it also stops every car behind it, while the bus can meander around the scenery, making headway all the time. It is obviously more flexible in its operations, and it has been my observation that the gasoline motor is a sufficiently speedy contrivance in itself.

Now about the matter of public preference for the vehicles themselves from the standpoint of design. I am not so sure about that. Some of the buses are very beautiful, but a street car could also be made just as beautiful. You cannot tell about a public preference which is based simply upon style. It may be only a caprice, and we human beings are surprisingly fertile in caprice.

Be that as it may, I have granted about all the claims of the automobile bus, and if the case be closed at this point, we might look forward to a time when the street railway company would wrap its track and equipment in its franchise and put the package away in the garret among the spinning wheels and hair trunks.

However, the uncontested affirmative side of a case does not always present the true picture. This emboldens me to ask the bus a question and request a categorical answer.

"You can doubtless serve some of the people all of the time, and all of the people in some places, but can you serve all the people all the time in all places?"

The answer must be "No," and that opens the way for classification, segregation and other forms of dissection, and the important thing to bear in mind is that the thing to be classified is mass transportation—daily and regular moving of the masses of the people from one or more points to one or more other points. Private automobiles and taxis are not included, they are on the same relative plane as the officers' mess in the army, an organization of almost private household simplicity, while mass transportation may be compared to the quartermaster's vast organization, with rigid discipline controlled by inexorable rules and regulations, all of which are necessary if a great army is to be fed at all.

Broadly speaking, the bus gives either a special or a de luxe service which will cost more to operate than the street car and must, therefore, in the long run, charge a higher fare. There will be no difficulty in securing a widespread belief in this statement in view of the astounding fact that every seventh person in the United States owns an automobile. Nevertheless, there will be a demand for this service because the increasing average incomes of the people permit more and more luxuries, and perhaps the principal limitations to the growth of this particular service will be the fixed capacity of the streets and lack of capacity of the bus to handle "rush-hour traffic."

But when the bus has completely occupied its field, there will still remain millions of people to whom a low rate of fare is a necessity, millions who must be served at those most important hours of the day—the rush hours—and nothing has yet appeared to perform this service except the electric car.

Therefore, it seems clear that the people will demand or need both classes of service. There is nothing unique in that. You may today go to New York in a perfectly comfortable day coach, or by paying more you may ride in a parlor car with the luxury of a Nabob.

Such differentiations are easily dealt with when the whole service is rendered by one company, and that is the solu-

tion of the traction difficulty which I have been discussing. The whole transportation service in a locality should be centered in one organization, which can increase or diminish each class of service according to necessity, and should one class temporarily run into the red ink of adversity, its more prosperous partner may be able to support it through to better days.

Hereafter it should be the established policy of our cities and towns that no bus franchise will be granted to any one unless it is an integral part of a comprehensive plan for rendering a complete transportation service to the people, and that can only be successfully done by one transportation company.

When that policy shall have been adopted by the municipalities and when all the street railway companies recognize, as many of them now do, that the problem of furnishing mass transportation to the public is one which it is their duty to solve by the use of any method which the progress of the times and development of the art may demand, then there will be inaugurated a new era in urban transportation, which will make it a profitable business, but, aside from that, beyond the mere profits in dollars and cents there will be the satisfaction to you of being engaged in a work which is vital to the civic development of the future.

Transportation Men Should Run Transportation Systems*

By Matthew C. Brush

President American International Corporation

The Same Fighting Spirit and Determination to Succeed that Are Used to Combat Storms and Mishaps Should Be Directed to Securing a Square Deal for the Electric Railways

I REALLY am on the outside looking in at your wonderful industry, your marvelous accomplishments, the tremendous value of your business to the country and your earnestness of purpose. I cannot help but feel that you yourself at times do not fully capitalize your position. Your industry is only 37 years old, a mere child. I don't admit yet that I am old, and I remember very well indeed in 1889 on Fourth Avenue in Minneapolis when the first electric railway was constructed. I was a kid, but you must realize that this industry has been completely built up within that period. There are many men in this room tonight who have been actively engaged in its creation from the day of its birth.

You went through the toughest, most discouraging, crude, vicious, trying and heart-breaking experiences of any great industry. Times that tried men's souls. You fought, worked, wept, laughed, pulled, pushed, argued and explained,

and did all of those things that apparently are so necessary to accomplish anything that is worth while.

In your pioneering engineering period you showed a marvelous determination to win against terrific odds—some physical, some financial and some political. You thereby necessarily developed a class of help—men who did things, men who became rugged, mentally and physically, men who are fearless because they are honest and who are working in a high and worthy cause to produce beneficial results for mankind, men who know their business and should be justifiably proud of their accomplishments.

Your industry has very properly been lifted out of the position of a football for politics. There were times not long ago when most public utilities were the victims of political expediency and those concerned in their operation and service suffered accordingly. The situation has shown substantial improvement in this regard, but there is still much to be done.

Now the message I want to leave with you is this: Stand up on your

*Abstract of an address at the Mid-year Dinner of the American Electric Railway Association, Washington, D. C., Feb. 17, 1925.

hind legs and throw your chest out and realize and capitalize and carry into your every effort the heritage that is yours by being the creators of the electric railway industry of this country. You have had so many wallops, many of you, that you are inclined to duck when some uninformed or unkindly individual or group takes a crack at you. Don't do it. Your whole endeavor is honorably and efficiently to discharge your multitude of responsibilities, and when you are sure you are right stand up and don't be afraid to assert the justice and the merit of your position. You not only have the right but the duty to carry your responsibilities with your head up.

You are the trustees for the employment of more than 300,000 men, receiving approximately \$500,000,000 yearly. You are the custodian for practically \$6,000,000,000 worth of the people's money. A million and a half people have \$6,000,000,000 in your business!

And you also are equally the consumer of approximately \$150,000,000 worth of manufactured material, and in that respect you are responsible for the employment of those additional men. You called upon the investors last year for about \$300,000,000 for additions, betterments and improvements. You carried approximately 16,000,000,000 people. Now, therefore, you have an army of millions of citizens represented by investors, employees, direct and indirect, by passengers, property owners, and so forth, all of whom are entitled to a square deal not only at your hands but at the hands of those who make the laws and regulations governing your work.

You are directing an essential industry, a public utility that is strictly dependent for its necessary authority to live upon legislative authority, subject to millions of laws, regulations and restrictions, by billions of men, municipal, state and federal, elected and appointed. You are subject to the strictest subserviency of legislative and congressional action, and the advocacy of fair, intelligent, constructive regulatory action cannot be too strongly emphasized. Our form of government, however, is a representative government, those holding governmental power being selected by those governed, and 16,000,000,000 people last year rode on our cars, and they are part of the people that are being governed, and 300,000 men worked for you, and they are part of the people that are being governed.

With such a large percentage of those being governed vitally concerned in just and fair treatment of your industry, are you not negligent and betrayers of your trusteeship if you fail properly, legitimately, intelligently, forcefully to make every effort to select for high places those who by training and ability are qualified to pass upon the problems with which you are constantly confronted and then keep them thoroughly and constantly informed? This tremendous power should function through some well-organized, highly efficient, intelligent, simple organization whereby each of your companies can benefit by the experience of all the rest. I confirm the previous speakers in saying that I know of no man in your industry better quali-

fied to carry out the spirit of what he is undertaking than our good friend "Lu" Storrs.

There are men in this room who were in the horse car business, and when the electric car came along they became electric railway men. Practically every electric railway man in the beginning of your industry, in 1888, '89 and '90, was previously a horse car man. As time went on, the necessity of transportation in your communities developed subways and elevated lines, and the same men who had been in surface car work became



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MATTHEW C. BRUSH

subway and elevated men. No one could possibly have anticipated in the early days of the street car the development that has occurred in subway and elevated transportation in the last 5 or 10 or 15 years.

Now I would like to have you all change your name. I don't like to hear you called street railway men or electric railway men. I like to hear you called transportation men. You have been trained in it, practically all of us here have been in the transportation business directly or indirectly since we were pretty young boys. It is perfectly ridiculous, it is criminal to you, to your heritage and to the community, for men who have had such training as you have had in the handling of men in the transportation business, in the handling of the public, in dealing with commissions, in dealing with the finances of a transportation proposition, to step aside and be superseded by 100 per cent novices, because the particular thing which they run happens to be run by a gallon of gas instead of a few kilowatts.

If there is to be in the community in which you now operate electric railways, under the ground, on the ground, or overhead, any means of transportation which the community justly demands and requires, then you are the men to run it and not some taxicab driver.

I don't think you have any right—and I say you because you are a part of the body of citizens who select the men who make the laws and regulations under which you work—you haven't any right to take my investment as a stockholder in an industry that I have made sincerely and that has been put into a steel rail or into a car, under the supervision of a publicly appointed body, a commission, at a price specified by the commission, and tell

me that because the community demands a wheelbarrow or an airplane I am to lose my money and go out of business and Heinie Kabibble or John Jones is to come in with his vehicle and take my business. I have never found in my experience a commissioner, a superintendent of streets, a Congressman or any publicity appointed or elected man who could stand up and face a genuine, honest-to-God meritorious truth if you will pass it to him, but if you don't pass it to him, you have no kick coming as to what they do to your property.

And I have always found in my limited experience that I never got anywhere with a commission or with a legislator or with anybody before whom I appeared who had the power of regulation of the situation with which I was responsible for unless I kept my 52 cards face up on the table and fought like hell to get a square deal.

There is no reason on earth that you shouldn't do it. You are entitled to it, and it is yours. If by some superhuman means you could put in it your determination to use all the power you have, legitimate power, to secure, first, in offices elective and appointed, the type of man that sits over in the White House, and, secondly, would then fight for the square deal to which you are entitled for your investor, who is your neighbor, and for your employee, who is dependent upon you for his livelihood, and for your passenger, who is entitled to decent and good transportation, with the spirit that most men in this room have fought a snowstorm or wreck, you would raise the percentage of successful companies in this country 50 per cent inside of a month.

There isn't a man here who has been in the electric railway game who hasn't crawled under a motor, crawled under a car, put a car back on the rails, who hasn't fought a strike, who hasn't carried a gun, who hasn't sat up 36 hours fighting a snowstorm, who hasn't been through the hell that goes with this industry. Fortunately you have a breed of pups in the industry that fight for something else besides money or you wouldn't have them, but that tremendous determination to succeed, that pride of accomplishment which makes you run the street railways and carry 16,000,000,000 people in this country is the type of guts that I want you to put into your scrap to get a square deal, to see that you get a square deal from those that tell you what you have got to do.

I pray and genuinely and sincerely beg you to stand up and throw out your chest. If you are crooks you don't belong in the business, and if you are on the square you are entitled to a square deal. And I will give you my word from my own personal experience you will get it, but you will never get it if you duck every time somebody takes a crack at you. If you are right, fight your heads off for it; you are entitled to it, you can get it, and with a close, viciously well-knit together, clean, magnificent team, headed by a corking, thoroughly well-informed, courageous, honest, fearless captain there is no reason why every single electric railway in the United States shouldn't be on the basis of a government bond investment.

Many Committees Meet at Washington

American, Engineering, Claims and T. & T. Executive Committees Head List of 18 Sessions Held in Connection with Midyear Meeting—
Much Important Business Transacted

THE Midyear Meeting at Washington was the occasion for sessions of many of the American Association committees and several from the affiliated associations. In all some 18 meetings were held, including the executive committees of the American, Engineering, Claims and Transportation & Traffic Associations. The new management and operation committee, combining the work of last year's city operation and interurban operation committees, held its first meeting. Detailed reports of many of the sessions are given below.

American Executive Committee

A REGULAR meeting of the executive committee of the American Association was held at the Chamber of Commerce Building, Washington, on Feb. 16. Members present were President J. N. Shannahan, chairman; J. W. Welsh, executive secretary; F. R. Coates, L. S. Storrs, W. H. Sawyer, H. D. Briggs, T. C. Cherry, L. H. Palmer, J. H. Hanna, E. F. Wickwire, C. S. Hawley, Harry Reid, C. E. Morgan, E. P. Waller, B. A. Hegeman, Jr., C. D. Emmons, C. L. Henry and E. C. Faber representing Barron Collier.

F. R. Coates, chairman of the policy committee, recommended that the association co-operate with various utility associations through the committee on education in the preparation of instructional matter regarding the utility industry.

It was recommended that Secretary Welsh write a letter to each manufacturer member calling attention to the basis on which dues are assessed, since some members are not entirely clear on the subject. The recommendation was approved.

For the national relations committee Harry Reid called attention to a meeting to be held the same afternoon at which the question of regulation of buses in interstate service was to be discussed. The committee hopes to co-operate with the steam railroads and the motor vehicle industry in studying the subject for the purpose of bringing the regulation of buses under the Interstate Commerce Commission.

Mr. Emmons, for the publication committee, gave a résumé of the status of *Aera*. The magazine is making satisfactory progress. A ballot was taken among member companies as to the size of page desired. Out of 147 replies only 58 desired a change, so it was voted to retain the present page size.

Myles Lambert suggested that the publication committee give some attention to the preparation of articles of a

popular type such as would appeal to non-technical readers.

For the committee on company and associate membership Mr. Palmer reported that four manufacturers had applied for membership, the Fisk Tire Company, Chicopee Falls, Mass.; the United States Tire Company, New York City; the Lee Tire & Rubber Company of New York, New York City; the Pressed Steel Car Company, Pittsburgh, Pa. The applications were approved.

The individual membership has increased 11, according to Chairman Morgan, being 831 at the present time. His committee proposed that membership cards be issued to individual members. This was approved.

MOTOR BUS POLICY DISCUSSED

A statement of the policy of the association with regard to motor buses, which was worked out in conjunction with the motor vehicle industry, was read by Mr. Storrs. This was a corollary to a similar statement of policy of the automotive industry with respect to the bus, in which the association concurred in every respect. The resolutions adopted by the American Association are published in full elsewhere in this issue.

Considerable discussion followed the presentation of Mr. Storrs' report. It was felt that the resolutions provide that the industry should be protected against unfair competition, and the association is taking a real step forward. The resolutions represent the best thought of leading electric railway and bus men. Following the discussion the code of principles was adopted as read.

NEWLY FORMED ADVISORY COUNCIL APPOINTS MANAGING DIRECTOR

President Shannahan announced that the advisory council appointed at the last meeting of the executive committee met on Feb. 3. B. C. Cobb, chairman of the advisory council, reported that at that meeting arrangements had been made for the appointment of a managing director of the American Electric Railway Association. In view of the serious problems that confront the railway industry, the advisory council, representing in the main the owners, had given the matter much thought, and had decided that the work of the association could be furthered very much by this move. Mr. Cobb announced that Lucius S. Storrs, president of the Connecticut Company, had been selected for the position of managing director. Inasmuch as he will need the strongest financial support that can be given, members of the advisory council had signed an agreement to underwrite the cost of the new

office. This cost, he said, eventually should be distributed over the entire industry, but the underwriting of the movement guaranteed that it could be carried forward. By taking this step, the advisory council feels that the transportation industry can be put where it belongs in the affairs of the nation.

President Shannahan said that it would be necessary to get the association to adopt changes in the constitution. As such changes require a publication of 30 days in advance of action, it was considered necessary to handle the situation temporarily through the executive committee and later put the entire matter before the membership with a vote to be taken at the October convention. The annual surplus existing in the association's finances for the last few years has been taken up by the absorption of the publicity work formerly carried on under the direction of the Committee of 100, and by the growth in the association work, one indication being the change to larger quarters for the New York offices. The new movement will have to be an entirely separate proposition. He felt that each electric railway, large or small, will be so benefited that it should be glad to contribute a proportional amount of the expense.

In the advisory council, said Mr. Shannahan, are men who have not been actively associated with the American Electric Railway Association, but they have come out strongly in favor of the movement. Owen D. Young, for instance, said that there is hard work ahead, and unless everybody stands back of it the movement will not be effective.

Mr. Sawyer moved that in accordance with the recommendations of the advisory council, and until suitable changes can be made in the constitution of the association, the position of managing director be created. The motion was adopted unanimously.

MR. STORRS ELECTED

Upon motion of Mr. Morgan, Mr. Storrs was elected to the position by a rising vote of the association.

Mr. Sawyer congratulated the executive committee on taking this step and Mr. Shannahan for initiating and carrying the movement to a successful conclusion, stating that it is the most outstanding progressive and constructive work that the association has done.

Mr. Storrs replied briefly, expressing his thanks and stating that it would be necessary for him to get the duties of the new office outlined before it would be possible to make any definite statement of the policy to be adopted.

Mr. Cobb stated that he expects the

manufacturers to do some of the underwriting of this new move. Several of the leading manufacturers have already agreed to make substantial contributions, and it is known that others will follow.

ATLANTIC CITY AGAIN CHOSEN FOR CONVENTION

Mr. Sawyer, chairman of the committee on convention location, requested Mr. Morgan, chairman of the subcommittee, to present his report. Mr. Morgan stated that after investigating several cities which had been proposed for the next convention, Atlantic City had been agreed upon by the committee. The terms will be practically the same as those of last year, except that additional facilities will be provided to make possible the exhibit of electric railway cars on the pier, or adjacent thereto. Mr. Sawyer moved that an exhibit be held in connection with the convention and that Atlantic City be chosen as the location of the meeting and that it be held the week beginning Oct. 5. The motion was adopted.

Mr. Hanna extended the greetings of the city of Washington to the association on the event of the Midyear Meeting.

As chairman of the special committee on referendum 44 of the United States Chamber of Commerce, Mr. Hanna made a report covering postal rates, postal salaries, and the possibility of providing an emergency fund for the Postmaster-General.

President Shannahan read a letter from the Electric Truck Transportation Corporation dealing with the matter of store-door delivery in connection with electric railway service. Mr. Reid stated that the same matter had been brought to the attention of the Central Electric Railway Association. Mr. Morgan said that it also had been taken up with the New York State Electric Railway Association. After some discussion, Mr. Reid moved that the Transportation & Traffic Association be authorized to make a study of the subject. The motion was carried.

Secretary Welsh stated that the Department of Commerce wants figures of monthly traffic of electric railways in connection with its survey of current business. This was desired in the form of an index figure of all companies that can be included in such a survey. On motion of Mr. Lambert, it was decided to instruct Mr. Welsh to prepare such information as was needed for the Department of Commerce.

Mr. Henry made a report on the action of the Interstate Commerce Commission in the Lackawanna case, in which section 15A of the interstate commerce act was involved. Under the decision this company was brought under the clause. He suggested that all electric railways study the decision.

President Shannahan announced the membership of the exhibit committee, with C. E. Morgan as chairman, and the entertainment committee, with S. J. Cotsworth as chairman. The complete personnel of these committees will be announced later.

It was decided to hold the next meeting in New York City on April 3, beginning at 10 a.m.

Special Taxes

A MEETING of the committee on special taxes of the American Association was held at Washington, D. C., on Feb. 16. W. H. Maltbie of Baltimore acted as chairman. Others in attendance were: A. C. Watt, A. G. Neil, A. W. Flor and F. W. Doolittle representing Edwin Gruhl. Mr. Maltbie reviewed the previous work of the committee, after which methods were considered of bringing the electric railway tax situation to the attention of the industry as a whole and the public at large.

Location of Next Convention

THE committee on place and date of the next convention met in Washington on Feb. 16 and decided to recommend to the executive committee that the annual convention be held in Atlantic City during the week of Oct. 5. The committee had canvassed the situation in several other cities and concluded that the greatly increased facilities which will be provided for exhibiting electric railway cars this year at Atlantic City made it practicable and desirable to hold the convention there again. The details as to these added facilities will be announced later but they have been definitely provided for, and the committee therefore urged that railway companies and car builders lay plans for an extensive railway car exhibit in October.

Co-operation with Manufacturers

A MEETING of the American Association committee on co-operation with manufacturers was held in Washington on Feb. 16. The members present were E. F. Wickwire, chairman; G. A. Barnes, C. L. Hancock for W. D. Blatz, W. H. Boyce, David Cameron, E. C. Faber, E. E. Kretschner, H. H. Lloyd, Herbert Metz, J. C. McQuiston, George R. Rowland, C. N. Uhl, and C. L. Van Auken.

It was suggested by Mr. Lloyd that the committee on purchases and stores be enlarged to admit purchasing agents of manufacturer members. This suggestion was made because of the similar character of problems of purchasing of railway companies and manufacturing companies. It was thought that this would also make possible closer co-operation with the publicity work of this committee.

There was some discussion of changes in the form of stickers used for shipments made by manufacturer members. These stickers recently have been supplied in quantity to manufacturers by the publicity committee. Another subject along the same line was the discussion of signs to be placed on carload shipments.

Another suggestion was that stuffers be prepared for packages going into the home from manufacturers. This would include such merchandise as electrical goods and similar equipment manufactured for household use.

A suggestion was made which it was considered would be of considerable benefit. This was that letters be written by manufacturer members to realtors, merchants and others in their

cities calling attention to their dependence for prosperity on the type of transit available and the prosperity of the electric railway industry. The absolute necessity of protecting the electric railway companies so that they would be able to give the necessary type of service should also be pointed out.

National Relations

THE committee on national relations of the American Association met in its office in the Munsey Building in Washington, Feb. 16. Chairman Harry Reid presided. Members present were: H. G. Bradlee, C. D. Cass, F. C. Hamilton, C. L. Henry, W. V. Hill representing Frank Karr and H. A. Mitchell, D. W. Snyder, Jr., and A. F. Van Deinsen.

Some discussion of the various amendments to the Federal law relating to the inspection of steam locomotive boilers led to the appointment of a sub-committee to handle the interests of electric railways in taking up this subject with the Interstate Commerce Commission.

It also was decided to send a copy of the examiners' report in the Lackawanna case before the I.C.C. under Section 15-A of the transportation act to each member for his information and study.

Selling Transportation

AT A meeting in Washington on Feb. 16 the committee decided to draw up no conclusions, but to have the members in the near future submit in writing their individual views as to the more practical steps that can be taken to make railway service more attractive to the public. The committee is hopeful that from these reports enough material can be taken to compile a pamphlet which can be placed in the hands of all engaged in the conduct of electric railway operations.

Bankers are requiring evidence from railways of merchandising enterprise just as they require it from their borrowers engaged in mercantile pursuits, it was said. They are not going to be impressed with efforts that get no further than signs on the exterior of cars or such publicity as can be secured gratis in local newspapers. Signs on the outside of cars are all right as one means of getting business, but they should not be on rough-looking boards. General appearances should be kept up to the highest point possible even where atrocious looking fenders are required.

ATTRACTIVE VEHICLES ATTRACT PATRONS

Varnish and the upholstery play no small part in attractive business to the bus. Cars should be kept well painted. It was suggested that the color might be changed each time the exterior is repainted. Interiors should be made more ornate. More stress should be placed on cleanliness. Noise should be reduced. Manufacturers of cars should be encouraged to do more research in the effort to produce a vehicle as nearly noiseless as possible.

The 1910 street car is no more attractive than is the 1910 automobile. Records show that new equipment increases receipts. While all cars cannot

be of the 1925 model, 1925 service Ideals can be applied generally.

The privately owned automobile is the principal competitor of the electric railway. Means must be devised to prevent further losses of traffic to the private automobile and to get back as much as possible of that already lost. Some of the larger properties may believe that congestion is solving this problem, but means are being found to relieve congestion and progress in that direction may be expected to become more marked. Convenient routing, greater frequency of service, greater average speed, plus the great advantage of lower cost, all will tend to accomplish this end. The bus can be used to great advantage in attaining these objectives. That vehicle should not be regarded as a feeder only. It offers an opportunity to furnish a different class of service, supplementing that furnished on the rails. It offers new possibilities in de luxe and express services. The bus is a new baby in the transportation family. It is just as sure to stay in the family as is the human infant.

The public is getting the idea that the electric railway is doomed. This is making financing more difficult. The fallacy of this conclusion should be offset by educational efforts. Electric railways now must go out after business, and this is calling for greater managerial ability as well as for specialists in merchandising. Higher salaries must be paid so as to attract the best executive talent.

The committee decided not to devote time at the meeting to the discussion of freight and express services as these subjects were dealt with quite fully last year.

In the absence of Chairman Wood, G. H. Clifford of Fort Worth presided. Other members in attendance were: J. A. Dewhurst, C. A. Graves, H. Etheridge, J. P. Griffin, C. D. Smith, E. S. Wilde and W. H. Boyce.

Company Membership

THE committee on company and associate membership met in Washington on Feb. 16 with chairman L. H. Palmer presiding. Other members present were: F. G. Buffe, J. H. McClure, W. J. Harvie, F. C. J. Dell, W. K. Archbold, J. W. Hancock, J. H. Drew and Harry L. Brown. The list of non-member railways was gone over. Each one considered a prospect was assigned to a member of the committee for attention.

Insurance

THE committee on insurance of the American Association developed its program for the year at a meeting at Washington on Feb. 16. Paul Wilson of Cleveland, chairman of the committee, presided. Members in attendance were O. H. Bernd, C. H. Bourne, F. J. Petura and B. L. Tomes.

It was decided to have two sub-committees. The first, under the chairmanship of Mr. Daniels, will consider the general subject of fire insurance, i.e., what the principal hazards are on electric railway properties, the princi-

pal available precautions in connection with them and the effect of "good housekeeping" in connection with electric railway risks.

The second sub-committee, under the chairmanship of Mr. Bernd, will study the present status of the industry as regards fire insurance, and will collect data in regard to losses and what is actually being done to prevent fires. These committees will report before the next general meeting of the committee, to be held probably in June.

Management and Operation

THE first meeting of the newly organized committee on management and operation of the American Electric Railway Association was held at Washington on Feb. 16. Those present were F. R. Coates, chairman; R. F. Carbutt, vice-chairman; G. C. Hecker, secretary; E. S. Wilde, H. L. Mitchell, C. D. Porter, R. W. Emerson, G. W. Welsh, and D. E. Blair, regional directors; C. A. Graves, A. J. Stratton, D. J. Locke, H. B. Potter, G. M. Alexander, B. C. Edgar, J. P. Ingle, J. B. Stewart, Jr., R. J. Lockwood, J. M. Bosenbury representing D. W. Snyder, Jr., D. L. Fennell, J. P. Griffin and W. V. Hill, members; J. N. Shannahan, L. S. Storrs, C. D. Emmons, J. W. Welsh, J. W. Colton and Morris Buck, guests.

After the meeting was called to order by Chairman Coates, he presented Mr. Storrs, the new managing director of the association. Mr. Storrs addressed the meeting briefly, stating that he could not think of anything that can be more constructive from the managerial side—which means also the ownership side—than the work of this committee, with the opportunity it gives for the exchange of ideas.

Executive Secretary Welsh explained how the work of this committee can be tied in with the work being carried on at association headquarters. Mr. Hill felt that personal contact between members of the committee and the properties they visit is necessary to get results that will be beneficial.

PRESIDENT SHANNAHAN TELLS COMMITTEE OF ITS OPPORTUNITY

Addressing the committee briefly, President Shannahan said that scarcely any of the other committees of the association have the opportunity for effective work that this one has. Originally, he was skeptical of what could be accomplished, but a year's contact has shown him the value of the work that has been done and can be done. The greatest benefit, he believes, accrues to the men who make the visits to the properties. For the association these men act as liaison officers and provide a means for getting more active support of the association. The benefit, he said, far outweighs the cost in effort and money.

Mr. Emmons said that he wanted members on the committee to take back the message to the presidents of their companies that he is sold on the value of the work. Any possible resentment from managements who might feel that the visits of committeemen are an unwarranted interference should be al-

laid by the character of the members and the message they carry to the properties.

Chairman Coates said that when he agreed to accept the position on the committee he had done it with a reservation that a vice-chairman be selected who would be able to carry on the work in the same manner as he would do it. He said that the vice-chairman was fully as capable of doing the work as he was, and having had the experience of last year was probably better qualified than himself.

PLAN OF ORGANIZATION AND PROCEDURE PRESENTED

Mr. Carbutt then took the chair. He presented for the consideration of the committee a tentative plan of organization and procedure, which has been prepared by an advisory board. This board, consisting of Messrs. Carbutt, Blair, Boyce, Emerson, Riddle, G. W. Welsh and Wilde, had held a meeting with the regional directors on Jan. 30, and had given its approval of the organization plan. Mr. Carbutt outlined the contents of the plan and then placed it before the members for open discussion.

Mr. Fennell raised the question of the overlapping of work of this and other committees, stating that the question had come up at the meeting of another committee the same morning. Mr. Carbutt explained that there was no overlapping and that the functions of this committee were entirely separate from those of committees which were making separate investigations, either by questionnaires or by personal contact.

G. W. Welsh stated that in preparing the handbook there will necessarily be some duplication, but any other committee can go out and get the information. The most important change in the organization of the work for this year is the appointment of regional directors, formerly known as regional vice-chairmen. Last year these men had to do all of the work of visiting properties, while this year the plan is to have all of the members active and to have them divide the work of making the visits to properties. He feels that it is impossible to get much information of value by correspondence, so that the personal visits are of greatest importance.

Mr. Mitchell felt that members of the committee should be informed as to whether companies listed for visits are members of the association or not. It was suggested that on page 5 of the "Plan of Organization of Procedure," par. F (a) should be modified to read: "Co-ordination of electric railway and motor bus and truck service for all transportation requirements." Mr. Stewart moved the adoption of the report. This was seconded and carried.

Mr. Emerson said that no arrangement has yet been made for dissemination of the information that is being collected by the committee. Mr. Carbutt explained that arrangements have been made for editing the material at headquarters. The method of publication will be determined later, depending on the amount of material and the time at which it is received. It was pointed out that in obtaining information from

companies, one important idea was to get a list of available men for a personnel file of individuals available for committee appointments.

It was suggested that meetings of the advisory board be planned for April 25 and July 15. Mr. Emerson suggested that a deadline be established at April 15, when the portion of the reports that are to be considered at the April 25 meeting should be available in New York. Mr. Lockwood felt that this date was too soon for the complete report, but that a part of the work can be ready at that time. Mr. Fennell felt that the date was rather early, but will do all he can.

Mr. Blair proposed that the attempt be made to get a report written by some one in the company visited who is vitally interested in the work under discussion. It was felt by the members that this method is desirable wherever practicable.

Valuation

THE work of the committee on valuation of the American Association since the last convention was reviewed at a meeting at Washington, D. C., on Feb. 16. F. W. Doolittle of New York, chairman, presided. The other members present were: Thomas Conway, Jr., C. W. Gillespie, F. C. Hamilton, W. H. Maltbie, Albert S. Richey and E. Stenger.

The subject that was first discussed was a progress report of the sub-committee on terminology, of which T. E. Francis is chairman. This sub-committee was appointed for "the study of elements of value claimed from time to time by public utility companies, looking toward the preparation of a list of terms with their definitions, which would be suggestive to the members of the American Electric Railway Association who are at any time confronted with the preparation of a valuation case." One purpose of this study was to reduce unnecessary and more or less meaningless terms, for the sake of clarity and definiteness. Another purpose was to list the principal elements of reasonable and fair value which otherwise might be overlooked in a valuation case. The members of this sub-committee, besides Mr. Francis, are J. A. Emery and James Walker.

The valuation committee also considered the possibility of compiling index numbers of electric railway construction costs, and other topics.

Engineering Executive Committee

THE executive committee of the Engineering Association met in Washington on Feb. 16. Those in attendance were: President C. H. Clark, chairman, R. C. Cram, R. H. Dalglish, F. H. Miller and G. C. Hecker. Considerable time was devoted to a discussion of standardization work and committee procedure. A sub-committee of the executive committee was appointed, consisting of R. C. Cram, chairman; M. B. Rosevear and Charles R. Harte, to study the entire procedure of standardization of the association, including the plan suggested several years ago

of a unit method of voting on the adoption of standards.

President Clark reported that the proposal to organize a committee on rail corrugations was approved by the executive committee of the American Association and that the executives of several companies expressed their desire and willingness to appoint representatives on the committee and bear their proportion of the expenses of a trip of inspection of the various properties throughout the country to study rail corrugation.

It was announced that the executive committee had approved by letter ballot the proposal to assign this year to the power transmission and distribution committee the subject of radio interference.

The secretary announced the completion of the draft of the bibliography on heavy electric traction by Professor Warner, and the bill for his services in this connection was approved. The matter of publishing the bibliography will be referred to the committee on heavy electric traction.

Announcement was made of the approval by the executive committee and indorsement by the association of various recommendations of the Division of Simplified Practice, Department of Commerce, among which were sizes and gages of sheet steel, steel lockers, reinforcing bars for concrete work and others. Announcement was made also that the committee on purchases and stores is studying the standard purchasing department forms recommended by the Division of Simplified Practice and that their recommendations would be presented for consideration of the executive committee at a later date. A special committee consisting of H. H. George, chairman; P. V. C. See and W. F. Graves reported favorably on the recommendations of the central lumber standards committee, and the executive committee authorized formal indorsement by the association of those recommendations.

The secretary announced the appointment of various members of the association on committees of the American Engineering Standards Committee, and reported the status of the work of the sectional committee on tubular steel poles, which was organized under the association's sponsorship.

Welded Rail Joints

AFIVE-HOUR meeting of the committee on welded rail joints was held at the Bureau of Standards on Feb. 16, in the morning and afternoon. Various types of testing apparatus for use on railway track were examined by the members. At the time of the meeting the repeated impact testing machine was out of service on account of failure of one of the mechanical parts.

Co-operative study with the General Electric Company in the matter of otograph tests was described by E. M. T. Ryder. No great progress has yet been made, but arrangements are under way looking to joint study with the track committee of the American Railway Engineering Association. It is hoped to develop information as to stresses caused by the passage of a car over a defective joint.

It is hoped also that valuable data on stresses in rails and across joints will be developed by means of telemeter tests. Apparatus used for this purpose was described in *ELECTRIC RAILWAY JOURNAL* for Feb. 14. It is expected that the information thus secured will be helpful in guiding the work of the committee.

Progress report No. 3 of the committee will probably be issued late in February and will bring up to date the results of tensile tests, as well as give information on the results being obtained from the repeated impact testing machine. Outlines were given of five separate investigations of features connected with the problem of seam-welded joints.

A newly developed contact pyrometer designed by C. O. Fairchild of the Bureau of Standards was exhibited at the meeting. Its use will assist the study of actual rail temperatures at different stages of the welding process.

A special report was made on a series of tests of seam-welded joints prepared at Baltimore and at Boston. These tests were made for the purpose of studying the effects of pre-heating and postheating. The report was presented by R. B. Fehr, development engineer Rail Welding & Bonding Company, and will be included as an appendix to Progress Report No. 3.

Those present at the meeting were: E. M. T. Ryder, C. H. Clark, R. H. Dalglish, A. P. Way, R. C. Cram, H. H. George, H. M. Steward, C. S. Kimball, J. O. Handy, R. B. Fehr, A. F. Blaser, C. W. Bolton, R. R. Seward, W. V. Armstrong, J. H. Deppeler, R. C. McCloy, E. W. Carruthers representing the Pennsylvania Railroad, William Spraragen, and G. K. Burgess, chairman. Other representatives of the Bureau of Standards were: H. L. Whittemore, J. R. Randolph, R. S. Johnston, C. O. Fairchild and O. S. Peters.

A sub-committee on examination of broken test specimens met at the Bureau of Standards on the preceding Saturday afternoon and examined all of the test joints which have thus far been subjected to tensile tests in the Emery testing machine. It is the intention to include the report of this special sub-committee in the forthcoming Progress Report No. 3. Those present at this meeting were: S. W. Miller, R. B. Fehr, E. M. T. Ryder, H. F. A. Kleinschmidt, J. H. Deppeler, R. C. Cram, William Spraragen, H. L. Whittemore and R. S. Johnston.

Transportation and Traffic Executive

IN CONNECTION with the Washington meeting, the Transportation & Traffic executive committee held a session on Feb. 16. Those present were Chairman T. C. Cherry, president of the association; G. H. Clifford, J. V. Sullivan, Samuel Riddle, W. H. Boyce, Edward Dana, E. M. Walker, Paul E. Wilson, and E. J. Murphy of the association staff. C. W. Chase was also present representing the accident prevention committee, of which he is chairman. Mr. Boyce pre-

sented the report of the committee on selling transportation in the absence of Chairman Wood of that committee.

A. H. Ferrandou, chairman of the committee on bus operation, and G. B. Anderson, chairman of the committee on traffic congestion, presented reports.

It was decided to request of the American Association that no committee be permitted to send out questionnaires that overlap the field of work being investigated by the committee on traffic congestion.

President Cherry named a program committee for the annual convention, which consisted of G. H. Clifford, chairman; Samuel Riddle and Joseph V. Sullivan.

Relief of Traffic Congestion

A DESCRIPTION of the plan which the Los Angeles Railway proposes to follow to secure relief in that city was given by G. B. Anderson at a meeting of the committee on relief of traffic congestion of the T. & T. Association held at Washington Feb. 16. He said that a very satisfactory system of traffic regulation had been in force during the holiday season, but that it had been repealed immediately thereafter. Until recently the merchants and the automobile interests have opposed parking restrictions. Lately, however, the former have begun to see that unlimited parking is a handicap to their business. Only the street car riders are unrepresented in discussions of this subject, and it is therefore the duty of the railway to represent their views. In Los Angeles the railway is endeavoring to present to the public the facts concerning traffic congestion, and to create a sentiment favorable to measures of relief.

Conditions differ in various places, in the opinion of W. S. Bell, who said that ordinarily relief cannot be secured if it is thought by the public to be primarily in the interests of the railway. The situation must be allowed to work itself out, he said, which it will do in time. Already pedestrians are becoming much incensed at the disregard shown by automobile drivers. W. E. Thompson agreed to this view and said that it was best to allow civic organizations to take the initiative in matters of traffic regulation.

Relief can best be secured by going directly to the local police in the opinion of E. S. Rider.

J. E. Heberle spoke of the difficulty of securing relief in Washington, due to the fact that the personnel of the Public Utilities Commission and the District Commission is the same, and these men are extremely busy. The necessity of securing Congressional approval also complicates matters. In general, he thought that best results are secured by sitting in with other bodies.

It was decided on motion by D. L. Fennell that the efforts of the various railways to secure relief of congestion be carefully observed, and that the American Electric Railway Association keep the member companies posted concerning the results.

Major R. J. Lockwood, assistant manager United Railways of St. Louis,

suggested that the committee study as soon as possible the recommendations of the Hoover conference on highway safety. A motion to this effect made by Mr. Fennell was carried. It was the sense of the committee that in order to avoid duplication the subject of city operation, so far as it applies to traffic congestion, be left to this committee for study. It was further thought that this committee should undertake to furnish full data on the subject of congestion to the publicity committee, to facilitate its work.

It was the sense of the meeting that, in so far as possible, left-hand turns at intersections and in the middle of the block should be prohibited in congested districts.

The next meeting is to be held in St. Louis, some time in April, at the call of the chairman. Those present were: W. S. Bell, W. E. Thompson, D. L. Fennell, E. S. Rider, J. E. Heberle, J. P. Tretton, F. R. Latta, W. H. Maltbie, C. L. VanAuken representing J. A. Grieg and G. B. Anderson, chairman.

Accident Prevention

THE first meeting of the new joint committee on accident prevention of the Transportation & Traffic Association and the Claims Association was held in Washington on Feb. 16. Members representing the T. & T. Association were: C. W. Chase, president Gary Street Railway, chairman; A. B. Miles, J. A. Jarvis and J. B. Stewart, Jr. Those representing the Claims Association were: G. R. Whitmore, Wallace Muir, E. J. Paige, W. H. Hyland, C. W. Giltner, H. E. Cady, R. A. Sears and Samuel Riddle. J. J. Reynolds, J. B. Stewart, Jr., J. S. Kubu and S. G. Herrell were also present.

Wallace Muir opened the meeting in the absence of the joint chairman, C. B. Hardin, and asked Mr. Chase to preside. Mr. Muir explained that the purpose of the formation of the joint committee was to avoid duplication of work by two separate committees, one in each association. He outlined the recommendations adopted by the committees last year as a guide to the new committee in planning its work.

It was decided that the work of collecting accident statistics be continued this year, and a motion was passed authorizing the chairman to appoint a special sub-committee of three members with E. J. Murphy of association headquarters as chairman.

HIGHWAY CROSSING SAFETY DISCUSSED

Mr. Muir recommended that a sub-committee be appointed to draft a bill for regulation of automobiles and the improvement of highway and crossing safety, with a view toward getting this uniform bill adopted by the various states throughout the country. It was proposed that the American Electric Railway Association undertake to obtain the approval and support of the National Safety Council for this bill, and that the association and the Safety Council jointly take the subject up with the United States Chamber of Commerce in an endeavor to get that organization to sponsor this bill as its own. It was suggested that an effort

be made to get the Chamber of Commerce to send a copy of the bill to the Governor and Attorney-General of each state, urging them to submit the bill to their respective legislatures for adoption as uniform legislation throughout the country.

This suggestion was questioned by R. A. Sears, general claims attorney Boston Elevated Railway, on the ground that the work started by the recent Hoover safety conference had already assumed a much wider significance than could such a movement as that suggested and that a definite set of principles for the formulation of safety regulation legislation had come out of the Hoover conference with the full approval of the many varied interests represented, including the automobile and railroad industries.

A general discussion ensued of the merits of various plans for working out the idea. It was finally decided to delegate Mr. Muir to outline the main features of his plan to the presidents of the Transportation & Traffic Association and the Claims Association, and to request them to discuss this subject with the executive committee of the American Association.

Discussion of the subject of following up trainmen to check the observance of safety rules led to a number of suggestions for improving the results obtained. Mr. Stewart outlined some of the methods used on the Youngstown Municipal Railway for stimulating safety work and said that the results accomplished by the application of the Louisville safety contest plan had been highly successful.

Mr. Sears outlined the plan used by the Boston Elevated Railroad of presenting safety discussion in a new form. He explained the use of a series of pamphlets in which a report of an imaginary meeting between the men, the general manager and the claim department is given in such a manner as to stimulate the interest and imagination of the employee reading the pamphlet.

After an afternoon session a motion was passed instructing the program committee to secure outlines of the work done by eight or nine railway companies which had made outstanding records in accident prevention. These are to be used as the basis for articles to be published and subsequently reprinted in pamphlet form and distributed to the executives of operating companies.

Claims Executive

AT A brief meeting on Monday afternoon the committee expressed its approval of the uniform motor vehicle law suggested by the accident prevention committee. Some time was given to consideration of subjects suggested for discussion at the annual convention, but no definite action was taken. It was decided to hold the next meeting of the committee in New York on April 3. Those present were: S. J. Herrell, G. T. Hellmuth, E. L. Lindemuth, J. S. Kubu, C. B. Proctor, H. E. Fisher, W. H. Hyland, J. J. Reynolds, Wallace Muir, and H. D. Briggs, president of the Claims Association.

Complete Map and Time Table of Davenport's Street Car System

OAKDALE		PERSHING				VANDER VEER				EAST LOCUST				MT. IDEA				ROCKLEDGE				NORTHWEST				GADSDEN				WEST THIRD				EAST THIRD AND BETTENDORF																				
Cars Leave		Cars Leave				Cars Leave				Cars Leave				Cars Leave				Cars Leave				Cars Leave				Cars Leave				Cars Leave																								
Stdy	Outd	Stdy	Outd	Stdy	Outd	Stdy	Outd	Stdy	Outd	Stdy	Outd	Stdy	Outd	Stdy	Outd	Stdy	Outd	Stdy	Outd	Stdy	Outd	Stdy	Outd	Stdy	Outd	Stdy	Outd	Stdy	Outd	Stdy	Outd	Stdy	Outd	Stdy	Outd	Stdy	Outd																	
6:57	7:00	7:00	7:05	7:05	7:10	7:10	7:15	7:15	7:20	7:20	7:25	7:25	7:30	7:30	7:35	7:35	7:40	7:40	7:45	7:45	7:50	7:55	7:55	8:00	8:00	8:05	8:05	8:10	8:10	8:15	8:15	8:20	8:20	8:25	8:25	8:30	8:35	8:35	8:40	8:40	8:45	8:45	8:50	8:50	8:55	8:55	9:00	9:00	9:05	9:05	9:10	9:10	9:15	9:15

Upper Part of Time-Table of Running Times of All Cars, Published for Public Distribution, Davenport, Iowa

Complete Time-Table for Public Distribution

FOLLOWING the adoption of a system of rerouting its lines in Davenport, Iowa, some time ago, the Tri-City Railway issued a complete time-table for public distribution. There are altogether seven routes, but as some of them pass through or loop about the center of the city, the time-table shows eleven lines, so as to give the leaving times at the outer terminals and at the center of the city, as at Grady Street or Pershing Avenue. A footnote on the time-table explains that the Oakdale cars, whose leaving times are shown by heavy face type, go only as far as Lombard Street.

The time-table is printed on a sheet 15 in. x 18 in. and also contains a route map of the lines in Davenport and other appropriate information. A reproduction of the upper part of the time-table is published herewith.

Advertising a New Line in Detroit

ON SUNDAY, Nov. 9, 1924, the Department of Street Railways, Detroit, inaugurated service on a new route known as the Mount Elliott line. The total length of this route is 4.35 miles, partly over old track and partly over new. Though mostly double track, a part of the line is single track with turnouts, and the operation of the cars over this section is controlled by automatic signals. Until the traffic warrants larger cars, the service is being furnished by one-man safety cars.

The new route connects eight lines and passes the plant of the Dodge Brothers Motor Car Company, where there are 16,000 employees. To facilitate the problem of receiving and discharging passengers at these works a loop has been built within the Dodge Works, and part of the Mount Elliott line service is routed over this loop. In addition, during the morning and evening

BETTER STREET CAR SERVICE

To improve street car service for Dodge Brothers' employees, the Department of Street Railways has established very fine street car service on Conant Road. This will do away with the crowding on Joseph Campau Ave., and the service has been arranged so it will be easier for you to travel to and from work.

We recommend that you patronize this service at once as we are sure it will work out to your advantage.

DODGE BROTHERS

Manufacturer Advertises a New Car Line

peaks a number of tripper cars from several other lines use this loop to take care of motor plant employees.

The Dodge company has co-operated in this traffic improvement by supplying information to its employees in regard to the new service. A copy of one of the posters put up in the Dodge plant is reproduced. A schedule card was also distributed to show from what lines cars would be operated over the loop.

Apron Prevents Riding on Bus Bumper

THE rear of the body on the Mack buses operated by the Boston Elevated Railway is protected from collision with a tree or pole and from damage by another vehicle crashing into the bus by means of a bumper which projects out several inches. It was found, however, that this provided a handy place for urchins to sit when stealing a ride. In order to prevent this a



This Bumper Apron Is Similar in Purpose and Construction to Those Used on Street Cars

sheet metal apron has been installed in a manner similar to that used on the bumpers of street cars. This has effectually prevented riding on the bumper. In the accompanying illustration the apron has received only a priming coat and therefore appears to be a slightly different color from the rest of the body. After the painting job has been completed, the apron is the same color as the rest of the bus and is inconspicuous.

Census Report Shows Status of Electric Railways

Tables and Other Statistics from the Census Report Just Made Public Give Interesting Facts About the Growth in Traffic of the Electric Roads Between 1917 and 1922

PRELIMINARY figures of the status of the electric railway companies of the United States contained in the census report for the year ended June 30, 1922, have been published in this paper.* The complete census report on electric railways has now been made public and has been issued from Washington. The report is printed on a page of more convenient size

than previous issues, the page being 6x9 in. instead of 9x11½ in. There are 256 pages in the report. The period covered by the operating statistics is generally the calendar year 1922. The statistics for equipment and balance sheets relate to Dec. 31, 1922, and for number of employees, June 30.

Statistics on electric railways have been compiled by the Census Bureau every five years since 1902. The census is primarily of street and interurban railways,

*See ELECTRIC RAILWAY JOURNAL for Oct. 6, Nov. 3, Nov. 10, Dec. 1, Dec. 22, 1923, and Feb. 9, 1924.

TABLE I—PRINCIPAL STATISTICS: 1922 AND 1917

	1922	1917	Per Cent of Increase ¹		1922	1917	Per Cent of Increase ¹
Number of companies.....	1,200	1,307	-8.2	Condensed income accounts:			
Operating.....	858	943	-9.0	Operating companies—			
Lessor.....	342	364	-6.0	Income from all sources.....	\$1,049,048,321	\$730,108,040	43.7
Miles of single track operated, all tracks ²	43,931.86	44,835.37	-2.0	Operating income—			
Running track.....	42,450.09	43,364.83	-2.1	Railway operating revenues.....	923,477,485	650,149,806	42.3
Main track.....	40,364.33	41,446.67	-2.6	Railway operating expenses.....	678,563,107	421,250,838	61.1
Road or first track.....	31,264.26	32,547.58	-3.9	Net revenue—Railway operations.....	246,914,378	228,898,968	7.9
Second track.....	8,796.33	8,656.08	1.6	Auxiliary operations—			
Other main track (third, fourth, etc.).....	303.74	243.01	25.0	Revenues.....	91,241,607	59,675,286	52.9
Sidings and turnouts.....	2,085.76	1,918.66	8.7	Auxiliary operations—			
Track in carhouses, storage yards, etc.....	1,481.77	1,470.54	0.8	Expenses.....	49,232,061	31,343,816	57.1
Miles of motor-bus lines (one-way).....	685.36	(³)	.....	Net revenue—Auxiliary operations.....	42,009,546	28,331,470	48.3
Rolling stock:				Net operating revenue.....	288,923,924	257,230,438	12.3
Cars, number.....	99,255	102,603	-3.3	Taxes.....	64,788,315	45,756,695	41.6
Revenue cars.....	88,707	91,448	-3.0	Operating income.....	224,135,609	211,473,743	6.0
Passenger.....	77,301	79,914	-3.3	Non-operating income.....	32,329,229	20,282,948	59.4
Express, freight, baggage, and mail.....	11,406	11,534	-1.1	Gross income.....	256,464,838	231,756,691	10.7
Service cars.....	10,548	11,155	-5.4	Deductions from gross income—			
Electric locomotives.....	404	357	13.2	Rent for leased roads (lines and terminals).....	43,771,275	48,302,823	-9.4
Motor buses, number, one-man.....	370	(³)	.....	Interest on funded and unfunded debt.....	139,126,390	119,113,018	16.8
Persons employed by operating companies:				Miscellaneous.....	16,379,561	7,889,920	107.6
Number.....	300,523	294,826	1.9	Total deductions.....	199,277,226	175,305,761	13.7
Salaries and wages.....	\$445,680,135	\$267,240,362	66.8	Net income.....	57,187,612	56,450,930	1.3
Salaried employees—				Dividends.....	36,729,243	48,337,435	-24.0
Number.....	30,239	27,151	11.4	Surplus.....	20,458,369	8,113,495	152.2
Salaries.....	\$57,469,091	\$33,909,674	69.5	Lessor companies—			
Wage earners—				Income from all sources.....	31,855,434	43,216,501	-26.3
Number.....	270,284	267,675	1.0	Rentals from operating companies.....	31,103,067	42,759,850	-27.3
Conductors, motormen, and one-man car and bus operators.....	130,628	136,184	-4.1	Miscellaneous income.....	252,367	456,651	64.8
Other wage earners.....	139,656	131,491	6.2	Deductions from income.....	14,837,025	17,897,373	-17.1
Wages.....	\$388,191,044	\$233,330,688	66.4	Interest on funded debt.....	13,120,349	16,147,380	-18.7
Conductors, motormen, and one-man car and bus operators.....	\$205,238,478	\$127,222,144	61.3	Taxes and miscellaneous (maintenance and organization, etc.).....	1,716,676	1,749,993	-1.9
Other wage earners.....	\$182,952,566	\$106,108,544	72.4	Net income.....	17,018,409	25,319,128	-32.8
Traffic:				Dividends.....	16,933,751	24,925,706	-32.1
Passengers carried.....	15,347,519,966	14,506,914,573	5.8	Surplus.....	84,658	393,422	-78.5
Car lines.....	15,331,399,851	14,506,914,573	5.7	Capitalization:			
Motor-bus lines.....	16,120,115	(³)	.....	Total (gross).....	5,446,794,547	5,532,223,818	-1.5
Total revenue passengers.....	12,679,349,042	11,304,660,462	12.2	Operating companies.....	4,234,678,330	4,626,788,027	2.3
Car lines.....	12,666,557,734	11,304,660,462	12.0	Lessor companies.....	712,116,217	905,435,741	-21.4
Motor-bus lines.....	12,791,308	(³)	.....	Capital stock.....	2,329,173,090	2,473,846,651	-5.8
Regular-fare passengers.....	12,217,523,995	11,304,660,462	8.1	Operating companies.....	1,972,832,506	2,006,151,013	-1.7
Car lines.....	12,205,118,008	11,304,660,462	8.0	Lessor companies.....	356,340,584	467,695,638	-23.8
Motor-bus lines.....	12,405,987	(³)	.....	Funded debt ⁷	3,117,621,457	3,058,377,167	1.9
Pay-transfer passengers.....	461,825,047	(³)	.....	Operating companies.....	2,761,845,824	2,620,637,064	5.4
Car lines.....	461,439,726	(³)	.....	Lessor companies.....	355,775,633	437,740,103	-18.7
Motor-bus lines.....	385,321	(³)	.....	Gross capitalization per mile of track owned ³	126,075	126,021	.....
Free-transfer passengers.....	2,499,822,382	3,021,137,935	-17.3	Net capitalization on account of electric railways (excluding investment securities and non-operating property).....	4,661,923,873	4,889,962,096	-4.7
Car lines.....	2,496,520,207	3,021,137,935	-17.4	Net capitalization per mile of track owned ³	107,908	111,391	.....
Motor-bus lines.....	3,252,175	(³)	.....			
Free passengers.....	168,348,542	181,116,176	-7.0				
Car lines.....	168,271,910	181,116,176	-7.1				
Motor-bus lines.....	76,632	(³)	.....			
Car and bus mileage.....	2,145,398,078	2,139,801,530	-0.7				
Revenue-car mileage.....	2,124,523,362	2,087,818,534	-0.9				
Passenger.....	2,068,293,833	51,982,996	8.2				
Express, freight and mail.....	56,229,529	13,258,312	(³)				
Non-revenue car mileage.....	13,258,312	(³)	.....			
Bus mileage.....	7,116,404	(³)	.....			
Car and bus hours.....	205,785,888	203,056,931	-0.6				
Revenue-car-hours ⁸	201,838,263	199,052,633	-1.0				
Passenger.....	197,146,335	4,004,298	17.2				
Express, freight and mail.....	4,691,928	1,325,573	(³)				
Non-revenue car-hours.....	1,325,573	(³)	.....			
Bus-hours.....	622,052	(³)	.....			

¹ A minus sign (-) denotes decrease; percentage not computed where base is an average or is less than 100.
² Includes track laying outside the United States (1922 and 1917, 27.06 miles).
³ No data.
⁴ Numbers employed June 30, 1922, and Sept. 29, 1917.
⁵ Not reported separately. Included in regular-fare passengers.
⁶ Represents 770 companies for 1922 and 836 for 1917.
⁷ Includes real estate mortgages amounting to \$13,795,318 for 1922 and \$7,197,895 for 1917.
⁸ Exclusive of track not represented by capitalization, as follows: 1922, none; 1917, 5.30 miles.

TABLE II—INCOME AND EXPENSE PER REVENUE PASSENGER: 1912 to 1922

Table with 4 columns: Item, 1922 Cents, 1917 Cents, 1912 Cents. Rows include Income from all sources, Railway operations, Auxiliary operations, Operating expenses, Taxes, Interest, Other deductions, Net income, Dividends, Surplus.

1 Based on total regular-fare passengers and pay-transfer passengers, car lines and bus lines.

TABLE III—COMPANIES OPERATING OVER 500 MILES OF SINGLE TRACK IN 1922

Table with 3 columns: Name of Company, Miles of Lines Operated, Miles of Single Track Operated. Lists companies like Pacific Electric Company, Chicago Surface Lines, etc.

1 Reported as Bay State Street Railway for 1917.

TABLE IV—TRACK MILEAGE 1922 AND 1917 BY LOCATION AND CHARACTER OF SERVICE

Table with 4 columns: Location/Character, 1922, 1917, Per Cent Increase. Rows include Surface, Elevated, Subways, City and suburban, Interurban.

TABLE V—TYPES OF CARS IN 1922, 1917 AND 1912

Table with 6 columns: Kind, 1922 Number, 1917 Number, 1912 Number, 1922 Per Cent Distribution, 1917 Per Cent Distribution, 1912 Per Cent Distribution. Rows include Cars—Total, Revenue cars, Passenger, Special cars, Service cars, Cars equipped with electric motors, etc.

1 Reported as "Combination—closed and open."

2 1922, one ambulance car, six dining cars, ten funeral cars, and six cars of a character not stated; 1917, eight funeral cars, six excursion cars, and nine cars of a character not stated.

TABLE VI—DENSITY OF TRAFFIC ON ELECTRIC RAILWAYS, NEW YORK CITY, CHICAGO, PHILADELPHIA, AND BOSTON IN 1922¹

Table with 5 columns: City, Miles of Main Track, Number of Revenue Passengers, Average number of Revenue Passengers Per Mile of Track, Per Car-Mile. Lists New York City, Chicago, Philadelphia, Boston.

1 Includes pay-transfer passengers for 1922 as follows: New York, 13,326,466; Chicago, none; Philadelphia, 55,206,600; Boston, none.

2 Includes a small amount of surface trackage operated as part of elevated systems.

3 Comprises both elevated and surface trackage.

TABLE VII—REVENUE PASSENGERS AND REVENUE-CAR MILEAGE—PER CENT DISTRIBUTION AND PER CENT OF INCREASE, BY GEOGRAPHIC DIVISIONS: 1922, 1917 AND 1912

Table with 6 columns: Division, 1922 Per Cent Distribution, 1917 Per Cent Distribution, 1912 Per Cent Distribution, 1917-1912 Per Cent Increase, 1922-1917 Per Cent Increase. Rows include Revenue Passengers, Revenue-Car Mileage, New England, Middle Atlantic, etc.

1 A minus sign (—) denotes decrease.

2 Includes pay-transfer passengers; does not include motor-bus passengers.

TABLE VIII—CAPITALIZATION AND FLOATING DEBT, OPERATING AND LESSOR COMPANIES, COMBINED: 1922 AND 1917

Table with 4 columns: Item, 1922, 1917, Per Cent Increase. Rows include Capital stock, Common, Preferred, Funded debt, Real-estate mortgages, Floating debt, Total, Stocks and bonds, Gross capitalization, Investments, Net capitalization.

1 A minus sign (—) denotes decrease.

2 Includes debenture stock amounting to \$3,830,551.

3 Includes real-estate mortgages.

TABLE IX—FINANCIAL STATISTICS FOR VARIOUS GROUPS OF ROADS

Table with 5 columns: Item, 1922, 1917, 1922, 1917. Rows include Number of companies, Ratio of operating expenses, Per mile of track, Operating revenues, Operating expenses, Net operating revenue, Per car-mile, Operating revenues, Operating expenses, Net operating revenue, Per revenue passenger.

1 Revenue passengers comprise regular-fare passengers and pay-transfer passengers on both car and bus lines.

TABLE X—OPERATING EXPENSES OF OPERATING COMPANIES BY ACCOUNTS: 1922 AND 1917

Account	1922	1917	Per Cent Increase ¹	Per Cent Distribution in 1922
Number of companies.....	858	943	-9.0	100.0
Operating expenses, total.....	\$227,795,168	\$452,594,654	60.8	100.0
Railway operating expenses.....	\$678,563,107	\$421,250,838	61.1	93.2
Way and structures.....	102,003,281	55,470,419	83.9	14.0
Equipment.....	87,236,577	48,981,554	78.1	12.0
Power.....	107,245,578	76,958,461	39.4	14.7
Conducting transportation.....	286,684,634	174,972,645	63.8	39.4
Traffic.....	2,732,173	2,301,817	18.7	0.4
General and miscellaneous.....	92,940,078	62,738,265	48.1	12.7
Transportation for investment—credit.....	-284,214	-172,323	64.9	a
Auxiliary operations—expenses.....	49,232,061	31,343,816	57.1	6.8

¹ A minus sign (—) means decrease.
² Less than one-tenth of 1 per cent.

and the statistics of electrified steam roads are not included in the general tables. The statistics of the Chicago Tunnel Company are also not included.

The census reports four surface railways still operated by cable, two in California and two in Washington. It also shows three roads still operated with animal traction, though only one, located in Arkansas, with 0.75 mile of track, was operated exclusively by this form of power. The others were one electric railway company in Pennsylvania and one in New York which reported small amounts (totaling 3.27 miles) operated by animal power for the purpose of holding franchises.

The final chapter in the report gives statistics of the sixteen municipally operated electric railways and the one state-operated railway.

For the first time, the Census Bureau collected data in regard to motor bus operation by electric railways, pay-transfer passengers and non-revenue car-mileage and car-hours. The information in regard to motor bus operation related only to those lines which form integral parts of electric railway companies, and did not cover independent bus lines or separate lines operated under stock ownership by railway companies.

For the first time since statistics of street and electric railways have been compiled by the Census Bureau, the mileage shows a decrease. The miles of single track operated in 1922 were 903.5 less than in 1917. This total included 294.14 miles of idle track. There was also a decrease in the number of passenger cars operated, in value of road and equipment and in number of companies. On the other hand, the number of employees increased 1.9 per cent, the number of revenue passengers (including pay-transfers) increased 12.2 per cent, and operating revenue increased 42.3 per cent.

The principal statistics of the electric railways, with the exception of statistics on power plants, are given in Table I. Table II gives the income and expenses in cents for revenue passengers from 1912 to 1922.

The average size of each operating company in 1922 was 51.20 miles of single track, 90 passenger cars and 350 employees, and the average company operated 2,416,231 passenger car-miles during the year and carried 14,797,381 revenue passengers. There were nine companies which operated more than 500 miles of track in 1922, as shown in Table III.

DATA ON TRACK AND ROLLING STOCK

All kinds of railways decreased their total length during the half decade from 1917 to 1922 except "elevated railways," and "subways and tunnels." This is shown by Table IV.

Table V shows for the last three census years the different kinds of cars used in electric railway service. Of this number, 75,335 cars were equipped with electric motors, as follows: 298 were equipped with one motor each, 42,811 with two motors, 297 with three motors and 31,929 with four or more motors. Of the 98,042 cars equipped with brakes, 80,936 were equipped with air brakes, 1,190 with other kinds of power brakes, and 15,916 with hand brakes exclusively. Of the 88,432 revenue cars, 16,506 were mounted on single trucks and 17,926 on double trucks.

POWER EQUIPMENT

The report shows an increase in the number of companies purchasing electrical energy instead of generating it. The proportion to the entire number reporting no power plant equipment was 73 per cent in 1922 as compared with 62.4 per cent in 1917. There was also a decrease in the output of stations operated entirely for electric railway purposes. The total power station capacity for electric railways, central stations and electrified sections and tunnels of steam railroads increased greatly, however, this total being, in rated horsepower 17,425,580 in 1917, and 24,800,732 in 1922.

STATISTICS ON TRAFFIC

In their statistics on electric railway traffic the compilers of the census report point out that some zone fare companies count passengers as the number of persons paying fares in each fare zone, whereas on other lines each passenger is counted but once regardless of the distance he rides. They also declare that some com-

TABLE XI—ANALYSIS OF INCOME PER REVENUE PASSENGER, ALL OPERATING COMPANIES AND COMPANIES OF CLASS X (OR COMPANIES WITHOUT COMMERCIAL LIGHTING) FOR THE UNITED STATES: CLASS X, CITY AND SUBURBAN TRUCKAGE ONLY, FOR SELECTED STATES: 1922 AND 1917

Class and State	Number of Companies		Number of Revenue Passengers	Income from All Sources		Operating Expenses		Taxes		Deductions from Gross Income		Net Income		
	1922	1917		1922	1922	1917	1922	1917	1922	1917	1922	1917		
All companies.....	858	943	12,679,349,042	11,304,660,462	8.27	6.46	5.74	4.00	0.51	0.41	1.57	1.55	0.45	0.50
Class X—All companies without commercial lighting.....	722	758	11,349,255,972	9,630,773,816	7.40	5.83	5.21	3.62	0.45	0.38	1.43	1.43	0.31	0.40
Companies of class X, operating city and suburban trackage only—selected states:														
California.....	17	20	354,682,361	215,309,448	5.28	5.02	3.91	3.78	0.31	0.32	0.66	1.10	0.39	10.28
Illinois.....	28	34	1,072,831,278	989,209,604	7.56	5.23	5.13	2.83	0.45	0.48	1.15	1.21	0.84	0.71
Kansas.....	4	3	17,083,325	12,337,265	6.07	5.18	4.44	2.90	0.45	0.46	0.63	1.22	0.53	0.60
Kentucky.....	7	8	107,318,921	99,688,947	6.49	5.25	4.55	3.11	0.47	0.47	0.97	1.17	0.50	0.50
Massachusetts.....	17	21	610,555,942	522,227,088	8.55	5.21	6.08	3.76	0.37	0.25	1.40	1.01	0.70	0.19
Missouri.....	12	10	300,350,798	272,283,832	7.03	5.03	5.22	5.44	0.63	0.42	1.03	0.97	0.14	0.20
New Jersey.....	12	9	445,341,799	397,649,320	6.77	5.10	4.68	3.03	0.65	0.42	1.37	1.46	0.08	0.19
New York.....	58	59	2,579,743,680	1,943,301,048	5.52	5.45	3.77	3.01	0.32	0.37	1.54	1.63	10.77	0.44
Ohio.....	19	15	535,125,100	458,780,663	4.81	4.21	3.50	2.91	0.37	0.34	0.26	0.55	0.69	0.41
Pennsylvania.....	53	60	844,213,378	794,916,862	6.48	5.51	4.38	2.97	0.37	0.27	1.41	1.65	0.32	0.62
Texas.....	13	18	92,745,119	63,638,242	6.60	5.19	4.84	3.72	0.39	0.31	0.85	1.07	0.52	0.09
Wisconsin.....	7	9	14,571,611	126,310,082	6.66	4.48	5.57	2.74	0.33	0.29	0.89	0.68	10.14	0.77

¹ Deficit.

TABLE XII—EMPLOYEES, SALARIES, AND WAGES, BY OCCUPATIONAL CLASSES, FOR OPERATING COMPANIES: 1922 AND 1917

Class	1922	1917	Per Cent of Increase ¹
Number of companies.....	858	943	-9.0
Persons employed:			
Number.....	300,523	294,826	1.9
Salaries and wages.....	\$445,680,135	\$267,240,362	66.8
Salaried employees—			
Number.....	30,239	27,151	11.4
Salaries.....	\$57,489,091	\$33,909,674	69.5
Officials—			
Number.....	2,017	1,883	7.1
Salaries.....	\$8,946,893	\$6,786,469	31.8
Managers and superintendents—			
Number.....	3,358	2,889	16.2
Salaries.....	\$10,403,759	\$6,205,507	67.7
Clerks, stenographers, and other salaried employees—			
Number.....	24,864	22,379	11.1
Salaries.....	\$38,138,439	\$20,917,698	82.3
Wage earners:			
Number ²	270,284	267,675	1.0
Wages.....	\$388,191,044	\$233,330,688	66.4
Conductors, motormen, one-man car and bus operatives—			
Number.....	130,628	136,184	-4.1
Wages.....	\$205,238,478	\$127,222,144	61.3
Conductors—			
Number.....	58,988	68,352	-13.7
Wages.....	\$92,939,236	\$62,992,587	47.5
Motormen—			
Number.....	58,166	67,832	-14.2
Wages.....	\$92,953,300	\$64,229,557	44.7
Operators, one-man cars—			
Number.....	13,070	(³)	.....
Wages.....	\$18,797,669	(³)	.....
Operators, buses—			
Number.....	404	(³)	.....
Wages.....	\$548,273	(³)	.....
All other wage earners—			
Number.....	139,656	131,491	6.2
Wages.....	\$182,952,566	\$106,108,544	72.4

¹ A minus sign (—) denotes decrease.
² For 1922 as of date June 30; for 1917, Sept. 29.
³ Not reported separately.

panies, in compiling their revenue car-mileage, count a motor car and trailer as one car and others count them as two. This should be considered in connection with the accompanying tables, as should also the fact that while all companies reported car-miles, only 89.7 per cent of the companies reported car-hours, although these companies carried 95.2 per cent of the total revenue passengers (not including motor bus passengers). In the tables, also, pay-transfer passengers are included with the regular fare passengers as "revenue passengers," but motor bus passengers are not included in the general statistics.

Table VI shows some figures on density of traffic in four large cities in 1922. This table does not include all of the roads in the city mentioned in each case.

Table VII shows per cent distribution and per cent increase by geographical divisions of revenue passengers and car-miles for the last three census years.

The report gives extensive statistics on the finances of operating and lessor companies. The figures for both classes of companies, combined, for 1917 and 1922,

are given in Table VIII, with the net capitalization, after securities owned are deducted, and the net capitalization per mile of track. Of the 1,154 operating and lessor companies, 315 operating companies and 180 lessor companies paid dividends. The average rate was 5.4 per cent for the operating companies and 7 per cent for the lessor companies, or an average of 5.8 per cent on the outstanding capital of those companies which declared dividends.

Table IX shows some interesting averages for 1922 and 1917. In the first group of two columns the railways are those surface railways where the company does not do any commercial lighting, so that the receipts and expenses for auxiliary operations are small. The final two columns related to elevated railways and subways. The census report gives similar figures for roads combining railway with lighting operations.

Table X shows the operating expenses by primary accounts for 1922, with percentage distribution and per cent increase over 1917. The report also brings out the fact that while the taxes paid by the industry as a whole have increased 41.6 per cent since 1917, the increase has been greater for the larger than for the smaller properties. On roads with receipts of more than \$1,000,000 the per cent increase has been 44.4, for those between \$250,000 and \$1,000,000, 40.9, and for those with receipts of \$250,000 and less, only 4 per cent.

Table XI is published to show the considerable variation in the income, operating expenses, etc., per revenue passenger for different states.

EMPLOYEES

Table XII shows the number of employees, salaries and wages by occupational classes for the last two census years. In this grouping "officials" comprise presidents, vice-presidents, secretaries, financial secretaries, treasurers, assistant treasurers, auditors, counsel and similar officials. Managers and superintendents include the general manager, assistant general manager, general superintendents and superintendents of departments. The third class is made up of clerks, stenographers and other salaried employees not included in the first and second class. Under the main heading "wage earners," "other wage earners" are made up of power plant employees, employees of maintenance of way, transportation and equipment departments, elevated and subway guards, and employees of electric light and power departments which did not make complete separate reports for such departments.

The striking feature of this table is a large reduction

TABLE XIII—STATISTICS OF EMPLOYEES FOR COMPANIES OF DIFFERENT CLASSES, 1922

	Companies Divided According to Annual Income from Railway Operations				Companies		Elevated Railways and Subways a	Surface Lines a
	All Companies	Over \$1,000,000	Between \$1,000,000 and \$250,000	Less than \$250,000	Without Commercial Lighting	With Commercial Lighting		
<i>Salaried employees</i>								
Number, total.....	30,239	22,315	5,190	2,734	22,959	7,251	1,372	28,867
Per 10 miles of track.....	6.88	8.11	5.08	4.40	6.37	9.30	15.99	6.70
Per 1,000,000 car-miles.....	14.23	12.82	20.17	21.70	12.57	24.41	4.52	15.85
Per 1,000,000,000 revenue passengers.....	2.39	2.01	4.71	5.73	2.02	5.47	0.79	2.64
<i>Wage earners</i>								
Number total.....	270,284	222,105	33,921	14,258	224,474	45,665	26,007	244,277
Per 10 miles of track.....	62	81	33	23	62	59	303	57
Per 1,000,000 car-miles.....	127	128	132	113	123	154	86	134
Per 1,000,000,000 revenue passengers.....	21	20	31	30	20	34	15	22
<i>Conductors, motormen and one-man car and bus operators</i>								
Number total.....	130,628	107,554	15,786	7,288	111,063	19,485	63,911	126,717
Per 10 miles of track.....	30	39	15	12	31	25	46	29
Per 1,000,000 car-miles.....	61	62	61	58	61	66	13	70
Per 1,000,000,000 revenue passengers.....	10	10	14	15	10	15	2	12

a—The group classification covers all tracks of the companies allocated according to the principal class of track, the "Elevated and Subway" group including a minor amount of surface trackage and the "Surface" group including some elevated and subway trackage.
 b—Exclusive of guards on subway and elevated trains, who are classified under "all other wage earners."

in the number of conductors and motormen since 1917. Of course, this is due in very large part to the increased use of one-man cars, and it will be noted that the total number of motormen and one-man car operators reported for 1922 exceeds the number of motormen (including one-man car operators so far as reported) shown for 1917. The report says that there is also probably more efficient operation and a tendency on the part of some companies to operate fewer cars in order to reduce expenses.

Table XIII shows some interesting averages as regards employees of companies of different types. During 1922 the average number of revenue passengers per employee was 42,148 and per car operator 97,267. Car operator in this connection is understood to be a motorman, conductor or one-man car operator. Elevated railway and subway guards are not included in this designation.

Center-Entrance Trailers Converted to One-Man Motor Cars

People's Railway Company of Dayton Installed Front Entrance Door so That Passengers Board at the Front and Alight at the Center

BY THE conversion of three center-entrance trailers into front-entrance, center-exit, one-man cars the People's Railway of Dayton recently obtained needed additional motor car equipment at minimum cost, and at the same time succeeded in making the converted cars pleasing in appearance and efficient in operation. This work, which was done by the Cincinnati Car Company, involved the addition of four GE-264 motors with single-end K-35 control, rebuilding of former trail trucks for motor operation and installation of a front door, air compressors and safety car devices.

The original trailers, which are shown in an accompanying illustration, were equipped with two hand-operated sliding doors at the center, and with longitudinal seats throughout. These cars were originally built to handle war-time traffic, which consisted of very heavy peak loads from certain designated points, for which trailer equipment was considered particularly suited. In addition to this, motor cars in Dayton were at that time operated by two men, and the use of trailers meant the saving of one man for each two-car unit. After the war, and with the adoption of one-man operation,



An Interior View of the Dayton Car After Rebuilding
Cross-seats were put into the rear section to induce passengers to move back from the front entrance. All piping and control wiring are installed under the longitudinal seats.

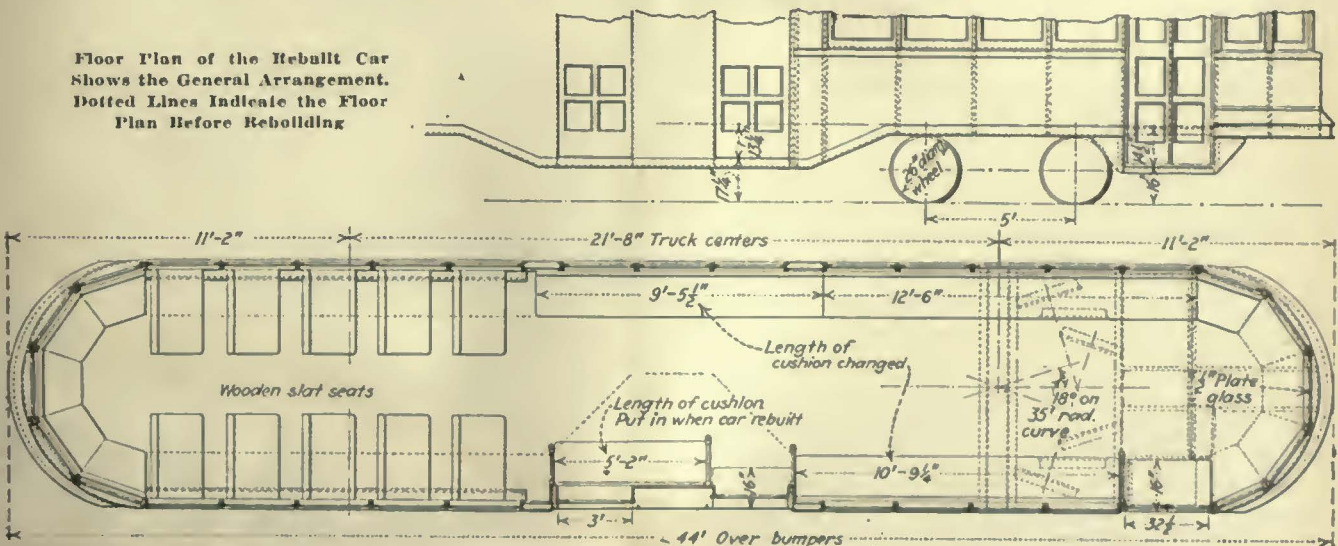
the conditions which originally favored the building of trailer equipment were eliminated, and consequently it became desirable to convert this equipment into one-man motor cars suitable for all-day service. The operation of several old and heavy motor cars to meet the traffic demands made it particularly desirable to provide additional light-weight one-man equipment which would allow the heavier and older cars to be reserved for rush-hour service.

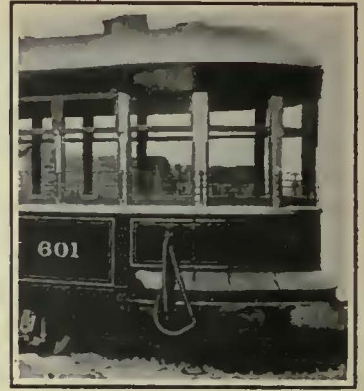
The appearance and floor plan of the converted cars are also illustrated. It was considered desirable to substitute cross-seats for the longitudinal seats in the rear section of the car, so as to induce entering passengers to move back from the front entrance. Since only one of the center doors was needed as an exit, the other center door was blocked shut and additional seats installed in front of it as shown in the drawing. The large step well formerly in the center of the body was covered over except for a small space in front of the exit. This allows passengers to move readily from the front to the rear section, without stepping into the well.

In doing this work, the step-well structure was left in place, and a false floor was laid over it so as to make the whole body floor level. Additional framing was installed so that the side sill could be cut to form the well for the front door.

A CP-27 air compressor was installed under the car near one rear corner. Due to lack of room under the

Floor Plan of the Rebuilt Car Shows the General Arrangement. Dotted Lines Indicate the Floor Plan Before Rebuilding





Appearance of the Dayton Traller Before and After It Was Rebuilt Into One-Man Motor Car

The rear door near the center was blocked shut and a new entrance door put in at the front end. Lamps installed in the small housings over the tops of the doors illuminate the steps and the ground at night, when the doors are open. The front end of the car, before reconstruction, is shown at the right.

car on account of the framing of the old center well the air tanks were installed inside the body under the longitudinal seat. All piping and control wiring were also put under the longitudinal seat, the wiring being installed in flexible conduit. The M-28 brake valve, which is part of the safety car equipment, controls the front-entrance door, while the center door, which is also operated with a National Pneumatic engine, is controlled from an auxiliary valve installed in a convenient position.

Inside the car a mirror is mounted in front of the operator so that he can see passengers at the center door. A similar exterior mirror on the vestibule corner post gives him a view of the center door from the outside so that he can see when passengers have alighted so that it is safe to close the door. This is interlocked so that he cannot start with the door open. Outside lamps mounted above the front and center doors illuminate the step and the ground near the car. These lamps are lighted by switches on the floor engines when the doors are opened.

Conversion of the trucks for motors involved rebuilding with larger diameter axles and 26-in. wheels in place of 24-in. This work increased the weight of each truck from 3,600 lb. to 4,000 lb. without gears. The original light weight of the trailers was 21,368 lb. complete. The changes and additions for one-man motor operation increased this weight to 28,800 lb. complete. The cars have a seating capacity of 50 passengers. This is slightly less than that of the original trailers due to removal of the circular seats at the front end to provide space for the operator.

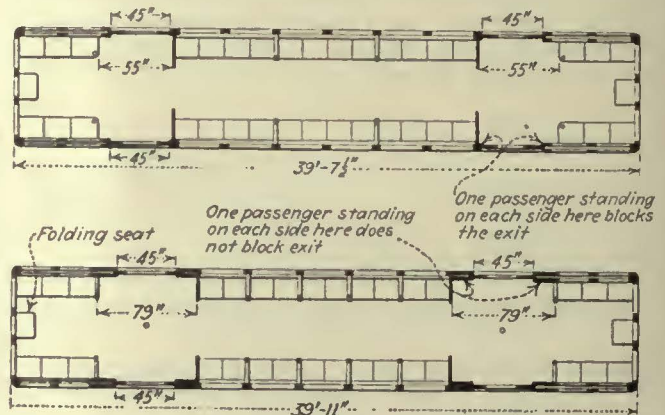
New Door Arrangement on the Berlin Elevated

To Prevent Door Blockades in the Cars Recently Installed, the Seating Arrangement Has Been Changed and Thus More Space for Passenger Movement Secured

IN THE new side-door cars now being put in service on the Berlin Elevated & Underground Railway, a different arrangement of doorway has been introduced to prevent the blockading of the side entrances by standing passengers. This same difficulty of blockading has been experienced on rapid transit lines in the United States as well as in Berlin. It is found that when cars are crowded, there is a tendency on the part of one or more passengers at an entrance to remain close to the opening and maintain a position there at

stops by grasping any handhold that may be available. This requires other passengers to force a way past. The thought of those thus blocking the doorway is evidently that if they step out onto the platform to leave the passage clear, they will not recover their advantageous position near the door.

In the United States efforts to overcome this practice have included the removal of all handholds on the inside



The Old Type of Car on the Berlin Elevated Above. The Latest Type Below. The Latter Drawing Shows the Wider Spacing of Seats Opposite the Side Doors

of the car near the doors, and in one case, the Interborough Rapid Transit subway in New York City, a dividing barrier has been placed at the middle of the entrance so as to provide two passages, each wide enough for only one person.

On the new Berlin Elevated cars the attempt has been made to grapple with this problem by setting the seats back on each side of the entrances. In the old cars, the door was 45 in. wide and the spacing between the seats adjoining the door entrance was 55 in. This distance has now been increased to 79 in., so that one standing passenger on each side of the door leaves an opening at least equal to that of the door. To accommodate this change, the cars are made 3½ in. longer. The number of low partitions, or arm rests, between seats and the number of stanchions used for handholds has been increased in the new type of car. One of the stanchions in the new design of car is set opposite the entrance in the middle of the car.

As shown in the accompanying illustrations, there is a folding seat at each end of the car and no passage-way between the cars of a train. More distinct coloring to distinguish the cars of the two classes operated has also been adopted in the new car.

The News of the Industry

Plans for Increased Travel

Georgia Company Announces New Car Purchases and Bus Extensions Following Ouster of Jitneys

With the signing of the new ordinance barring jitneys from competing with street cars in Atlanta, Ga., plans are being made by the Georgia Railway & Power Company to meet the increased travel which is expected on March 8 and thereafter when the jitneys will have ceased operation. The company announced on Feb. 9 that it had placed orders for the immediate delivery of 20 new, large and modern street cars, which will be put into operation as the jitneys cease to run. According to officials of the company, the elimination of the jitney is only the first step in solving the city's transportation problem, and it is ready to do its full share in putting the Beeler recommendations into effect. They stated that the company was willing to confer with city officials as to the best manner of handling the situation and would co-operate with the city in every possible way.

As one of the first steps in this direction it is indicated that at least two bus lines will be established in the near future by the company to supplement its railway system and serve sections of the city not as yet reached by any street car line. In fact, on Feb. 12 the company petitioned the City Council for the right to operate buses over two designated routes. One route is through the Peachtree-Morningside district of the city and the other through the Boulevard Park-Highland Avenue districts, both of which are at present inadequately supplied with street car service.

While it is not yet known what type of bus will be selected, or exactly how much money will be spent upon the auxiliary bus system, it is understood that at least 15 20-passenger buses will be ordered by the company and that several hundred thousand dollars will be invested by the company in buses, garages and shop facilities for carrying on this line of work.

The routes selected for the first two lines are, with a few minor changes, those pointed out by the Beeler report, and stopping places will be indicated by neat coach stop signs similar to the car stop signs now in use.

In asking for permission to operate the two coach lines, the company points out that a heavy initial investment will be required to start operation, that the lines will have to be operated at a loss for at least a year while patronage is being built up and that the investment will be justified only if the company is given the exclusive use of the two routes.

The fare on the new bus lines will be the same as that charged on the

street cars, it is understood, and if the trade develops properly and the experiment is a success other buses will be added to the equipment of the company and other routes added to supplement the street car system.

Entrance of the Georgia Railway & Power Company into the bus field has been under consideration for some time and awaits now only the approval of the City Council. The company states that it is "deeply appreciative of the action of the City Council in voting for the elimination of unregulated jitney competition with the street railroad"

and that it will work toward a definite solution of the city's transportation problem.

Maine Central to Study Electrification

Murray & Flood, consulting engineers, New York, have been retained by the Maine Central Railroad to investigate and report to President McDonald within six months upon the cost and feasibility of electrifying the main line of the company from Portland to Bangor, including various related yards.

Electrification Goes Ahead

Review of Work on Roads Out of New York City Under Jurisdiction of State Utilities Commission—Work on Long Island Road's Babylon Line to Be Finished on Time

RAPID progress is being made by the Long Island Railroad in electrifying that portion of its line now operated by steam from Valley Stream and Jamaica to Babylon, a distance of more than 25 miles. In fact the progress made so far indicates that the schedule will probably be met which called for the work to be finished by May 1, 1925.

It is planned to rehabilitate the old Central Extension branch from Bethpage Junction to Babylon, so that it may be placed in operation and thus relieve the electrified section of the heavy summer traffic to the Hamptons and the South Shore of the east end of the Island as well as furnish better service to daily patrons east of Babylon.

At present there remains only 15 per cent of the work planned to complete electric operation to Babylon; 36 miles out of 53.25 miles of third rail has been laid; 16.7 miles out of 18.6 miles of a new high-tension transmission line extending from Lynbrook to Babylon has been completed; the rebuilding of an existing pole line from Rockaway Junction to Valley Stream to permit transmission at 33,000 volts instead of 11,000 is about 10 per cent completed. There remains to be undertaken pole line work between Valley Stream and Cedarhurst and the installation of an additional feeder between Dunton and Rockaway Junction. A new duct system from White Pot to Dunton, 16,495 ft. in length, has been completed. Substation buildings at Laurelton, Freeport, Wantagh and Babylon have been completed. Those at Amityville and Lynbrook are about 75 per cent completed. Equipment has been installed at Babylon and Wantagh.

This is only one of the pieces of electrification work going on under the jurisdiction of the Public Service Commission of New York. Hearings are in progress upon the petitions filed in connection with the electrification of the Yonkers branch, that portion of the

Putnam division in the city of Yonkers, and the Port Morris branch of the New York Central Railroad. An order has been adopted approving the petition of the New York Connecting Railroad to complete the electrification of its railroad in the Borough of Queens. A determination was reached early in 1924 in the matter of the electrification of the Staten Island Rapid Transit Railway and the Staten Island Railroad.

PROGRESS ON STATEN ISLAND WORK

This project is now well under way, approximately 70 per cent of the scheduled work having been completed. A contract has been made by the railroad with the Staten Island Edison Corporation under which the latter will furnish the energy to be used. This required extensive additions to plant by the Edison Corporation, about 40 per cent of which has been completed. It is now expected that electric operation upon Staten Island will be begun about Nov. 1, 1925.

About 90 per cent of all of the work required to relay the main running tracks with 100-lb. rail has been completed, 65 per cent of the necessary third rail ties has been installed, 35 per cent of the third rail has been distributed, bonding, preliminary signal installation work, platform changes and other work are progressing rapidly. Plans for all of the necessary substations are completed and all of the material with which to equip them has been ordered. Orders have been placed for 80 multiple-unit cars to be operated upon the railroad. The Staten Island Edison Corporation has made an effective start in necessary changes at its power plant.

The most important and extensive change from steam to electrical service contemplated under the so-called Kaufmann act is the change to be made by the New York Central Company in its operation on the west side of New York City. The railroad filed a petition to

substitute electricity for the present steam motive power. Hearings were promptly undertaken jointly by the Public Service Commission and the Transit Commission of the State of New York. It very early developed in these hearings, however, that the change from steam power to electric power could not be undertaken until arrangements were made not only for the necessary grade crossing changes but also for the essential relocation of a considerable portion of the railroad's line on the west side of New York. These matters are not under the jurisdiction of the Public Service Commission. It is the understanding of the Public Service Commission that they are under consideration by the authorities of the city of New York and the railroad and within the last month some three grade crossing changes were ordered by the State Transit Commission.

\$100,000 Bus Plan for Suburban Rochester

The Rochester Co-ordinated Bus Lines, subsidiary of the New York State Railways, Rochester Lines, has announced plans for a network of bus lines through the towns of Greece, Parma, Hilton and places along Lake Ontario between Charlotte and Manitou Beach, provided the Rochester-Manitou Railway's petition to discontinue its line is granted by the Public Service Commission. The lines planned by the railway will entail an expenditure of at least \$100,000.

The Manitou line, a 9-mile railway, operates only during the summer and serves lake shore colonies. The railway now plans year-round bus service. Plans are being discussed for turning the roadbed into a highway, but operation of the bus service by the railway is not contingent upon this.

The fight is still on between the railways and the Ridge Road bus line. The Council granted the Ridge line permission to operate its buses into the Broad Street terminal in Rochester, but barred their taking passengers within the city limits. The railways countered with an application to open a bus service over the Ridge Road. The town of Greece has granted this permission and the matter is before the Public Service Commission. The move will be fought by the New York State Auto Bus Association, of which James J. Dadd, Rochester, is secretary.

The New York State Railways, through its subsidiary, operates the East Avenue bus line, the Dewey Avenue feeder line and a crosstown trackless trolley line. The new plans indicate its intention to enter the bus business on a wide scale, based on the success of its experiments to date.

The petition to the commission asking permission to abandon the Rochester-Manitou line sets forth that in 1922 the net loss was \$5,809; in 1923 it was \$7,371 and in 1924 \$12,815. The petition shows that the company has a deficit of \$25,882, with cash on hand of only 50 cents, and miscellaneous accounts receivable of only \$10, whereas it owed \$12,607, besides its funded debt of \$85,000 principal and \$1,808 accrued interest.

Commission Blameless, But Needless

Governor Smith Runs with the Hares but Holds with the Hounds on New York Situation

Governor Smith of New York recommends the abolition of the present Transit Commission and the transfer of its duties and powers to the Board of Transportation of New York City. This he did in a message sent to the Legislature on Feb. 16 in which he reviews the investigation conducted by Supreme Court Justice John V. McAvoy into transit matters in the city of New York and quotes at length from his report.

Toucing upon the bus situation, the Governor in his message said:

Illegal operation of buses is against the law and nobody can defend it. A municipality should not be above the law any more than an individual. While this report makes no definite recommendations as to legislation, I call your attention to my annual messages of 1923, 1924 and 1925 and special messages dealing with this subject, in which I have repeatedly urged that all the cities of the State be given the right to own and operate bus lines.

Reference is also made by the Governor to that part of the report of Justice McAvoy in which the justice said:

The proof presented with respect to the charges filed by the Board of Estimate and Apportionment against the Transit Commissioners shows that the charges are without foundation and that no cause exists for the removal from office of the Commissioners.

In his comment on this the Governor said:

I approve this conclusion. There is, however, a sharp distinction between the removal from office of individual commissioners upon charges of misconduct and the abolition of a commission itself as an agency of government. After removal upon charges the obligation would still rest upon the Governor to appoint successors to the office. I have held continuously since 1923 that there is no need for such an agency of government as the Transit Commission. Its existence in the city of New York has given rise to a division of responsibility in the past with respect to transit matters.

In 1923 and 1924 the Governor recommended the abolition of the Transit Commission and stated that in his belief its powers could be lodged in the municipality. Since that time the power to construct new subways has been taken from the Transit Commission and placed in the Board of Transportation of New York City, but all other powers remain as before in the Transit Commission. He is still of the opinion that the Transit Commission should be abolished. He said:

The deplorable transit conditions in New York are admitted by everybody. The immediate question, therefore, is relief, and relief at the earliest possible moment for the millions of people who live in the city of New York. I urge upon the Legislature to study the constructive recommendations of this report and by following the recommendations herein contained to make its contribution to the health, happiness and comfort of the people of the largest city in the country.

Meanwhile, Senator James A. Higgins has introduced a bill calling for a referendum on municipal operation of subways and a 5-cent fare. A second new bill, offered by Senator Thomas F. Burchill, demands that the Interborough, B.-M. T. and all other railroad companies in the metropolis replace wooden cars with steel ones within a year. This is direct repudiation of Justice McAvoy's findings, which declared wooden cars safe.

Four bills have been introduced in the New York Legislature which seek

to afford legal aid to operation of motor buses. One of the measures would authorize street surface railroads to exercise all powers conferred by law upon a stage coach corporation. At the present time it is necessary for an electric railway wishing to operate a bus line to do so through a holding company. Another measure would amend the railroad law by authorizing the Public Service Commission to permit a street surface railway to substitute a stage route, bus or motor vehicle route in place of any part of its railroad. Still another bill would amend section 22 of the transportation corporation law by empowering stage coach corporations to own, maintain and operate automobiles and other vehicles for transporting persons for hire, including sightseeing trips. The fourth bill would add a new section to the transportation corporations law authorizing the Public Service Commission to grant a stage coach corporation a certificate for operating a through route, in length 100 miles or more in one general direction, without the consent of local authorities.

Service Cuts in Buffalo—Mayor's Baiting Tactics Harmful

Service on five local lines of the International Railway in Buffalo, N. Y., will be abandoned on Feb. 22 and schedules on various other lines will be materially curtailed as the result of increased operating deficits. Every possible economy will be made.

On Feb. 15 the company placed one-man cars in operation on the Seneca Street and South Park lines, two of the heaviest patronized lines in the city, and on Feb. 22 the use of one-man cars will be extended to three other local lines. One-man cars will soon be in service on practically all the local lines in Buffalo where near-side pay-enter cars are in operation. This economy in operation is expected to save the railway upward of \$700,000 annually.

Mayor Frank X. Schwab announced he would declare an emergency existed and would issue permits for the operation of jitneys as soon as the railway abandoned service on its local lines.

Criticism of the attitude of the Mayor in his handling of the traction problem is voiced by Herbert G. Tulley, president of the International Railway, in the current issue of "Tulley Talks," distributed by the railway to car riders. Mr. Tulley said in part:

Encouraging the strikers, who had under a previous management tied up every street car in Buffalo in order to enforce the immediate payment of increased wages, was certainly the wrong way to go about reducing the company's operating costs so as to help it to keep the 5-cent fare. Encouraging jitneys to rob the company of its most profitable short riding, as was done, and the delaying of bus consents to the international for so long a period, had also a very bad effect. The city should have granted the company the right to operate and then helped us to keep fares down, as well as costs, which must always be paid from fares.

The Mayor's New Year greeting contained the words, "Small-town criticism has no place in the city of Buffalo, and a resolution that should be made by all of us might be, 'Here's where I live. I will boost Buffalo in 1925.'" I. R. C. men and management would gladly give the goody to "small-town criticism" and help the Mayor keep his 1925 resolution, so that car riders may benefit from city-company co-operation in a measure comparable with the possibilities already shown by co-operation of men and management.

Board Recommends Service Improvements in Trenton

The Board of Public Utility Commissioners of New Jersey recently submitted a report outlining the results of an investigation into the trolley service in Trenton. The suggestions for improving the service were applicable to the Trenton & Mercer County Traction Corporation and also to the regulation of traffic by the city authorities. The commission felt that one of the principal sources of complaint was irregular headway. It recommended the use of more men to supervise operation of cars. It also recommended that car platforms should be reconstructed to facilitate speedy loading and unloading. As another remedial measure the board recommended additional layovers at the various terminals to permit the absorption of delays in normal running schedules. It urged additional facilities for turning back cars where there had been unusual breaks in the headway.

So far as the City Commissioners were concerned the board recommended further regulation of traffic by the elimination of parking in the center of the city between certain streets, at least during the peak traffic hours, and the further diversion of motor vehicle traffic from the more congested thoroughfares upon which the trolleys were operated. In making its recommendations the board said that it was mindful of the difficulties of the situation because of the narrow streets and the tremendous growth in automobile traffic. It believed that service could be improved by co-operation between the City Commission and the company.

Bus Bill in Massachusetts Provokes Discussion

Representatives of the bus lines in Massachusetts resent the thought of being placed under control of the Massachusetts Department of Public Utilities. This they made plain in their fight against a bill to regulate them, filed by Clinton Q. Richmond, president of the Berkshire Street Railway, when the matter was discussed by the joint legislative committee on street railways. Mr. Richmond would require bus lines to secure a certificate of convenience and necessity from the Department of Public Utilities in addition to the permission of local authorities in communities in which they plan to run. The department would be permitted to refuse or recall the license and indicate the route.

Day Baker, who represents the bus owners, contends the only dispute between the railways and the bus owners is over the question of the proper board of regulation. He says that the Department of Public Works is best qualified to have jurisdiction. He has a bill that would make the Public Works Department the sole authority to license operations when the routes extend beyond any city or town. Mr. Baker said that at present one city or town may hold up the entire operation by refusing permission to pass through that particular locality.

James M. Swift, counsel for the Motor Coach Association of New England, is supporting the Baker bill.

W. F. Smith of the Royal Blue Line, George E. Marsters of the Marsters Tours, B. L. Thomas of the Sightseeing Tours and Harry J. Dooley of the Gray Line Auto Tours also are in favor of the Baker bill.

2,000,000 Bus-Miles in Detroit

The Department of Street Railways in the City of Detroit is installing another bus line to have a length of 3.8 miles, making the eighth coach line for the motor coach division to operate. This line will extend from the terminal of the Fort Street car line at the West Jefferson carhouse to State and Fort Streets in the village of Lincoln Park. According to Ross Schram, general manager of the D. S. R., the city will operate over 2,000,000 coach-miles this year. Six coach lines were started in the month of January with a total of 23 miles and 250,000 fares were collected during that month. It is anticipated that within 30 days the D. S. R. will be collecting 350,000 bus fares monthly.

The line on West Fort Street will exhaust the last of the 50 single-deck buses rented from Dodge Brothers. More buses are to be requested from the Council and it is also planned to build two service garages, one for the east side and one for the west side of the city, to care for the buses.

Operators of the city buses are obtained largely from among the D. S. R. platform men. The D. S. R. motor coach division is expanding so fast that difficulty is found by the department in keeping up with the demand for revision of running schedule. Maps have been prepared by H. M. Gould, assistant general manager, and Frank Pepler, superintendent of the division, showing the location of all the coach lines. Patrons of the line are supplied with copies of these maps and also with time schedules. Criticisms or suggestions in regard to the service are solicited from the patrons.

Accidents Decreased 23 per Cent

One year of an intensive accident campaign on the Chicago Surface Lines has resulted in a reduction of 23 per cent in fatalities. All accidents, regardless of responsibility, are included in the figures, which will be published in advertisements in Chicago newspapers. The campaign was conducted by Victor T. Noonan, who addressed 100 group meetings in 1924. The statement "Saving Lives," follows:

There was a reduction of 23 per cent in the number of fatal accidents on the Chicago Surface Lines last year as compared with 1923.

This was achieved despite the fact that a hundred more cars were in operation and several hundred more men were employed on the system last year, and at least 50,000 more automobiles were on the streets.

It is a direct result of careful organization in the interest of public safety.

A general advisory council composed of company officials meets with the company's accident prevention engineer at regular intervals to determine safe policies.

Employees' councils study accident prevention and report unsafe practices and conditions to the accident prevention engineer and the general advisory council.

One hundred group meetings of employees were held last year for the purpose of discussing safety.

Thus every individual is brought to realize his personal responsibility for the comfort and safety of others.

Every week is safety week on the Surface Lines.

Ottawa Revenue Loss Charged to Bus Competition

The Ottawa Electric Railway, Ottawa, Ont., says that the operation of bus lines is largely responsible for the receipts of the company falling \$109,484 below the estimate for last year as made in the Feustel report. This contention was made by the company in a letter to the special street railway committee, which met recently. The company claims that the bus lines are breaking the law by carrying passengers from one point to another within the city limits. The company asked the city to co-operate in securing legislation to prevent the bus lines operating within the city. The committee agreed to the company's plea for special legislation and also agreed to co-operate with the company in an application for increased borrowing powers.

The company now has power to borrow on bonds up to \$1,000,000 for construction work. It wants to borrow up to 75 per cent of its assets if necessary. The committee agreed to recommend that the company be allowed to defer the construction of the extension from Queen Street along Lyon to Gladstone. This was to be done this year, but the company points out that the extension is not warranted by the receipts. Major F. D. Burpee, vice-president and manager, said that the company was prepared to carry out other extensions in the second year's program. There was no objection to the company's proposal that 40 double-truck or large cars should be built within the next 2 years instead of 27 large and 20 small cars in 5 years.

Suggests Relief for Tacoma Property

Recommendations have been made which favor the granting of certain concessions to the Tacoma Railway & Power Company, Tacoma, Wash., in the matter of paving requirements, the hauling of city employees and direct competition by buses, on the basis of a 2-year experiment, without abrogation of existing franchises. The suggestions were contained in the report of the committee on transportation of the Federation of Improvement Clubs recently submitted to the City Council. The committee suggested that the company be relieved of paving payments except to the extent to which the cost of paving is increased by reason of the presence of the street car tracks, but asserted that maintenance of paving between tracks should continue as an obligation of the company. It suggested the regulation of buses by requiring them to run on other streets than those with car tracks and requiring a tax from them. It also favored the abolition of free rides for city employees except policemen on duty, and expressed the belief that for such concessions the street car company should be willing to extend service to present unserved sections. Admitting that a gross earnings tax on a corporation shown to be losing money is probably unjust, the committee said that relief from this tax should be a last resort. The report finally urged greater co-operation between the city and the railway.

St. Louis & Kansas Line Seeks Certificate

Incorporators of the proposed short line electric railway between St. Louis and Kansas City, Mo., appeared before the Missouri Public Service Commission at Jefferson City on Feb. 11. They are seeking a certificate of convenience and necessity to operate the line, but announced they were not ready to make a detailed showing of the financial backing of the new venture unless the members of the commission absolutely insisted upon it. The commissioners did not press the point at this time and the hearing was adjourned until March 5.

Lee Dunlap, Kansas City, vice-president of the new road, which will be known as the St. Louis-Kansas City Short Line Railroad Company, and S. J. McWilliams, Kansas City, counsel for the road, appeared for the road, but did not go into its finances except to say that bonds probably would be sold to defray part of the cost. The other incorporators of the road, which was granted a charter on Nov. 28, 1924, are Frank E. Lott, Kansas City; Ernest H. Lawton, Erba D. Smith and William H. White, St. Joseph. When the charter was issued it was stated \$240,000 in stock had been subscribed of the total capital stock of \$2,400,000.

At the hearing on Feb. 11 Mr. Dunlap stated that virtually all the needed right-of-way across the State had been obtained. The proposed line extends from University City, Mo., to Kansas City, a distance of 238 miles. The principal towns that will be served are: St. Charles, Warrenton, Columbia, New Franklin, Marshall, Higginsville and Independence. The road will construct two bridges across the Missouri River, at Creve Cœur and Arrow Rock.

Charles G. Miller, Kansas City, attorney for the Chicago & Alton, the tracks of which will be paralleled half way across the State, was the chief inquisitor for the steam railroads. H. H. Larimore of the Missouri Pacific and H. J. Nelson of St. Joseph, representing the Burlington, protested that before the road was authorized to sell stocks or bonds it should be made to prove its financial responsibility.

It has been estimated the road will cost \$26,000,000 for construction and equipment. The new road will parallel the Wabash from St. Charles to High Hill and the Chicago & Alton from Marshall to Kansas City. This project was referred to previously in the **ELECTRIC RAILWAY JOURNAL**.

P.R.T. Puts Into Operation First Loading Platform

The first trolley car loading platform for passengers to be operated in Philadelphia, Pa., was installed alongside the westbound trolley tracks on Market Street, at 12th, on Feb. 8, and immediately placed in use. The platform was built and installed by the Philadelphia Rapid Transit Company at the request of the Highway Bureau. The Council appropriated \$15,000 to pay for the construction and installation of a number of the platforms as a measure to protect car riders from automobiles while waiting for cars,

and the Highway Bureau of the Department of Public Works was authorized to proceed with the project. After consulting with the P.R.T., Highway Bureau officials found that the company could construct and place in position the platforms more economically than the city could do it and it was arranged for the company to do so.

The platforms are built in sections 21 ft. long, which may be joined, end to end, so that a platform of any length desired may be placed at a car stop. They are 5 ft. wide and 6 in. high. Iron uprights, along the tops of which a chain is strung, are placed at intervals of several feet along the side of the platform toward the curb, so that passengers waiting for cars are fully protected from automobile traffic.

If the operation of this platform is successful others will be placed throughout the city at points where traffic is heavy.

Seeks 8-Cent Fare in La Crosse

Confronted by an unsatisfactory operating condition which could only be eliminated by higher fares and lower operating costs if it is to continue its business along profitable lines, the Wisconsin Railway, Light & Power Company has filed with the Wisconsin Railroad Commission a petition asking for an increase in fares in La Crosse from 7 to 8 cents. The company also seeks to abolish three cut-rate privileges covering eight tickets for 50 cents, the monthly commutation tickets of 50 for \$2.75, and books of 20 tickets for \$1 to school children. For these it would substitute a book containing seven tickets for 50 cents. Permission is also sought to use one-man cars on the north side line.

R. M. Howard, vice-president and general manager of the company, explained that in 1924 and previous years the company was unable to earn the usual return allowed by law on its investment. Responsibility for this condition was attributed to paying expenses of \$50,000 in 1923 and 1924 and increased use of the automobile.

Suggests Fellow Workers on Board in Detroit

Ross Schram, general manager of the Detroit Department of Street Railways, has made a proposal that its platform employees nominate a group to act in place of the trial board to discipline fellow employees. At present the board is composed of Department heads. The proposal was made to Neil McLellan, secretary of the street car men's union, in answer to a protest against what Mr. McLellan said was an encouragement by the department of complaints from the street car riders.

It was announced that criticism would be welcomed by the head of the department as in the past, but there was no objection to having the men select a group from among their own number to judge the fairness of the complaints. The management will assume the roll of prosecutor in the trials of employees accused. If such a plan is favored by the men or if another

plan is advanced by them it will be given a month's trial to determine whether or not it fits in with the policy of the department for improving service to the public by giving the men added responsibilities.

Wisconsin Commission Sanctions Extensions

The Railroad Commission of Wisconsin has voted two to one to grant a certificate of public necessity and convenience to the Milwaukee Electric Railway & Light Company to build an electric railway 3.49 miles long for freight-hauling purposes from its Lake-side power plant west through the town of Lake to the freight lines of the Chicago & Northwestern Railroad, and another line 8 miles from Clement Avenue paralleling the Chicago, Milwaukee & St. Paul line to a point 1½ miles south of South Milwaukee, where it will join the Racine interurban line.

The company sought the right to build the first-mentioned line in order to insure an adequate and unfailing supply of coal for the power plant and a right-of-way for a transmission line.

The route from Clement Avenue is to be used as a cut-off for through passenger trains on the Racine interurban line.

Commissioners Gettle and MacDonald point out that the route recommended by the Public Land Commission is about a mile south of the one petitioned for by the company, but that under the law the company has a mile wide margin within which it can build its tracks, and the route proposed by the objectors is within the mile area. They also point out that about \$175,000 has already been spent on the proposed route and that the plea on behalf of future zoning regulations could not be considered, as the commission cannot take into account what may happen later.

In dissenting on practically all points, Commissioner Kanneberg denied there would be any increased construction and operating costs and held that the law permitting change of route applies only to open country and not to a line in a town, village or city, although not incorporated. He also maintained that co-operation in zoning and other plans to aid in city planning activity must be considered by the commission.

Contract Legal if Approved

The city attorney of Milwaukee, Wis., has ruled that if the Common Council and the voters approved of the proposed service-at-cost agreement now being negotiated between the Milwaukee Electric Railway & Light Company and the city it would be legal, especially if the city and company entered into the arrangement voluntarily. He gave this opinion following the threatened plan of certain Milwaukee business men to invalidate the contract by legal action on the ground that the 1900 franchise was still effective. The city attorney explained that the company was now operating under the indeterminate permit law which superseded the franchise granted to the company in 1900.

Student Rates Unfair and Hard to Collect, Says P. R. T.

The Philadelphia Rapid Transit Company, Philadelphia, Pa., believes that a reduction in fare for high school students would be both discriminatory and uneconomical. This is the substance of its answer to the students' associations of the high schools of the city, who petitioned recently for special reduced rates for high school students. The company said that it was in sympathy with the large number of students who were doing part time work in order to defray the expenses of their education, but that it would not be fair to extend to them a privilege which it would be impossible to give to the many thousands of young women whose financial condition was such that even a part time working plan would not enable them to secure a high school education. To the argument of the association that many cities do provide a special fare for students, the company said that in practically all cities where the privilege existed it had been inherited from early days when original franchise grants included this and other provisions based on other considerations than the cost of service. Experience and observation of the Philadelphia management had indicated that the practice involved so great a cost in collection as to eclipse any added revenue brought by increased riding.

The company stated that fare reduction for such of the high school students as were short riders must await completion of the Broad Street subway, at which time the company would advocate a 5-cent fare for the full length of all high-speed lines and a 5-cent zone system on surface cars.

Buses Affect Revenue of Dallas-Denton Line

Bus competition is affecting the revenue of the new interurban electric line of the Texas Interurban Company between Dallas and Denton, but the company has taken no action looking to a curtailment of service. Earnings of the Texas Interurban Company, which operates both the Terrell and Denton lines, failed to meet interest charges on its investment during January, but the loss was all on the Denton line.

The Terrell and Denton lines were built by the company in fulfillment of a commitment made when the railway franchise was granted to C. W. Hobson and associates in 1917.

Stations Lengthened in Brooklyn to Increase Capacity

In order to provide for the better accommodation of passengers by longer trains, the New York Transit Commission has formally directed the lengthening of all of the stations on the main line of the Fourth Avenue subway in Brooklyn. The commission has initiated the project with a request that the Board of Transportation make the necessary plans and supervise construction after an appropriation is obtained from the Board of Estimate and Apportionment. Eight-car trains in-

stead of the present seven-car trains will be made possible.

The additional station-lengthening program includes the local stations south of Pacific Street to the end of the existing line at 86th Street. An extension of the Fourth Avenue line is under construction from 86th to 95th Street, Fort Hamilton, but the lengthening of the terminal station at the latter point, the only station upon the extension, will be taken care of during construction.

All will be lengthened to a full 530 ft. At present they are principally 435 ft. long, those more recently constructed being 485 ft. long.

For the fiscal year ended June 30 last the Fourth Avenue line carried 57,838,316 passengers, as against 52,193,641 in the preceding similar annual period.

Railway Expands Bus Lines in St. Louis

The West Florissant-Jennings, Mo., line of the St. Louis Bus Company, auxiliary of the United Railways, St. Louis, Mo., has proved a financial success and the company has placed orders for several additional buses to be used on the line. The Natural Bridge Avenue line is also beginning to make a little money. Patronage is building up very nicely and more buses will be added soon. On the West Florissant and Jennings line a branch leaves West Florissant Avenue at Helen Avenue and runs to Melrose Avenue. Eight White buses will eventually be used on this installation. For a time temporary equipment obtained from other bus companies was used in this service. When the St. Louis-Jennings Electric Railway was abandoned a few years ago the residents of Jennings and West Walnut Manor were left without adequate transportation, and the new bus line with transfer privileges to all the city street car lines proved welcome.

The acquisition of the St. Louis Bus Company by the United Railways has presented no insurmountable shop problems for the latter company. Prior to the opening of the bus lines the United Railways had large and strictly modern garage and automobile repair shops for its fleet of automobile repair trucks, track department vehicles and automobiles used by officials of the company. The 12 buses now in operation on the Natural Bridge Avenue and the West Florissant Avenue-Jennings-Helen Avenue lines are being housed in the general garage on Thirty-ninth Street just north of Park Avenue, near the general offices of the railway. The automobile repair shops adjoin the garage. The shops are equipped with the very latest machinery and machine tools for rebuilding and repairing automobiles and gasoline engines. The mechanics are specialists in auto work and at all times 18 or 20 boys from the various shop departments are students at the David Rankin, Jr., School of Mechanical Trades. While they are attending the school the boys are paid a minimum of 25 cents an hour, with an increase of 3 cents an hour every six months. When the boys finish their course they are given positions in the shops organization at the full wage of journeymen mechanics.

Exemption Ordinances Not Considered

Ordinances which would exempt the East St. Louis & Suburban Railway, East St. Louis, Ill., from obligations incurred under a franchise which recently expired failed to come up for final vote before the City Council at its meeting on Feb. 9. The Council had previously accepted an agreement with the company and approved a resolution to submit the ordinances to the people.

Michael J. Whalen, City Commissioner, has led the fight against the three ordinances which would exempt the railway from paying between its tracks on North Seventh Street and permitting the abandonment of services on other streets. He objected to a section in one of the ordinances which provided that the company should pay an annual tax of \$25 a car, the number of cars to be based on an 18-hour unit of operation a day. The former franchise provided for the payment of \$25 a year on each car operated.

At a caucus of the Council on Feb. 10 W. H. Sawyer, president of the railway, presented a certified copy of a resolution passed by Council on Aug. 5, 1913, which stated that in the absence of a definite method of calculating the number of cars operated by the company the fee provided for should be based on the number of cars in an 18-hour operating unit a day.

Buses Supplement Topeka Street Cars

New buses to serve as street cars for the outlying districts will be put in service by the Topeka Railway in the near future. Several of the buses have already arrived and are going through the paint shop. They will resemble the street cars in color and interior arrangement, each car seating 25. Passengers will enter and leave by the front entrance, but a rear door has been added for emergency use. The routes have not yet been mapped out. They will not be stub lines, but will run all the way downtown. Transfers will be interchanged between the buses and the street cars.

Bus Extensions in Oakland Announced

The Key System Transit Company will shortly begin the operation of four more bus lines in Oakland, Cal. This will bring the number of bus lines operated by the company in the East Bay cities up to ten. These bus lines have been installed as the result of the recent traffic survey and routed in sections that have grown to a point where more transportation has become vital.

In making public announcement of the new lines, the company said that all 10 motor bus services now in operation or arranged for would be continued, if the loss was not too great. The company said: "We ask your regular patronage in order that these services may be maintained and extended. All are now operated at a loss, some at an unjustifiable loss." The new buses are expected to be ready for operation by March 1.

News Notes

Substitute Plan for Pittsburgh.—Car looping in Pittsburgh, Pa., was postponed recently pending trial of a new substitute plan agreed to by traction and downtown interests. Ordinances to bring the new plan to a focus were ordered drawn on Feb. 16 by the Council after a session with representatives of both sides of the controversy, which has been raging for several weeks. One ordinance to be drawn will be a new traffic measure which will add many downtown streets to the "AA" class of streets on which parking will not be permitted between 7.30 a.m. and 6 p.m. The other ordinance entails a franchise for the Pittsburgh Railways in Diamond Street, which would permit the company to create a loop. Mayor Magee indicated that the complete downtown parking regulations was an infringement on the work being done by R. W. Marsh, city traffic engineer. A traffic ordinance following his survey had been prepared, he said, but had been withheld from submission to the Council. He suggested that Mr. Marsh be included in the consultations of the interests and the traffic changes be worked out together.

Buses Succeed Cars.—The Union Traction Company, Santa Cruz, Cal., recently replaced two of its lines in that city with three 25-passenger Mack buses. Santa Cruz is a city of 11,000 population. The railway there has been operating 15 miles of line.

Board Intact.—W. W. Knight has been reappointed by Mayor Brough a member of the Board of Street Railway Control of Toledo, Ohio, for 6 years. The appointment is effective Feb. 1. Mr. Knight has already served a term of 4 years on the board and in the last 2 years has acted as chairman of the group. The reappointment of Mr. Knight will keep the membership intact. Other members are H. C. Truesdall, who has 4 years to serve, and David H. Goodwillie, who has 2 years yet to serve.

Refuses Higher Bus Fares.—The Public Service Commission has refused to grant the application of the International Railway, Buffalo, for an increase in bus fares on the Bailey Avenue line from 7 cents to 10 cents to make them uniform with the Delaware and Delaware Avenue bus lines. The company claimed it is losing \$2,000 weekly on the Bailey Avenue bus route. This line is being operated at the same rate of fare as the street cars—7 cents or four tokens for 25 cents, with free transfers to connecting car lines. The company will abandon its Bailey Avenue car line between Broadway and East Seneca Streets on Feb. 22 along with four other local lines.

Bus Permit Granted.—The East St. Louis & Suburban Railway, East St. Louis, Ill., has been granted a permit to operate buses over the St. Louis Municipal Bridge and to loop around the downtown St. Louis business section. The permit was granted by the

Board of Public Service of St. Louis on Feb. 13. The permit fixes the maximum fare at 10 cents. The East St. Louis & Suburban has also applied to the Illinois Commerce Commission for a certificate of convenience and necessity to operate motor express trucks in St. Louis and National City, Edwardsville, Collinsville, Shiloh, Fairmount City, Brooklyn, Madison, Alton, Venice, Hartford, Granite City, Maryville, Woodriver, East Alton, Lebanon, O'Fallon, Belleville and East St. Louis. W. H. Sawyer, president of the company, stated that the express trucks will supplement the present interurban freight and express service.

Experimental Bus Service in Ann Arbor.—Under the terms of the service-at-cost agreement with the city of Ann Arbor, Mich., the People's Motor Coach Company, which is affiliated with the Detroit United Railway, started bus service in Ann Arbor recently. The 5-cent trolley lines, which serve only a small part of the city of Ann Arbor, have been succeeded by a bus system of much greater route mileage and vehicle mileage at the following fare schedules: 10 cents cash, 8½-cent token, 50 rides for \$3 on a punch card, and \$1.25 weekly pass. The agreement permits the return to railway service after one year if the results with buses are not mutually satisfactory.

Commission Vacancies to Be Filled.—R. H. Musser, Plattsburg, Mo., one of the two Democratic members of the Missouri Public Service Commission, has announced his intention of resigning not later than March 1. His term expires April 15. The term of E. J. Bean, De Soto, the other Democrat, also expires April 15. Governor Baker will be urged to select engineers from St. Louis and Kansas City to succeed Messrs. Musser and Bean as the two major cities of the state at present are without representation on this important board despite the vast public utilities centered in those cities.

Joint Interurban and Bus Service.—An arrangement has been made between the Toledo & Indiana Railway and the Fort Wayne-Toledo Transportation Company to operate a joint service between Toledo and Fort Wayne, Ind., effective Feb. 15. Five trips each way daily will be scheduled. The running time is 4 hours and 10 minutes. The railway cars take passengers as far as Bryan, Ohio. From that point the run is made in buses by way of Hicksville and Harlan to Fort Wayne.

One-Man Car Service Started.—In accordance with authorization granted by the City Council of Macon, Ga., several months ago, the Macon Railway & Light Company recently started one-man street car service on the East Macon-Montpelier Avenue line. All of the old equipment of the company is being converted into one-man street cars. The service will be extended to all other lines as quickly as possible. The reconstruction of the cars was decided upon by the company in working out a plan whereby sufficient money might be saved and be applied to the paving of streets as provided for under the company's agreement with the city. To meet this requirement it became necessary to curtail operating

expenses, L. A. Magraw, general manager, announced.

Will Hear Bus Petition for Niagara Falls.—Application has been made by the International Bus Corporation, a subsidiary of the International Railway, Buffalo, for a franchise to operate de luxe buses in the city of Niagara Falls as part of the proposed Buffalo-Niagara Falls interurban route to be established in the spring. The application of the bus company will be considered by the Niagara Falls City Council at a public hearing on Feb. 23. The company says it would charge a one-way fare of \$1 between Buffalo and Niagara Falls. The fare between LaSalle and Niagara Falls would be 25 cents; Buffalo and Tonawanda or North Tonawanda, 50 cents, and the same fare between the latter two cities and Niagara Falls.

Power Issue to Higher Court.—The case of the Community Traction Company's rate for power against the Toledo Edison Company has been appealed to the Supreme Court of Ohio on error. Both Common Pleas and Appeals Court at Toledo have held against the city's contention that the case is one in which the Public Utilities Commission alone has jurisdiction. Present power rates represent a voluntary reduction from the original rates in effect for nearly 3 years under the Milner ordinance. The rate now is 0.9 cent per kilowatt-hour consumption plus a service charge of \$23,000 a month. The original rate was 1.2 cents a kilowatt-hour. Through court action the city has sought to recover about \$200,000 overcharges during the time the higher rate was in effect.

Railway Wins Cross-Town Bus Permit.—The Public Utilities Commission of the District of Columbia recently authorized the Washington Railway & Electric Company to operate a cross-town bus line between 37th and S Streets and 10th and E Streets, Northwest. The order stipulated that the rate of fare to be charged should be the same as the current rate of fare on street railway lines, except that transfers between cars and buses should be sold at the rate of 2 cents each and will be sold only upon the payment of 8 cents cash fare. The bus line was authorized to start on or before March 1, 1925. The railway company was also authorized to extend its present Potomac Park bus route. At the same time the application of the Washington Rapid Transit Company, which operates in the city of Washington and elsewhere in the District of Columbia independently of the railways, to supply cross-town bus service was rejected.

Insurance Policies Distributed.—For the third year, at Christmas, 1924, the Interstate Public Service Company, Indianapolis, Ind., distributed life insurance policies to employees who had been in the service a year or longer. The total amount of the policies distributed this past Christmas was \$2,191,000 to 1,123 employees. Of this the company paid premiums on \$1,134,600. The employees subscribed for an additional sum of \$956,800, through a special advantageous arrangement made by the Interstate with the company writing the insurance.

Financial and Corporate

\$16,500,000 Atlanta Valuation Figure Questioned

The Georgia Railway & Power Company, Atlanta, Ga., will not accept the Beeler survey figure of \$16,500,000 as the valuation of its railway property for rate-making purposes. This was indicated on Feb. 13 when officials of the company appeared before the special traction committee of the Atlanta City Council to push their contention that the valuation should be \$24,094,708, or approximately \$7,500,000 above the Beeler report figures.

Various evidences of the value of the company's physical properties as listed in the Beeler report are as shown in the following:

1. Historical appraisal as of Jan. 1, 1924, \$13,054,004.
2. Foregoing adjusted to Jan. 1 price levels, less observed depreciation, \$16,337,206.
3. Market value of securities, \$16,164,023.
4. Capitalized net earnings under proposed plan of operation, \$15,073,244.
5. Reproduction cost new less accrued depreciation, \$18,252,109.
6. Reproduction cost new less observed depreciation, \$17,495,531.
7. Reproduction cost new less accumulated reserve, \$17,517,544.
8. Reproduction cost new, \$19,515,720.
9. Reproduction cost new less non-essential construction, \$18,905,102.

The final judgment of the Beeler report was that a valuation of \$16,500,000 should be set upon the property for rate-making purposes.

Preston A. Arkwright, president of the Georgia Railway & Power Company, in asking for a higher valuation of property, said:

The Beeler Organization survey was made before jitneys were barred from the city. It took into consideration all traffic conditions, including jitneys. We think the valuation figure too low and are presenting our side of the question to the City Council, believing the actual physical value of the property to be at least \$24,000,000 instead of the \$16,500,000 given in the Beeler report.

J. L. McLendon, chairman of the special committee considering the seven points of the relief petition of the Georgia Railway & Power Company, stated recently that the committee will meet soon to consider other phases of the petition.

In connection with the valuation matter the Beeler report said that consideration had been given to all evidence tending to determine the original cost of construction of the present plant, the amount and market value of the bonds and stock of the company, the present as compared with the original cost of construction, the probable trend of railway construction costs in the future, the estimated earning capacity of the property under particular rates, the sum required to meet operating expenses, the age and probable useful life of the various items of the property, the exhaustion, wear and tear, obsolescence and inadequacy, the manner in which it has been maintained, the amounts expended for maintenance, the present operating condition of the property and the amounts accumulated on the company's books

in the reserve for renewals and replacements.

It will be recalled that the ordinance virtually eliminating jitney competition with the railway was passed by the City Council and has now been approved by Mayor Sims. In addition to asking elimination of jitneys, other matters suggested in the relief petition of the company are: Increase of cash fares to 10 cents, tickets to be sold at the rate of 6½ cents each; 2 cents charge for transfers; reasonable revision of its operating routes; elimination of unnecessary stops; relief to the extent necessary of all gross receipts tax and relief to the extent necessary of all street paving charges.

Allows Partial Abandonment in Yonkers

The New York Public Service Commission issued an order on Feb. 13 consenting to the abandonment by the Yonkers Railroad of certain of its routes in the city of Yonkers. The commission disapproved the abandonment by the company of the Nepera Park line on Nepperhan Avenue without prejudice to a renewal of that application on changed conditions or further proof. Concerning the claim of the city that sums paid to the Union Railway for use of its tracks for inter-city business were excessive, Commissioner Semple said that he was not convinced that these charges were excessive. He thought the contract fair to the Yonkers company and that if it were deemed fair by the Union Railway its continuance was very much in the public interest in giving convenient access to the station of the Interborough company by the Yonkers people. On the subject of bus applications Commissioner Semple said that he thought the company was entitled to the approval of its declaration of abandonment without regard to any applications either by the company or by other persons for consent of the Yonkers city authorities to the operation of buses on routes which might serve localities now served by the railroad and desired to be abandoned.

Refinancing Plan at Columbus, Ohio, Approved

The \$25,000,000 refinancing plan of the Columbus Railway, Power & Light Company, Columbus, Ohio, as proposed by former President Charles L. Kurtz and amended at a special stockholders' meeting on Jan. 28, was passed by the stockholders at another special meeting held at Columbus on Feb. 10.

The amended plan gives the stockholders 6½ per cent per annum on the series B preferred and in exchange for each share of series B the holder will receive one share of the new and 25 cents. The holder of the present series A preferred will receive for every 100 share 105 of the new series A, which will provide the shareholder an income of 6½ per cent. All preferred stock will lose its voting power and the series B will have a retirement value of 110. Common stock will be exchanged on the basis of two shares for one.

It is pointed out that with the amendments to the Kurtz readjustment plan an additional \$500,000 will be gained by the company.

Following the adoption of the refinancing plan, the stockholders decided to issue 30,000 shares of non-par common stock at \$57.50, subject to the approval of the State Utilities Commission. In putting the new common on the market at 57½ and in giving holders two of the new shares for one of the old, the price of the common stock is kept at 115, the price paid by Cyrus S. Eaton, Cleveland, who recently secured a controlling interest in the Columbus company.

It was estimated that approximately \$9,000,000 will be needed to provide for the growth of the power and light company during the present year. Included in this estimate is the cost of the new power station which is being erected 8 miles south of Columbus at a cost of \$6,000,000. It is expected the new plant will be completed by next fall.

Surplus Increases on New York State Railways

A comparative statement of the earnings and expenses of the New York State Railways, Rochester, for the years ended Dec. 31, 1924 and 1923, was recently submitted by President Hamilton to the stockholders. The report follows:

	1924	1923
Railway operating revenues.....	\$10,358,198	\$10,800,517
Railway operating expenses (including depreciation).....	7,257,744	7,706,178
Net revenue railway operations.....	\$3,100,453	\$3,092,339
Net revenue auxiliary operations.....	665	2,482
Net operating revenue.....	\$3,101,119	\$3,094,821
Taxes assignable to railway operations.....	711,305	797,121
Operating income.....	\$2,389,814	\$2,297,699
Non-operating income.....	125,071	76,868
Gross income.....	\$2,514,886	\$2,374,568
Deductions from gross income.....	1,478,478	1,451,177
Net income.....	\$1,036,407	\$923,391
Sinking fund appropriations.....	34,636	34,129
Dividends preferred stock..... (5%)	193,125	(5%) 195,125
Earned on common stock..... (4.05%)	\$808,645	(3.49%) 696,136
Dividends common stock.....		(2½%) 448,762
Surplus.....	\$808,645	\$247,374

Steady Progress Reported from St. Louis

At the annual meeting of the United Railways, St. Louis, Mo., on Feb. 10 officers were re-elected. The reorganization committee reported the progress of its work to date and the adoption of the plan for the reorganization made public last November. The report of this committee was approved.

One of the next important steps to be taken by the reorganization committee is the securing of a new city franchise. This matter, however, will be permitted to remain dormant until after the municipal election in April. In that way the possibility will be avoided of injecting the franchise matter into the political battle.

A bill of complaint alleging that a number of prominent St. Louisans who have been or are connected with the United Railways as officers or stockholders mismanaged the company and its finances, with a resultant loss to other stockholders, was filed with the United States District Court at St. Louis on Feb. 9 by counsel for John B. Downing and Robert C. Delbridge, stockholders of the company. The bill asks that those complained against be held accountable for any losses the company may have sustained through the alleged mismanagement.

The traffic on the United Railways' lines aside from the Missouri Electric Railway fell off in January compared with the similar month in 1924. The gross receipts for the city lines in January approximated \$1,571,000, against \$1,683,000 in January, 1924. The Missouri Electric showed \$11,000 against \$14,000.

Interurban, Long in Receivership, Now Paying

An offer has been made to the preferred stockholders of the Buffalo & Erie Railway, Buffalo, N. Y., to exchange their preferred stock for the A and B stock of the International Utilities Corporation. The sponsors for the offer are Chandler & Company, New York City. As organizers of the International Utilities Corporation that firm recently took over the bonds of the Buffalo & Lake Erie, with all common stock, and issued 5 per cent preferred stock, amounting to 7,005 shares, in exchange. This preferred would now be exchanged for the shares of International Utilities on the following basis:

Each share of the preferred stock of the Buffalo & Erie Railway will receive one-half share of the Class A stock and one-half share of the Class B stock of International Utilities. The Class A shares are quoted in the market at around 47 and the Class B around 13.

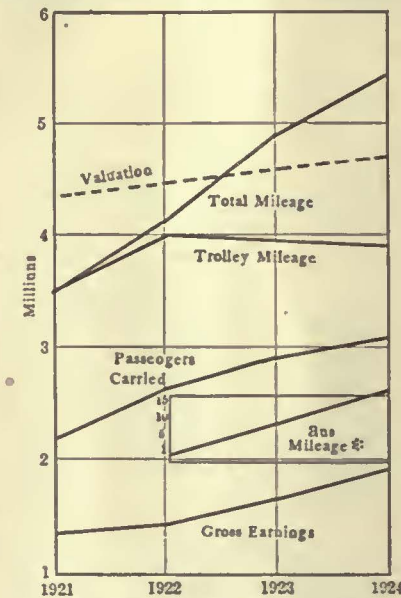
The reorganization agreement that was submitted to the bondholders of the Buffalo & Lake Erie Traction Company, the predecessor of the Buffalo & Erie Railway, which has been in receivership since the bonds went into default in 1912, provided for the organization of two new companies, the Buffalo & Erie Railway and the Erie Railways.

Since taking charge last September, Chandler & Company have not only

improved service on the traction lines, but through the adoption of one-man cars and the application of more intensive methods of selling have put the line on a paying basis. The Buffalo & Erie serve a population of 700,000. It operates 125 miles of track, with 41 miles over private right-of-way.

Youngstown Operates at Profit

For the first time since Jan. 16, 1919, when the service-at-cost franchise of the Youngstown Municipal Railway became effective, has the company shown a profit after paying all costs, and a 7 per cent return on the capital investment. This was in December, 1924. The actual profit was \$187 for the 31-day period. Gross revenue for the month was \$185,413. The operating cost was \$185,413, divided as follows: \$110,819, actual cost of operation;



* Bus mileage plotted in hundred thousands

Four-Year Record of Youngstown Operation

\$45,435, cost of maintenance; \$1,739, taxes; \$27,418, return on investment.

While the actual surplus was only \$187, the book surplus shows a profit of \$2,575, placed in the stabilizing fund. This difference between the book profit and the actual surplus is the difference between \$5,196 saved on the allowed operating expenses and the \$7,585 expended for road improvements, a difference of \$2,388. When this sum is subtracted from the book balance it gives the \$187 surplus.

In the annual report, Dec. 24 has been marked as the biggest day of the year. This, Christmas eve, showed that 123,000 passengers were transported by the buses and trolleys. For the month of December 479,493 passengers were carried. Earnings per car-mile were 38.70 cents, while the operating costs were 38.66 cents.

For the year there was a deficit of

\$217,041 owing the Pennsylvania-Ohio Power & Light Company, the parent company. This is the difference between the amount allowed under the 7 per cent return ruling and the amount actually paid by the company. The return allowed under the franchise was \$321,584, while the amount paid was \$104,543. This deficit was added to the deficit which has accumulated during the last five years.

Gross revenue for 1924 was \$1,909,908. The cost of operation was \$1,262,388; cost of maintaining the lines, \$447,612; taxes, \$95,364; return on the investment, \$321,584, leaving the deficit \$217,041.

During the four-year period from 1921 to 1924 there has been a steady increase in the gross revenue, mileage traveled and passengers hauled.

Bus service was started in 1922. The valuation of the road has been increased from \$4,406,071 on Dec. 31, 1921, to \$4,760,327 on Dec. 31, 1924.

Sale of Portland Properties to Be Consummated

More than 29,000 shares of stock of the Cumberland County Power & Light Company, Portland, Me., have been deposited in acceptance of the purchase offer of Albert Emanuel Company, New York. Settlement will be made Feb. 16. The purchase price is \$136.50 a share. Of the total of 30,000 shares, 16,000 were owned by E. W. Clark & Company, Philadelphia, and J. & W. Seligman & Company, New York. In accordance with the agreement for sale of these shares a similar offer was made to minority holders. According to the offer the purchasers reserved the right not to consummate the sale unless they secured 25,000 shares.

Reference to the offer of purchase was made in the ELECTRIC RAILWAY JOURNAL for Jan. 31, page 201. Included in the properties is the Portland Railroad, which operates 105 miles of city and suburban railway.

Pensacola Property Taken by Alabama Power Interests

Interests closely affiliated with the Alabama Power Company, Birmingham, Ala., have acquired the Pensacola Electric Company, Pensacola, Fla. Plans are under way for the extension of hydro-electric service from the Alabama company's system in South Alabama to Pensacola and other cities of North Florida.

The effect of the sale of the Pensacola Electric Company, it is believed, will be to make it an operating subsidiary of the Alabama Power Company. The Pensacola company is controlled by Stone & Webster. It operates 25 miles of electric railway. For some time the property has been under the direction of J. G. Holtzclaw as receiver.

TRAFFIC AND MILEAGE STATISTICS OF YOUNGSTOWN MUNICIPAL RAILWAY

Year	Earnings	Passengers	Car-Miles	Bus-Miles	Total Miles
1921.....	\$1,463,352	21,703,998	3,579,532		3,579,532
1922.....	1,491,095	26,337,168	4,010,067	112,901	4,122,968
1923.....	1,707,530	28,807,622	3,979,806	919,557	4,899,364
1924.....	1,909,908	30,526,353	3,885,882	1,511,091	5,396,973

Auction Sales in New York.—At the public auction rooms of A. H. Muller & Sons there were sold this week 465 shares of collateral trust certificates of the Chicago Elevated Railway, Chicago, Ill., prior preferred participation shares, \$37 lot.

Abandonment Application Turned Down.—The California Railroad Commission has denied the application of the Pacific Electric Railway for permission to suspend operation and remove the tracks of its Brockton Avenue line in Riverside, but has granted permission to the applicant to abandon service on the Seventh Street and Fairmont Park-Victoria Avenue lines. The railway alleged that the traffic did not warrant the expense of maintenance of the service and that the company was faced in the immediate future by the necessity of assuming heavy expense on account of paving. The commission found that the Brockton Avenue line was paying a small return and its abandonment would not be warranted.

Ottawa Electric Pays \$279,075.—The directors of the Ottawa Traction Company, Ottawa, Ont., recently submitted their report for the year ended Dec. 31, 1924. This company owns the Ottawa Electric Railway, which operates the railway system in Ottawa. The amount received from the Ottawa Electric Railway during the year was \$279,075, with which was paid the usual quarterly dividend of 1 per cent and a bonus of 1 per cent. The report states that 20 new pay-as-you-leave cars have been purchased and are now in operation. A great deal of track construction work was completed during the year. A large modern carhouse and repair shop, now under construction in the west end of the city, is expected to be ready for use early this spring.

\$17,650,000 Debentures to Be Retired.—It is announced from Montreal, Que., that the Montreal Tramways will retire \$17,650,000 of its debentures by exchanging them for 30-year general mortgage bonds. The first mortgage bonds, of which \$21,351,000 are outstanding, will be closed at \$25,000,000. Both steps are in connection with the plans to round out the company's financial structure.

Interurban Sold at Auction.—The Columbus, Newark & Zanesville Electric Railway, with headquarters and terminal at Columbus, Ohio, was sold at public auction at Newark, Ohio, on Feb. 3. The property consists of two divisions. The Columbus and Buckeye Lake division brought \$400,000 and the Newark and Zanesville division \$350,000, both figures being the minimum price fixed by the court. Howard C. Johnson bought the first parcel, and John C. Jones the second. Both buyers represent the bondholders. James R. Fitzgibbons, attorney for the company, said that after the reorganization has been effected, plans already made for improving the property would be carried out.

Office and Carhouse Sold.—The terminal and carhouse of the Trenton & Princeton Traction Company at West Hanover and Warren Streets and Chancery Lane, Trenton, N. J., has been sold to William A. Weimann. Trolley

cars will continue to use the terminal under a lease but the railway will erect an office and carhouse some distance from the center of the city.

Preferred Stock Offered.—A syndicate including Hambleton & Company, Baltimore, Md., is offering at \$96 a share and accrued dividend yielding about 7.30 per cent 15,000 shares of the Southern Power & Light Company's cumulative participating preferred stock, no par value. The Southern Power & Light Company controls by ownership of all of the common stock the Louisiana Power Company, the Louisiana Power & Light Company, the Mississippi Power & Light Company and indirectly, through the Arkansas Light & Power Company, the Pine Bluff Company. The properties of the subsidiaries include 37 miles of electric railway.

Sale of Power Plant Arranged.—The price at which the North Avenue power house in Youngstown, Ohio, is to be returned by the Youngstown Municipal Railway to the Pennsylvania-Ohio Electric Company has been agreed on at \$600,000, the price paid by the city to the P-O when the city took over the plant. The power rate which the Municipal would have to pay the P-O after the station is returned has not been established because the two parties were unable to agree on the efficiency of the Pennsylvania-Ohio company's equipment which must be used in converting the city's power from alternating to direct current. It has been agreed to leave final decision in the matter of conversion equipment in the hands of chief engineers of the Westinghouse Company and the General Electric Company. They will be asked to submit figures on the new equipment such as would be necessary to convert to direct current the amount of alternating current required by the city.

New Directors Elected.—H. B. Voorhees, general manager of the Cincinnati division of the Baltimore & Ohio Railroad and Joseph B. Verkamp, clothing manufacturer, were elected directors of the Ohio Traction Company at the recent annual meeting of the stockholders. They succeed Bayard Kilgour and A. J. Becht, president and secretary respectively of the Cincinnati Street Railway. The Ohio Traction Company is the parent company of the Cincinnati Traction Company, which operates the street railway system in Cincinnati under lease from the Cincinnati Street Railway.

Bonds Being Offered.—The issue of \$2,116,000 of first and refunding mortgage gold bonds of the Worcester Consolidated Street Railway, Worcester, Mass., referred to in the ELECTRIC RAILWAY JOURNAL, issue of Feb. 14, is being offered by Harris, Forbes & Company, Inc., Blodget & Company, Paine, Webber & Company and the Old Colony Trust Company of Boston. The bonds are selling at 97½ and interest to yield 7 per cent. The coupon rate is 6½ per cent. The bonds are dated Aug. 1, 1910, and are due Aug. 1, 1930. The proceeds will be used to refund \$1,771,000 of debt and to provide additional working capital.

Equipment Trust Plan Approved.—Authority has been granted the New York, New Haven & Hartford Railroad by the Interstate Commerce Commission to assume liability for \$3,645,999 of equipment trust certificates to be issued by the First National Bank, Boston, covering the advance rental necessary to procure equipment, which will include: Thirteen electric motor cars, five alternating-current electric locomotives, two alternating-current electric switching locomotives, two direct-current electric switching locomotives and one gasoline-electric plough.

Stock Sale Sanctioned.—Approval of the sale of 250,000 shares of no par value capital stock, at \$10 per share, by the Public Service Transportation Company, the bus service affiliated with the Public Service Railway, has been granted by the New Jersey Board of Public Utility Commissioners. The company will use the proceeds for the purchase of new buses and repay advances made to the corporation for purchases of buses.

May Make Offer for Company in Receivers' Hands.—Samuel H. Barker, representing interests which have not been named, may make an offer of \$250,000 for the Frankford, Tacony & Holmesburg Street Railway, Philadelphia, Pa. The company was placed in the hands of receivers following such request in Common Pleas Court on Jan. 20 this year. At that time it was pointed out by petitioners for the receiver that unless prompt action were taken operation would cease. The company operates 17.29 miles of track, 1.11 miles of which are leased from the Philadelphia Rapid Transit Company. It owns 42 passenger cars.

Receiver Named.—Judge Sanderson of the Massachusetts Supreme Court recently appointed Franklin T. Miller, president of the Boston & Worcester Street Railway, Framingham, Mass., as receiver for the company. Plans for the reorganization of the company are under way, as noted in recent issues of the ELECTRIC RAILWAY JOURNAL.

One Mile Abandonment Allowed.—Approval of the Public Service Commission to the abandonment by the Westchester Electric Railroad of about 1 mile of its route in the villages of Bronxville and Tuckahoe, N. Y., was granted on Feb. 13. The order requires the company to remove at its own expense its track and overhead structure and restore the streets to good condition.

Interurban Operation Successful.—Profit from interurban operations offset a \$24,500 loss for the Stark Electric Railroad, Alliance, Ohio, during 1924. During the year the city service showed a loss of \$20,053 while the freight service showed a loss of \$3,494. Receipts from interurban fares more than offset these deficits and placed a small fund in the treasury at the close of the year. During the 12 months 976,329 city passengers were carried and 2,076,812 interurban. Passenger cars covered 933,616 miles and freight cars 39,038. The Stark Electric Railroad operates from Salem to Canton, Ohio, a distance of 32 miles with city car service in Alliance only.

Personal Items

Messrs. Thornton, Blair and Lindsay Advanced at Montreal

Kenneth B. Thornton has been appointed assistant general manager of the Montreal Tramways, Montreal, Que. This is a new office in the company, rendered necessary by increased pressure of work. Mr. Thornton will act as assistant to Lieut.-Col. J. E. Hutcheson, vice-president and general manager of the company. Mr. Thornton was formerly general manager of the Canadian Light & Power Company and the Quebec & New England Hydro-Electric Corporation and consulting engineer for the Montreal Tramways.

D. E. Blair, formerly superintendent of rolling stock, has been appointed general superintendent of the tramway.

A. M. Lindsay, formerly connected with the rolling stock department of the tramway, will replace Mr. Blair as superintendent of rolling stock.

Mr. Blair has been with the tramways for the past 21 years. He is now president of the Canadian Electric Railway Association. He has worked his way up with the company from a comparatively minor position. He started his career with the Quebec Street Railway. A portrait and a biography of Mr. Blair were published in the *ELECTRIC RAILWAY JOURNAL* for June 21, 1924.

No Successor Selected to Mr. Kurtz

No successor has been chosen to Charles L. Kurtz, who refused to let his name go on the nomination list for president of the Columbus Railway, Power & Light Company, Columbus, Ohio, at the directors' meeting on Jan. 27. Clarence C. Slater was named vice-president and general manager and has been acting in official capacity since the meeting.

Frank T. Hulswit, president of the United Light & Railways Company, which through the United Light & Power Company secured control last August of the Continental Gas & Electric Corporation, which in turn has come into control of the Columbus Railway, Power & Light Company, declared on Feb. 10 that no one was being considered at the present for the presidency, although he said some one would be considered in the near future for this office.

Norman McD. Crawford, who resigned as vice-president of the company before the directors' meeting, effective on March 1, will stay until March 15.

A. L. C. Fell, until recently general manager of the London County Council Tramways, London, England, has accepted an invitation from the council of the Tramways and Light Railways Association to become a vice-president of that body. The invitation was extended to Mr. Fell as "a mark of sincere appreciation of his valuable services so long and so wholeheartedly placed at the disposal of the associa-

tion." It will be recalled that Mr. Fell a few months ago retired from the managership of the London tramways on account of ill health. No permanent successor to him has yet been appointed, but the County Council recently constituted a sub-committee to consider the subject. Meantime J. K. Bruce continues as acting manager.

George William Allan New President at Winnipeg

George William Allan was recently elected president of the Winnipeg Electric Company, Winnipeg, Man. He is the senior partner in the law firm of Munson, Allan, Laird, Davis, Haffner & Hobkirk, Winnipeg. The firm of Munson & Allan was formed



G. W. Allan

in 1882, and Mr. Allan has been an active member since that time. His firm was formerly general solicitor for the Winnipeg Electric Company.

Mr. Allan, who succeeds as president Sir Augustus Nanton, was educated at Upper Canada College, Galt Collegiate Institute, Trinity College School, and Trinity College University, and is a graduate of the latter. He was a member of the House of Commons for South Winnipeg from 1917 to 1921. For some years he has been actively associated with a number of companies doing business in western Canada, and he occupies the following among other positions: Director Canadian Bank of Commerce; member Canadian Committee of the Hudson's Bay Company; director Canada Permanent Mortgage Corporation; National Trust Company, Ltd.; Great West Life Assurance Company; the Northern Trust Company; the Northern Mortgage Company of Canada; the Canada Cement Company, Ltd.; Manitoba Bridge & Iron Works, Ltd.; Beaver Lumber Company; Home Investment & Savings Association; Guarantee Company of North America, and Beaver Fire Insurance Company. Mr. Allan was born at Moss Park, Toronto. He is a son of the late Senator G. W. Allan, P. C.

George W. Wells has been appointed vice-president and general manager of the Interstate Consolidated Street Railway and the Attleboro Branch Railroad, Attleboro, Mass., which have been taken over by Hemphill & Wells, New York City. Mr. Wells has long been connected with the street railway industry. For a number of years he was manager for one of the properties of Stone & Webster and before that was connected with the General Electric Company. He is a brother of Gardner F. Wells, one of the members of the firm that has taken over the roads.

P. C. Rideout has succeeded George M. Todd as superintendent of transportation of the Cumberland County Power & Light Company, Portland, Me.

H. B. McCune of Cleveland has succeeded Winchell G. Yates as superintendent of track and railway of the Wheeling Traction Company, Wheeling, W. Va. He was connected with Charles Clark, railway superintendent, previous to going to Wheeling.

F. H. Patterson has succeeded C. C. Bullock as superintendent of transportation of the Shreveport Railways, Shreveport, La.

F. S. Hunnewell, who has been superintendent of both the Interstate Consolidated Street Railway and the Attleboro Branch Railroad, Attleboro, Mass., has returned to the employ of the New England Investment & Security Company, Springfield, Mass., officers of which were also officers of the Attleboro properties. The two roads first mentioned were recently taken over by Hemphill & Wells, New York City.

C. F. Crockett has replaced V. M. Ake as secretary-treasurer of the Municipal Street Railway, Alexandria, La.

R. L. Clifford, formerly with the Toronto & York District, Ontario Hydro-Electric Railways, engineering department, has been appointed superintendent of the Peterborough Radial Railway, at Peterborough, Ont., which is operated as the Peterborough District, Ontario Hydro-Electric Railways, at Peterborough. He reports to W. R. Robertson, general superintendent of the Hydro-Electric Power Commission of Ontario's railways department, Toronto.

W. E. Bainhart has been appointed secretary of the Kansas City, Kaw Valley & Western Railway, Bonner Springs, Kan. O. S. Lamb is superintendent in charge of operation.

J. L. Puckett has replaced R. O. Bethea as electrical engineer and engineer of overhead construction of the Hattiesburg Traction Company, Hattiesburg, Miss.

J. W. Corbett has succeeded L. Va Voie as purchasing agent of the Canadian National Railways with offices at Toronto, Canada.

George R. Lunn, Schenectady, N. Y., former Lieutenant-Governor, has been nominated a member of the New York State Public Service Commission to succeed Oliver C. Semple, New York, whose term of office expired Feb. 1. The appointment is for a term of 10 years at a salary of \$15,000 a year. Governor Smith has transmitted the nomination to the Senate for approval.

Manufactures and the Markets

News of and for Manufacturers—Market and Trade Conditions
A Department Open to Railways and Manufacturers
for Discussion of Manufacturing and Sales Matters

\$700,000 for Interurban Extension

The New York, Westchester & Boston Railway, New York City, plans immediate construction of a line to Larchmont Gardens and Mamaroneck at a cost of \$700,000.

Contracts have been awarded to Dwight P. Robinson & Company for the construction and the two municipalities probably will be linked with the metro-urban early next fall. The New York, Westchester & Boston will finance the project without any assistance from the New York, New Haven & Hartford Railroad.

Upon completion of the enterprise the company will have upward of 80 miles of track in operation between its metropolitan terminals and 25 suburban communities. The next step in the New York, Westchester & Boston expansion program will be an extension to Harrison, Rye and Portchester.

The new construction will be double track, with freight and terminal sidings, steel and concrete construction and overhead grade crossings.

When the road ran its first trains the aggregate population of the seven largest municipalities it tapped was 137,000. Today the population approaches 230,000. The combined assessed valuations were \$16,000,000. Today they are approximately \$429,030,000. In a statement which he made L. S. Miller, president of the railway, said:

The purposes of the builders of this road are looming toward fulfillment. Month by month the territory we serve is becoming more prosperous and more productive of traffic revenue.

In our first full year of operation we carried 2,874,000 passengers. Last year we carried 10,000,000. In our first year we

operated under a deficit, before taxes, of \$1,000,000. Our 1924 report will show that we operated upon a credit, before taxes, of more than \$530,000.

Our facilities for increased service with the addition of more rolling stock to the present equipment are immeasurable. We could transport 100,000,000 persons this year without difficulty.

The metro-urban is fast reaching the point where it will cease to be a liability to the New Haven and will become an important asset.

Brill Profits Smaller

For the year 1924 the combined output of the four plants of the J. G. Brill Company, Philadelphia, Pa., amounted in sales value to \$8,721,726. The combined output for each of the past 7 years was as follows:

1918	.....	\$16,761,154
1919	.....	14,210,622
1920	.....	17,537,293
1921	.....	7,647,898
1922	.....	10,177,582
1923	.....	18,167,486
1924	.....	8,721,726

After deducting from earnings all cost of operations, including maintenance and repairs for the year amounting to \$410,658, and after setting aside out of earnings reserves for depreciation of plant and equipment of \$252,795 and for Federal and State income taxes, not yet due, of \$92,310, the result of the operation of all the plants shows a net profit for the year of \$577,761.

It is explained that development work undertaken in connection with gasoline-propelled cars for use on steam railroads progressed satisfactorily during the past year and that the management believes, from present indications, that this branch will show very satisfactory growth the present year.

The amount of work on hand on Dec. 31, 1924, was approximately \$4,250,000, compared with \$3,500,000 on Dec. 31, 1923.

\$10,000,000 Shop Development for Brooklyn

Plans for the construction of one of the most complete repair shops and yards ever devised for passenger train service have been completed by the Board of Transportation of New York City for the Brooklyn-Manhattan System. In connection with this development bids have been invited and received for the construction of the foundation for the main repair shop and the inclosure of the electrical repair shop at Shell Road and Avenue X, Coney Island. The several buildings when completed will embrace an area of 65 acres with floor space of 475,000 sq.ft., affording storage capacity for 1,000 cars and inspection pits for 64 cars, as well as wharfage facilities on Coney Island Creek. The plant when finished will cost approximately \$10,000,000.

Seventeen contractors bid on the foundation work for the main repair shop and twelve contractors bid on the electrical repair shop inclosure. The total number of items in both jobs is 136.

The main repair shop building will be sufficient in its capacity and equipment to maintain in service and in a state of repair 3,000 steel cars of the type now in use on the Brooklyn-Manhattan Transit Corporation system. The main building of the proposed new group will contain machine shops, service shops, track assembly, motor and track shops, foundry and blacksmith shops, wheel and axle shops, carpenter shops, lumber storage, paint shops, cotton waste and oil storage and car washing stands.

The electrical repair shop soon to be inclosed will be for all motors and motor parts and for every electrical phase of motor and trail car used in rapid transit service.

The proposed improvement of the bulkhead and wharfage facilities on the shore of Coney Island Creek will provide for docking of scows, floats and barges from which to unload coal, rails, ties, timber and general freight for the maintenance and supply of the entire plant.

Mack's Bus Business Expanding

The Mack management is said to be devoting its entire energies and financial resources to the further expansion and development of its business, particularly in the bus division. Whereas in 1923 Mack was almost entirely a manufacturer of commercial trucks, its volume of bus business last year approached 20 per cent of the total, and at the rate of current expansion it is not unlikely that by the end of this year Mack's bus production will be close to the level of its truck operations.

Shipments of all classes of products for 1924 exceeded any previous years, and orders for December and January were in excess of any previous December and January in the company's history.

CONSOLIDATED PROFIT AND LOSS ACCOUNT OF THE J. G. BRILL COMPANY AND SUBSIDIARIES FOR THE YEAR 1923 AND 1924

	1923	1924
Total net sales billed.....	\$18,167,486	\$8,721,726
Cost of sales, including operating, selling, administration and general expenses and depreciation for the year.....	15,525,021	6,212,337
Miscellaneous income.....	\$2,642,465	\$509,389
	101,937	160,681
Operating profit.....	\$2,744,402	\$670,071
Less reserves:		
For Federal and state income taxes.....	\$347,896	\$92,310
For special depreciation.....	150,000	
For development of gasoline-propelled vehicles.....	100,000	
	597,896	92,310
Net profit to surplus.....	\$2,146,506	\$577,761
Earned surplus at Dec. 31.....	\$3,582,971	\$4,985,196
Less:		
Adjustments of patents and good will.....	\$199,670	
Miscellaneous adjustments—credit.....	16,499	
	183,171	\$96,538
	\$3,399,800	\$4,888,657
Add profit as above.....	2,146,506	577,761
	\$5,546,306	\$5,466,418
Less dividends paid:		
Preferred.....	\$320,600	320,600
Common.....	240,510	240,510
	\$561,110	561,110
Earned surplus at Dec. 31.....	\$4,985,196	\$4,905,308

*Debit.

Metal, Coal and Material Prices

Metals—New York		Feb. 17, 1925
Copper, electrolytic, cents per lb.	14.50	
Copper wire base, cents per lb.	17.00	
Lead, cents per lb.	9.25	
Zinc, cents per lb.	7.77	
Tin, Straits, cents per lb.	57.00	
Bituminous Coal f.o.b. Mines		
Smokeless mine run, f.o.b. vessel Hampton Roads, gross tons	\$4.45	
Somerset mine run, Boston, net tons	2.125	
Franklin, Ill., screenings, Chicago, net tons	1.95	
Central, Ill., screenings, Chicago, net tons	1.875	
Kansas screenings, Kansas City, net tons	1.75	
Kansas screenings, Kansas City, net tons	2.50	
Materials		
Rubber-covered wire, N. Y., No. 14, per 1,000 ft.	\$7.25	
Weatherproof wire base, N. Y., cents per lb.	20.00	
Cement, Chicago net prices, without bags	2.20	
Lined oil (5-lb. lots), N. Y., per gal.	\$1.15	
White lead in oil (100-lb. keg), N. Y., cents per lb., carload lots	0.1297	
Turpentine (bbl. lots), N. Y., per gal.	0.935	

Rolling Stock

Coral Gables Utilities Company, Miami, Fla., has received three of the new cars to be operated between Miami and Coral Gables. The cars were built by the J. G. Brill Company and are of the same type as those used on the Miami municipal lines, but of slightly larger model.

Wisconsin Power & Light Company, Fond du Lac, Wis., has purchased four new buses of the parlor car type for use in Fond du Lac, Oshkosh, Waupun, Beaver Dam, Columbus and Madison.

Cleveland Railway, Cleveland, Ohio, has announced specifications of the 100 cars ordered last October. The plans for these cars were only recently approved by the City Council. The details of the cars follow:

Bullder of car body	Cleveland Railway
Type of car	Front entrance, center exit, motor
Seating capacity	56
Total weight	41,140 lb.
Bolster centers, length	25 ft. 1 in.
Length over all	51 ft. 2 in.
Truck wheelbase	6 ft. 0 in.
Width over all	8 ft. 4 1/2 in.
Height, rail to trolley base	11 ft. 0 1/2 in.
Body	Semi-steel
Interior trim	Cherry
Headlining	3-in. Agasote
Roof	Plain arch
Air brakes	Westinghouse DH-20
Armature bearings	Babbitt
Axles	4 1/2-in. carbon steel
Bumpers	10-in. formed channel front, 6-in. rear
Car signal system	N-L indicating
Car trimmings	Brass
Center and side bearings	Cleveland Railway standard
Conduits and junction boxes	Cleveland Railway asbestos-lined sheet steel
Control	Westinghouse K35-G
Couplers	Tomlinson Form 8, Type A
Destination signs	Hunter front and side
Door operating mechanism	Cleveland Railway manual control
Fare boxes	Cleveland
Fenders	Eclipse Type C
Gears and pinions	Tool Steel, spur
Hand brakes	Independent equalling
Heater equipment	Peter Smith
Headlights	Dayton pressed steel No. 1583-A
Journal bearings	Babbitt
Journal boxes	Symington, 1-F-9
Lightning arresters	Westinghouse MP.
Motors	Four Westinghouse 340, inside and outside hung
Paint	Cleveland Railway standard
Sanders	N-L No. 4 vacuum trap
Sash fixtures	Cleveland Railway new type
Seats	Longitudinal front, Brill & H-K rear
Seating material	Rattan
Slack adjuster	Anderson
Step treads	Kass
Trolley catchers	Eclipse Railway Supply
Trolley base	Nuttall No. 15
Trolley wheels	Cleveland Railway standard
Trucks	Brill 51-E-1 and 68-E-1
Ventilators	N-L type
Wheels	26-in. steel

Springfield Street Railway, Springfield, Mass., has ordered three Garford buses, each seating 21 passengers, for use on Union Street.

Georgia Railway & Power Company, Atlanta, Ga., has placed orders for the immediate delivery of 20 new, large and modern cars. These will be put into operation as the jitneys cease to run. It is also reported that the company will order 15 20-passenger buses.

Missouri & Kansas Railway, Kansas City, Mo., suffered the loss by fire recently of four motor cars and three trailers at the Strang line carhouse in Overland Park. The damage was estimated at \$100,000. It is said that arrangements are being made to rent additional cars.

Citizens' Traction Company, Oil City, Pa., ordered during January from the Fageol Motors Company, Oakland, Cal., two six-cylinder buses of street-car type.

Track and Line

Milwaukee Electric Railway & Light Company, Milwaukee, Wis., plans to double-track its 35th Street line from Clybourn Street to Wells Street, now a single-track line. As soon as this work is completed the 35th street line will be double-tracked along its entire length.

Worcester Consolidated Street Railway, Worcester, Mass., is considering the feasibility of including in its 1925 budget of expenses an appropriation for re-laying the car tracks on Park Avenue, Worcester. The cost will be about \$100,000.

Lehigh Valley Transit Company, Allentown, Pa., plans to relocate its roadbed through Center Valley and Coopersburg, Lehigh County, and to Zion Hill in Springfield Township. The idea of the relocation was broached by the State Highway Department last summer when the latter made announcement of the building this year of a concrete highway from Allentown by way of Quakertown to Spring House. If the company had remained on the highway it would have been compelled to rebuild its lines and place them in the center of the road. By the time the new private right-of-way is built it will mean an outlay of nearly \$500,000. The line will be a little more than 5 miles long, running from 300 to 1,500 ft. west of the present line. There will be ten crossings, eight at grade over lanes and two will be overhead.

Shops and Buildings

Puget Sound Power & Light Company, Seattle, Wash., has announced plans for a modern interurban train and bus station, to be located on Seventh Avenue and Olive Street to cost several hundred thousand dollars. The new terminal will be constructed around the west and south sides of the company's electric building. It will take the place of the present Everett interurban terminal on Sixth Avenue and Olive Street. The garage, storage yards and shops now occupying that

portion of the Olive Street property between the electric building and the Everett station will be moved to a modern building to be erected on a site owned by the company on Lake Union.

Trade Notes

Pure Carbon Company, Wellsville, N. Y., has appointed the Simpson Power Equipment Company as its Cleveland representative with offices at 7016 Euclid Avenue. The Pure Carbon Company has also announced the opening of a Detroit office in the General Motors Building.

Key System Transit Company has ordered full automatic Tomlinson couplers for 130 cars. These will be used to equip 12 new cars and to replace the present couplers on 118 old cars.

Hale-Kilburn Company, Philadelphia, Pa., has recently appointed H. Barney Gengenbach, with the title of Western sales manager, to its office in Chicago. Mr. Gengenbach has been acting Western sales manager for a year or more, since the death of Harry R. Rochester.

Hyatt Roller Bearing Company, Harrison, N. J., announces that H. A. Brown, Jr., general manager of sales, has appointed P. C. Gunion, for 6 years advertising manager of the Hyatt company, to a place on the sales board. Mr. Gunion will also head up the market research activities in addition to his advertising work. The Hyatt sales board is composed of the general manager of sales and his assistant, the advertising and research manager and the three sales managers in charge of the automotive, farm machinery and industrial divisions.

New Advertising Literature

Ditzler Color Company, Detroit, Mich., has issued an attractively arranged and cleverly prepared booklet entitled "Motor Bus and Taxi-Cab Colors." The folder in its illustrations offers some new and distinctive color combinations particularly adapted to the bus field. In its reading matter it proves that color is a sales argument recognized in many lines of business.

Uehling Instrument Company, Paterson, N. J., has issued bulletin 118-A, describing the principle of operation of the Apex pneumatic CO₂. The indicator of this meter is actuated by changes in pneumatic pressure developed by dry absorption of the CO₂.

Sawbrook Steel Castings Company, Lockland, Ohio, in an illustrated pamphlet, has announced the full operation of its foundry in the production of "high grade electric steel castings."

General Electric Company, Schenectady, N. Y., has issued bulletin 44103.1, describing the 60-ton oil-electric locomotive which it developed along with the American Locomotive and Ingersoll-Rand Companies. Illustrations showing the locomotive in service, views of the interior and tables of operating data and specifications, as well as a general description, are included in the booklet.



Peacock Staffless Brakes

Let a Real Railroad Man Tell You This!

Ask any experienced motorman what kind of hand brake he'd rather have you put on your cars.

He'll tell you to choose a brake that does not require a strong man to operate it—one that is powerful and quick acting—one that occupies small space—one that requires little attention—and one that will stop the car smoothly and swiftly no matter what the load or grade.

Peacock Staffless Brakes meet all these requirements most completely. They have the greatest chain winding capacity and the greatest leverage, yet they are simple in construction, low in first cost and economical in maintenance.

*Let us submit further details
and figures.*



National Brake Company

890 Ellicott Square

Buffalo, N. Y.

Canadian Representative

Lyman Tube & Supply Co., Ltd., Montreal, Can.

Bankers and Engineers

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115 Broadway, New York
PHILADELPHIA CHICAGO SAN FRANCISCO

The J. G. White Engineering Corporation

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ON
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Every Week

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Make your renewals and repairs on the overhead line with material that has stood the test, under the most exacting conditions, for over thirty years.

Anderson knows how to make good, dependable Line Material —always keeping abreast of the times, as the industry progresses, in the design and manufacture of improved material.

There's a big sense of satisfaction in installing Anderson's because you know you can *depend* upon any Line Material bearing that name.

We will be glad to forward you quotations on any Line Material we make.

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131 State St.
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When writing the advertiser for information or prices, a mention of the Electric Railway Journal would be appreciated.

Transmission Line and Special Crossing Structures, Catenary Bridges

WRITE FOR OUR NEW DESCRIPTIVE CATALOG

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RATE STUDIES FOR PRESENTATION TO PUBLIC SERVICE COMMISSIONS
CONSTRUCTION AND MANAGEMENT OF ELECTRIC RAILWAYS

230 South Clark Street
Chicago, Ill.

215 South Broad Street
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The Most Successful Men in the Electric Railway Industry read the

ELECTRIC RAILWAY JOURNAL

Every Week

Bureau of Commercial Economics, Inc. Industrial Engineers

Organization • Methods • Layout and Facilities
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72 West Adams Street • CHICAGO



Collier Service

A nation-wide
organization
building and
sustaining car
card advertising
space values



Barron G. Collier, Inc.

Candler Bldg.

New York

It's no fun to be a pavement in electric railway service—

Clank—clank!—a car goes over a rail joint and something has to absorb the impact.

Crunch—crunch!—a ten-ton truck lumbers across the tracks and the pavement catches the jolt.

Those things happen all the year around—and in addition—

—in winter, moisture freezing below presses upward with terrific force—

—in summer, the broiling sun expands the pavement until it is tempted to buckle and throw up the job—

—in wet and snowy weather, tire chains gnaw and chew at its surface.

Six-point-service—

I
absorbs impacts at rail joints

II
water-seals road-bed and ties

III
allows for contraction and expansion

IV
resists heaviest traffic

V
is easily removable for track repairs

VI
practically 100% salvage value

VITRIFIED
Brick
PAVEMENTS

It's all hard work being a pavement—that's why it's good business to put the job up to vitrified brick, asphalt-filled. It has the grit to stand the gaff.

OUTLAST THE BONDS

NATIONAL PAVING BRICK MANUFACTURERS ASSOCIATION, ENGINEERS BLDG., CLEVELAND, OHIO

Alton Brick Company Alton, Ill.	Moberly Paving Brick Company Moberly, Mo.
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All Railroads Realize the Importance

of a well built life guard—one that will prevent fatal accidents and may be depended upon in an emergency—also keep down maintenance costs.

THE H-B LIFE GUARD

Manufactured by the Consolidated Car Fender Co.

will do this for the reason that their high standard of quality and workmanship has never been lowered nor sacrificed to price and every guard they make is *built up to a standard—not down to a price*. Notwithstanding this our prices for H-B Life Guards and parts are most reasonable due to quantity production and standardized manufacture.

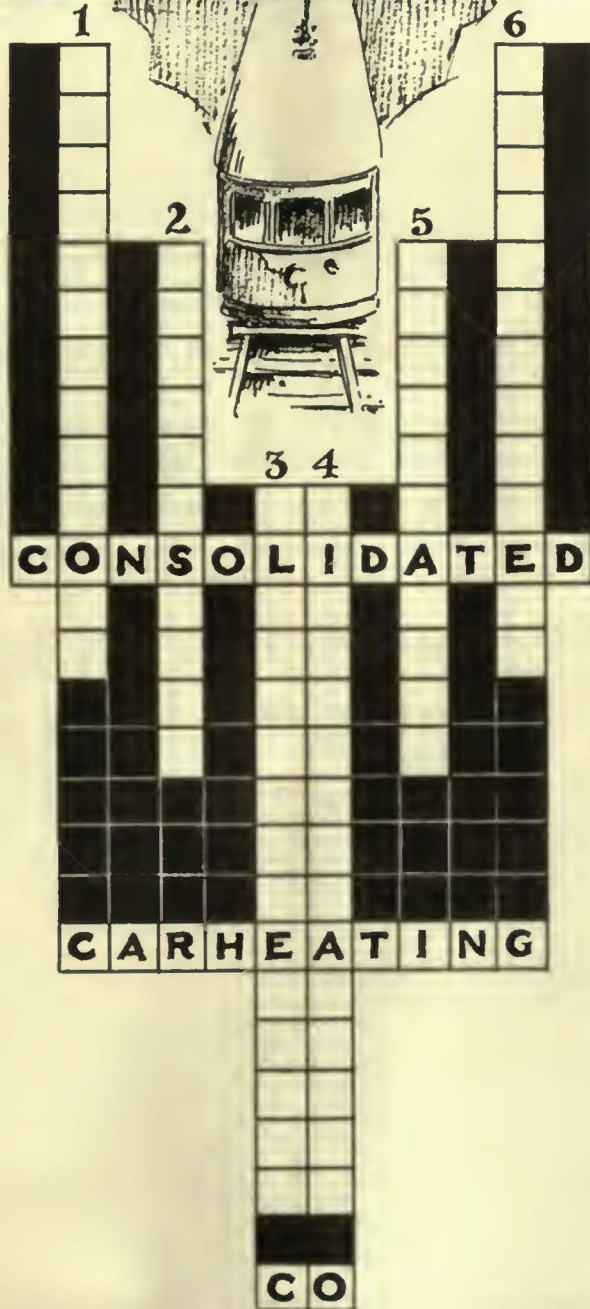
Our *Improved Providence Type H-B Life Guard* with all metal basket reduces maintenance to a minimum. It is interchangeable with our standard wood slat basket.

*When making up your new car specifications
be sure to specify*

“HB Life Guards Manufactured by the Consolidated Car Fender Co.”

Providence, R. I.

WENDELL & MacDUFFIE CO., Gen. Sales Agents
110 East 42nd St., New York, N. Y.



1. Passengers are protected from injury when entering and leaving a car by Pneumatic.....

2. A practically constant temperature is maintained by the automatic control by visible..

3. And this heat which is supplied by the many suitable types and sizes of..

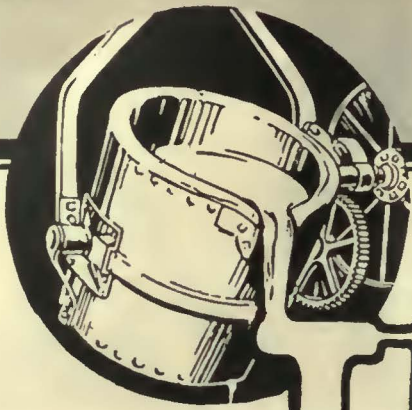
4. The motorman is informed when to start and stop his car by a complete and efficient.....

5. In closely crowded cars, well planned..... keep the air healthful for passengers.

6. In fact every thing for the..... and..... of operator and patron is made by this Company.

The solution appears in next week's advertisement!

CONSOLIDATED CAR HEATING COMPANY
 NEW YORK ALBANY, N. Y. CHICAGO



TISCO



3-WAY SWITCH LAYOUT DESIGNED FOR AN EASTERN RAILWAY

Special Trackwork

Our facilities for the production of this work are of the highest order. Whatever traffic conditions may be, we are prepared to design the proper trackwork. Our experience embraces all the stages of street railway development, and engineers are invited to avail themselves of it. The use of TISCO Manganese steel for trackwork originated in this company; we have developed its use to an unusually high degree of perfection.

Wm. Wharton, Jr., & Co., Inc., Easton, Pa.

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Wm. Wharton, Jr., & Co., Inc. / Tioga Steel & Iron Co.
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20,000 Tons

A record purchase of One Size

Relaying Rails

85 lb. A. S. C. E. Section with Angle Bars

MAIN LINE QUALITY

For immediate or deferred shipment

Quality Guaranteed

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Price 30% to 50% below cost of New Rails

Phone, write or wire for quotation



The Magnet
that pulls
your share of
this business



\$342,000,000 will be spent by electric railway companies during 1925 for new equipment, materials and supplies.

The "modernization program" is behind this tremendous expenditure. To keep pace with progress they must cultivate better public relations and this necessitates up-to-date maintenance.

Modern maintenance practices, methods and equipment will be featured in the March 21st issue of **ELECTRIC RAILWAY JOURNAL**.

The Annual Maintenance Number

This issue will blanket 99% of the buying power of the field. So that your instructions may receive the most careful attention, make immediate reservation for space and copy service.

Electric Railway Journal

Tenth Avenue at 36th Street, New York, N. Y.

**ANNUAL
Maintenance
Number**

**MARCH
21st**



SILENT!

Silent, smooth meshing gears minimize wear, tear, rattle, vibration and the resultant maintenance expenses.

NUTTALL HELICAL GEARS

Almost unbelievably quiet and smooth, Nuttall Helical gears are peculiarly suited to electric railway service.

Being scientifically correct in design, forged and heat-treated, Nuttall Gears are exceptionally enduring. They are guaranteed to last at least four times as long as ordinary gears and remain quiet and smooth in operation.

Nuttall gears will lengthen the life of equipment and cut gear costs in the bargain. Our free gear book tells you why.

R.D.NUTTALL COMPANY
PITTSBURGH  **PENNSYLVANIA**

All Westinghouse Electric & Mfg. Co. District Offices are Sales Representatives in the United States for the Nuttall Electric Railway and Mine Haulage Products. In Canada: Lyman Tube & Supply Co., Ltd., Montreal and Toronto.

Not Merely the Tie that Lasts—
 But the Tie that **ALSO MAKES**
 the Track Foundation
LAST!

A permanent tie is a great thing. But a permanent tie that helps make the track foundation permanent also is greater yet.

The Dayton Resilient Tie is such a tie. Embedded in concrete, it absorbs the shocks of traffic and prevents them from reaching and disintegrating the concrete foundation.

Its use in concrete really means then a permanent tie in a permanent foundation.

THE DAYTON MECHANICAL TIE CO.
 707 Commercial Building, DAYTON, OHIO

DAYTON *Resilient*
TIE



Drip Points for Added Efficiency

They prevent creeping moisture and quickly drain the petticoat in wet weather, keeping the inner area dry.

The Above Insulator—No. 72—Voltages—Test—Dry 64,000 Wet 31,400, Line 10,000.

Our engineers are always ready to help you on your glass insulator problem. Write for catalog.

Hemingray Glass Company
Muncie, Ind.

Est. 1848—Inc. 1870



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BARE COPPER WIRE AND CABLE

TROLLEY WIRE

WEATHERPROOF WIRE AND CABLE

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MAGNET WIRE

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Your best insurance for long service and durability.

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THE AMERICAN BRASS COMPANY
General Offices, Waterbury, Conn.

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John A. Roebling's Sons Company, Trenton, N. J.



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for single track block signal protection

United States Electric Signal Co.

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Standard in the Electric Industries
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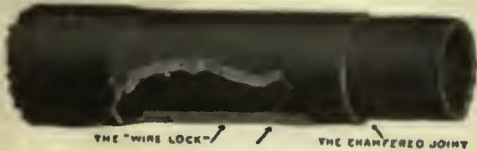
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COMBINE

Lowest Cost **Lightest Weight**
Least Maintenance **Greatest Adaptability**

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BARBOUR-STOCKWELL CO.

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 Established 1858

Manufacturers of

Special Work for Street Railways
Frogs, Crossings, Switches and Mates
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Kerwin Portable Crossovers
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AND ALL OTHER TYPES

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 of continuing reliability

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 CHICAGO, Marquette Building
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 Electric Car Axles**

To Meet Most Rigid Specifications



Other products for the electrical field includes wheels, armature shafts, rails, spikes, track work, splice bars, bolts, tie plates, tie rods, pole line material, sheets, magnet steel and gear blanks.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

BETHLEHEM

**Lorain Special Trackwork
 Girder Rails**

Electrically Welded Joints

THE LORAIN STEEL COMPANY

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for
WHEELS
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RAILS
CROSS TIES



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National Railway Appliance Co.

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Genesco Paint Oils	Ft. Pitt Spring & Mfg. Co. Springs
E. Z. Car Control Corporation's Safety Devices	Turostite Car Corporation's Turnstiles
Garland Ventilators	Anderson Slack Adjusters
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Black and Yellow
Varnished Silk, Varnished Cambric, Varnished Paper

Irr-O-Slot Insulation Flexible Varnished Tubing
Insulating Varnishes and Compounds

Irvington Varnish & Insulator Co.

Irvington, N. J.

Sales Representatives in the Principal Cities

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Hard—Accurate—Uniform



Renewal Materials for Peckham and other Trucks
Castings—Forgings
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50 Church Street, New York, N. Y.

DUNDEE "A" AND "B" FRICTION TAPES

are Okonite Products




'Nuff Said!

Write for Samples and Circulars

THE OKONITE Co., Passaic, N. J.

Incorporated 1884

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RAMAPO AUTOMATIC RETURN SWITCH STANDS FOR PASSING SIDINGS
TEE RAIL SPECIAL WORK
MANGANESE CONSTRUCTION

SALES OFFICES AT ALL WORKS
Main Office, HILLBURN, N. Y.

SAMSON SPOT WATERPROOFED TROLLEY CORD



Trade Mark Reg. U. S. Pat. Off.

Made of extra quality stock firmly braided and smoothly finished. Carefully inspected and guaranteed free from flaws. Samples and information gladly sent.

SAMSON CORDAGE WORKS, BOSTON, MASS.

HORNE & EBLING CORPORATION


50 CHURCH ST., NEW YORK, N. Y.



Brass Hardware For Cars and Buses
Motor and Controller Parts

Sterling Trolley Bases and Brakes
Mall. Iron and Brass Castings

Car Heating and Ventilation



are two of the winter problems that you must settle without delay. We can show you how to take care of both, with one equipment. Now is the time to get your cars ready for next winter. Write for details.

The Peter Smith Heater Company

6209 Hamilton Ave., Detroit, Mich.



TRUCK WITH TOWER IN RUNNING POSITION

TRENTON TOWER

This 3-Section

is not only more convenient, but stronger than the older type.

The top section is reinforced by the intermediate section. The 3-section design makes it possible to raise the platform 16 inches higher and drop it 12 inches lower than can be done with the old-style 2-section tower.

We'll gladly send you details.

J. R. McCARDELL CO.

Trenton, New Jersey, U. S. A.

PERFECT
MICANITE
INSULATOR
Reg. U. S. Pat. Off.

ELECTRICAL INSULATION

Micanite armature and commutator insulation, commutator segments and rings, plate, tubes, etc., Empire oiled insulating materials; Linotape; Kablak; Mico; and other products—for the electrical insulating requirements of the railway.

Catalogs will gladly be furnished

MICA INSULATOR COMPANY

Sole Manufacturers of Micanite

Established 1893.

68 Church St., New York

542 So. Dearborn St., Chicago

Works: Schenectady, N. Y.

8-F

N-L Ventilators are Absolutely WEATHER PROOF

Rain! Snow! Cold, searching winds! Don't make your cars stuffy and uncomfortable this winter in order to keep them warm. *Assure yourself* that your passengers will be comfortable. N-L Ventilators will furnish adequate ventilation and are absolutely weather proof under all conditions. Many different designs for street car and bus use.



*Write for our booklet,
"Superior Ventilation" for complete detail
and information*



The Nichols-Lintern Co.

7960 Lorain Ave., Cleveland, Ohio

Canadian Representative: Railway & Power Eng. Corp., Ltd., Toronto, Ontario

A Single Segment or a Complete Commutator

is turned out with equal care in our shops. The orders we fill differ only in magnitude; small orders command our utmost care and skill just as do large orders. CAMERON quality applies to every coil or segment that we can make, as well as to every commutator we build. That's why so many electric railway men rely absolutely on our name.

Cameron Electrical Mfg. Co., Ansonia, Connecticut

ALLIS-CHALMERS
MILWAUKEE, WIS. U. S. A.

Electrical Machinery, Steam Turbines, Steam Engines, Condensers, Gas and Oil Engines, Air Compressors, Air Brakes



ALUMINO-THERMIC JOINTS

New and independent process. No inserts needed. Up-to-date and economical.

Alumino-Thermic Corp., Roselle Park, N. J.

OXYGEN, ACETYLENE, HYDROGEN
for cutting, welding, etc.

Quick shipment and low prices also on cylinders, valves, torches, regulators and supplies.

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Main Offices: Newark, N. J.

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Type R-11
Double Register

International Registers

Made in single and double types to meet requirements of service. For hand or foot, mechanical or electric operation. Counters, car fittings, conductors' punches.

Exclusive selling agents for
HEEREN ENAMEL BADGES.

The International Register Co.

15 South Throop Street, Chicago, Illinois

JOHNSON Universal Changer



Adjustable

The best changer on the market. Can be adjusted by the conductor to throw out a varying number of coins, necessary to meet changes in rates of fares.

Flexible

Each barrel a separate unit, permitting the conductor to interchange the barrels to suit his personal requirements, and to facilitate the addition of extra barrels.

JOHNSON FARE BOX COMPANY

Ravenwood, Chicago, Ill.

Play for safety—

*plus resiliency—
plus long life*

By specifying

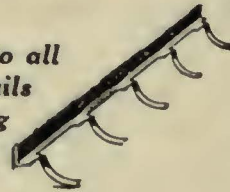
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FORT PITT SPRING &
MFG. CO.
Pittsburgh, Pa.



GODWIN Steel Paving Guards

Adapted to all
types of rails
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Proven by service to economically prevent seepage and disintegration of street railway paving.

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ONE MAN CAR

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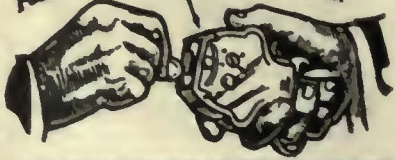
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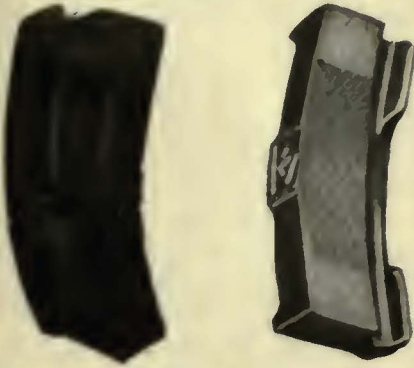
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USE LE CARBONE CARBON BRUSHES

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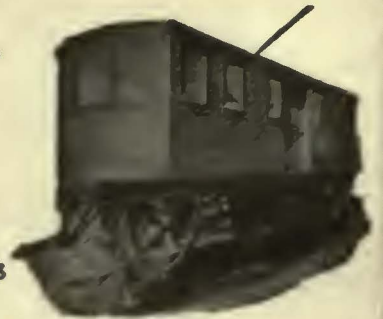
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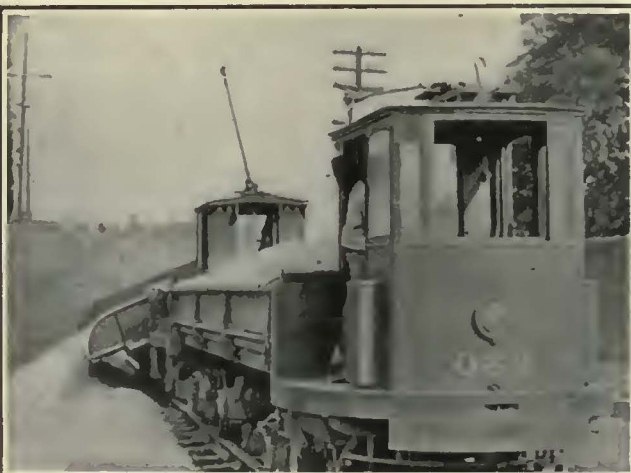
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Operating perfectly and requiring minimum attention for maintenance and lubrication, Earll Catchers and Retrievers give genuinely satisfactory results. Their refinement of design, and mechanical superiority are summarized in the following five features, peculiar to Earll construction.

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"Differential Two-Car Train. Trailer dumping load clear of trench."

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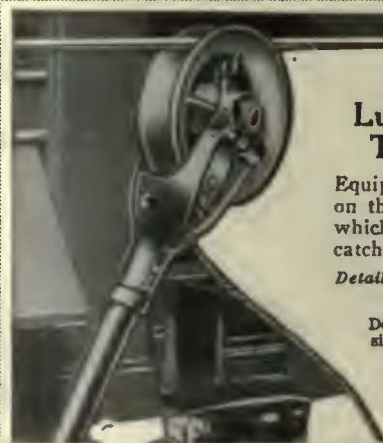
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EXPERIENCED man wanted to take charge of our car shops and equipment, which consists of 12 passenger motor cars, 2 motor express cars, one snow plow and 6 passenger trailers; will require a man capable and willing to do armature winding, field repairing, etc.; one who is thoroughly familiar with general repairs to interurban cars and general car shop work; give all reference, salary required and when services can be had in first letter; position located in Northwest. P-781, Electric Railway Journal, Old Colony Bldg., Chicago, Ill.

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STREET railway engineer; 12 years' experience in way, structures, costs, familiar with street railway accounting. Also fair knowledge of electrical engineering. Best references. PW-787, Electric Railway Journal, 10th Ave. at 36th St., New York.

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8—Steel Interurbans, 48 ft. long. Seating 52.

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We maintain a large organization to give efficient service on small orders. Our tremendous volume gives us unequalled buying power and saves our clients money regardless of the tonnage required.

Immense stocks at strategic distributing points provide complete assortments near you. This adds a saving in freight to our already unbeatable prices.

Next time you need rails, let us know your requirements.

We guarantee the same prompt, efficient service to all.

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Orders for Oak, Car Stock,
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Have four mills in operation. A good stand of lumber. Grades guaranteed. Prices right. Let's get acquainted.

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Relaying Rails

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See our full page
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1 Ton or 1000

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PITTSBURGH, PA. NEW YORK CITY
 JERSEY CITY—PHILADELPHIA—HAMILTON, N.Y.

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Westinghouse E. & M. Co.
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- Armature Shop Tools
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- Automatic Safety Switch
Stands
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Bethlehem Steel Co.
Brill Co., The J. G.
Johnson & Co., J. R.
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Carnegie Steel Co.
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St. Louis Car Co.
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Brill Co., The J. G.
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Babcock & Wilcox Co.
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Amer. Steel & Wire Co.
Elec. Service Supplies Co.
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Elec. Service Supplies Co.
Ohio Brass Co.
Railway Track-work Co.
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Elec. Service Supplies Co.
General Electric Co.
Ohio Brass Co.
Railway Track-work Co.
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Bales Expanded Steel Truss
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Hubbard & Co.
Ohio Brass Co.
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Amer. Br. Shoe & Fdy. Co.
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National Carbon Co.
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Haskellite Mfg. Co.
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Fageol Motors Co.
International Motor Co.
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Brill Co., The J. G.
Long Co., E. G.
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Mica Insulator Co.
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Carbon)
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- Crossing Signals (See Sig-
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Bethlehem Steel Co.
Ramapo Ajax Corp.
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Pneumatic Tie Tamping

The most efficient and economical way to tamp track

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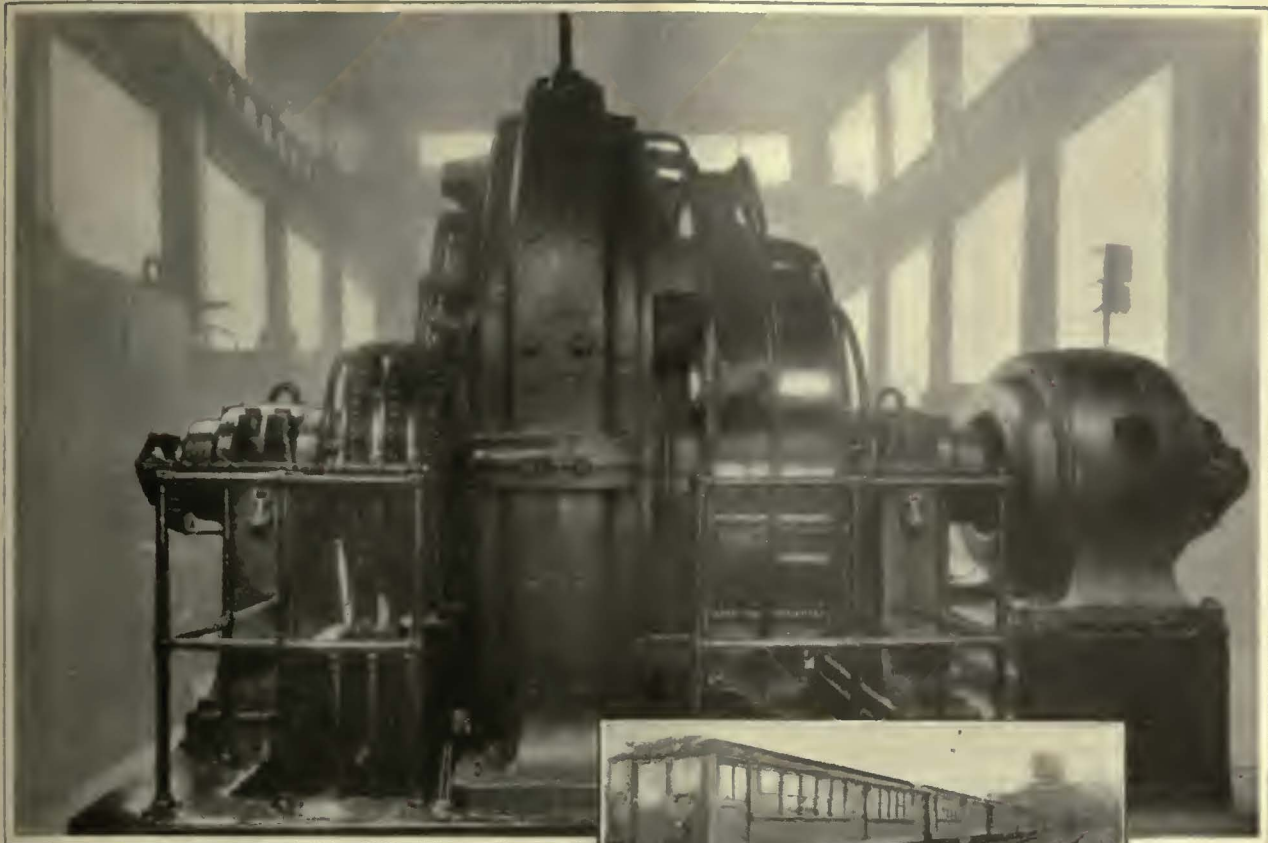
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