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IS TRAILER OPERATION PROFITABLE?

Trailer operation has been adopted for rush-hour service on electric railways to-day. Almost invariably it has met with approval from the officials who have had to do with conducting it. We ourselves are much inclined to the belief that it is a money-maker. Yet is there anything tangible, anything more than a lot of indefinite opinions, to show that it does not cost more than it saves? The Newark two-car train tests showed at least that double units lost some time—first, because of the greater number of boarding passengers; second, because of the consequent number of stops; third, because of the delays due to unequal loading and the transmission of bell signals, and, fourth, because of the time spent in coupling up the train. As a slower schedule increases practically every operating charge in direct proportion, this result of trailer operation involves the possibility of a very serious offset to its advantages. There may be a necessity in some cases for trailers merely to relieve street congestion regardless of cost of operation, but certainly it is hardly safe to adopt the plan without knowledge of the price which must be paid in slower speed for the increased service.

INFORMATION FOR PASSENGERS ABOUT DELAYS

The recent statement that the Lehigh Valley Railroad is preparing to give information to passengers concerning the cause and probable length of delays to trains upon which they are riding brings forward again the possibilities of such a procedure upon electric railways. On city lines especially the information could be singularly valuable to passengers, and the method of transmission by passing the word from car to car along the line of stalled equipment would apparently be extremely easy to carry out. It is a matter well worthy of consideration for every operating official, for nothing is more readily seized upon by disgruntled passengers as a cause for complaint against the

management than a long wait without any knowledge of the probable duration of the delay. It is, of course, difficult always for anyone to determine exactly the length of the stop, and some captious passengers might object if the period was greatly exceeded. But if proper care was taken to explain that the time stated was purely estimated and approximate, it would be much more satisfactory to most of the waiting passengers than the usual curt "Don't know" from the conductor.

LOOP IMPROVEMENTS IN CHICAGO

The traffic reforms on the elevated lines of Chicago promised by the ordinance which has just been passed by the City Council will be of marked benefit to the public. The companies will find that operation of the union loop will be made simpler by the partial through-routing of trains which will be introduced as soon as possible after the necessary physical changes have been completed. This is one of the main advantages that will compensate the companies in part for the possible effect on revenue from the increased length of haul obtainable for one fare under the provisions of the ordinance. Another advantage is the lengthening of loop platforms. The companies have wanted to make this improvement for many years in order to operate longer trains and to have more satisfactory platform capacity to meet the traffic needs properly at the loop stations. The stations on each side of the loop provide for the trains of two operating companies, and it is desirable to make it possible for two long trains on one track to stop at adjoining platforms and have ample room to receive and discharge passengers. Undoubtedly the companies have calculated that the great bulk of the traffic, composed of the daily movement between homes and work, will not be affected materially by the opportunity of a longer ride for a single fare, but will continue with substantially the same length of haul. There will be a heavier through-route business on Sundays and holidays and of course an increase in such traffic during the non-rush hours on weekdays. The revenue per mile on this traffic will probably be low, but some of it will be received when the full capacity of the equipment is not in use for regular traffic, and thus may render this investment more productive.

THE RESPONSIBILITY OF DIRECTORS

The legal principle that the director of a corporation may be held liable for damages resulting from the neglect of his duties was definitely established in a recent decision of the New York Supreme Court, Appellate Division, in the case of Childs vs. White. The plaintiff had been induced to buy stock in a corporation which a few months later went into bankruptcy. Action was brought against one of the directors on the ground that he, knowing

the company to be insolvent at its inception, became a director to facilitate the sale of the company's preferred stock by giving the company the benefit of his name and financial reputation, and also on the ground that he either knew the sale of stock to be accompanied by false circulars, reports and other deceitful methods or that his duty as director demanded that he keep himself informed as to the possible existence of such practices, in order to prevent the defrauding of stockholders. The court declares that directors owe a certain amount of duty not only to existing stockholders but also to those from whom the corporation may solicit subscriptions, and that unless diligence and care are used they are liable for negligence. The decision is entirely fair. When one invests in a corporation and thus divests himself of the immediate control of his property, he has the right to expect that the directors chosen to take his place in the management and control of this property will exercise ordinary care and prudence. Moreover, when one voluntarily takes a position as director in order that his name may be used to increase the prestige of the company, good faith and exact justice demand that he exercise the powers attributable to him and prudently conserve the interests of all stockholders, especially those whom his name may induce to come into the company. This decision more than intimates to directors that henceforth, strange as it may seem, they must actually direct, and we cannot but feel that the system of accommodation directorships and of dummy directorships has received a shock. It is not improbable that numerous stock and bond holders will look on this decision with glad eyes and that certain types of directors may now take steps to find out a few facts concerning things for which they might be held responsible under the law by minority stockholders.

COMPLAINTS AND SERVICE IMPROVEMENT

In another column of this issue is given a résumé of the experience of the Rochester lines of the New York State Railways in the effort to eliminate the numerous causes of friction between the railway and the public. These causes are in general of a trivial character and are based on misunderstandings. The Rochester management has founded its program on the fundamental assumption that, in general, the public intends to be fair. Unless this condition exists there is no possibility of co-operation. The railway company has wisely encouraged the formulation of all complaints because if the complaints are unfounded they become ridiculous when given formal utterance, while if just they give a basis for remedial measures by the company. Satisfactory public service demands on the part of public service employees, high and low, the right attitude of the servant toward the master. This attitude is difficult to define, as it is one of deference but not of cringing servility. It is one that can be maintained with self-respect and dignity by the independent American citizen. It is difficult at times to maintain in the face of unreasonable and irritating conduct on the part of passengers. Proper self-discipline and company discipline will, however, do much to assist in fostering a proper spirit. Such discipline requires first-hand knowledge of the attitude of the public toward the railway and its employees. As an important re-

sult of discipline there should be no argument between passengers and car crews regarding difference of opinion on transportation matters. The employees have certain rules which they must enforce. Assuming that the rules are understood by both sides, there is little danger of disagreement. In case there is disagreement, however, which cannot be removed by the conductor's polite explanation, the matter must be taken up by the department of diplomacy and the cause of irritation removed before it produces infection. An honest complainant, accorded just and courteous treatment, becomes a friend and a "booster." This is the experience in Rochester and other cities where human nature is studied and conciliatory means are used in lubricating the human machinery involved in the supply of transportation.

MAINE PUBLIC UTILITY REFERENDUM

A striking test of what is really the consensus of public opinion in regard to regulation of utility companies by public service commissions is soon to be made in Maine. The Legislature of that State recently placed on the statute books a law providing for a commission of three members to have general supervision over all public utility corporations. No sooner had the Legislature adjourned, however, than opposition to the act began to develop, one of the principal grievances being that the opponents of the measure looked with disfavor upon the Governor's appointment of three lawyers to the board instead of at least one engineer. The wheels of the referendum machinery were accordingly set in motion, and now the question is to be submitted to the people in a general election within six months from the date of the proclamation suspending the law. This move is rather surprising, as far as theory goes, when one considers the basic principles underlying both public utility legislation and the referendum. The public service commission system has been adopted in most of the states, but such action has always been due to legislative effort, put forth, we have supposed, as a result of general and widespread popular insistence. That a law so manifestly in favor of the people should have to be practically resubmitted to public approval might be considered a travesty upon the theory of public utility acts and the working out of the referendum. In actual practice, however, such a procedure may have its advantages. The almost wholesale passage of public utility laws in the last few years in many states, inculcating in the hearts of remaining legislatures a desire to fall in line, has undoubtedly resulted in some cases in a lack of proper consideration of local conditions and administrative details. There are fashions in legislation, just as there are in dress, and during the last few years public service regulation has been strictly the mode. We believe in a wise policy of public utility regulation, but no one should forget that regulation has great powers for evil as well as for good. It is like a powerful explosive which in proper hands can be of great benefit to all, but if improperly or carelessly handled is apt to cause a great deal of injury. The powers intrusted to commissions are vast and far-reaching, and unless they are intelligently as well as conscientiously administered they are apt to make the resulting conditions worse than those which preceded the appointment of the commissions.

MUNICIPAL RESPONSIBILITY FOR LOSS OF BUSINESS DUE TO STRIKES

Elsewhere in this issue we publish at length a digest of the arguments presented by Wells Fargo & Company before the United States District Court at Newark to secure a judgment against Jersey City for strike damages in accordance with a jury award previously granted. The decision of the jury was treated editorially in our issue of May 17, 1913, but only now have we been able to obtain a complete summary of the issues involved in the case. Of the two fundamental points concerned, municipal responsibility for actual physical damages and municipal responsibility for an intangible loss of business, the first was easily determinable and gave little opportunity for extended conflict. This is a statutory obligation in New Jersey, but the cases quoted from other states indicate that such statutes are general and quite similar in wording to that in New Jersey and that the courts generally are ready to enforce them. Moreover, as they are "remedial" in character and intended to discourage mob violence, the courts are disposed to construe them liberally in favor of the plaintiff and have so expressed themselves on a number of occasions.

The second aspect of the case, however, the liability of the municipality for damages due to loss of business, was fiercely contested. Basing its argument upon the right of state or municipality to tax under the unit theory intangible property within its bounds, by an exhaustive citation of pertinent cases the company demonstrated that its intangible property or "business" actually had its situs in Jersey City and merited protection. Consequently a deprivation of the use of the tangible property was also a deprivation of the use of the intangible property with which it was inextricably mingled, and the measure of the damage to the business because of the deprivation was the use value of the property or the revenue which would have been received from the use of the property in the company's business.

The points made by the express company were well fortified by Supreme Court decisions, and unless on appeal the reasoning should be denied and the jury award set aside, electric railways and others who suffer strike losses have cause for much encouragement. Prior cases have arisen where awards have been made against municipalities for lack of adequate protection in case of strikes, but the Jersey City case is noteworthy because of the direct recognition given to the intangible loss of business resulting therefrom. This, of course, is the most important question in a street railway case of this nature. Often, no doubt, city administrations have failed to take decisive steps to suppress violence simply because of political reasons, or because of a belief that even if the threat of the damaged company to sue were carried out, awards could be obtained at the most only for the small damages to the tangible property. Now, however, a much larger factor is brought into the case, and the quantity of possible damages may offer a better inspiration for action. It is true some companies have had a fear that they would become unpopular if they filed damage claims in cases of this kind. But we believe they would win more respect by standing up for their obvious legal rights, and the recent actions of the Buffalo and Jamestown companies show that they are be-

ginning to protest in the courts against the pure indifference or deliberate partiality on the part of municipal authorities at the time of strikes. In such cases the position occupied by Wells Fargo & Company will serve as a good vantage point for the future.

EXECUTIVES WANTED AT CONVENTIONS

The letter addressed to executives by President Harries of the American Electric Railway Association urging them to attend the annual convention is both a cordial invitation and a timely admonition. In the pioneer days of the street railway industry most of the delegates at the national conventions were presidents, vice-presidents and managers, who were capable of discussing almost every phase of the business from franchises to fares. Eventually the development of electric traction and the merging of properties led to the formation of affiliated bodies of specialists in accounting, engineering, traffic, claim adjustment, etc., but it was made clear at the time of the reorganization that the parent body would reserve to itself the broader problems of proper return on investment and public policy. Each of the affiliated bodies is doing very important and necessary work, but the duty of a railway company—and even its self-interest—does not end when it sends its department heads to a convention. One reason for this is that no matter how valuable the work of such men may be in their individual fields, they have no authority to act as spokesmen for the owners of the properties on such topics as valuations, present tendencies of public utility laws and regulations, electric railway securities from the investor's standpoint and profit sharing with employees. Yet all of these subjects are to be discussed at the next convention, and all of them are of vital concern to the industry and to the financial interests which own the different properties.

It would be a very helpful sign if the Atlantic City convention of 1913 should show a larger aggregate attendance of the prominent men who are the actual owners of the properties and dictate their financial policy than has been present in previous years. At no time in the history of the industry has it been more important that those who have large financial interests at stake in this business should familiarize themselves with the problems with which those actually in charge of the operation of the company are struggling, and they can do this by attendance at the meetings much better than in any other way. By mingling personally with the men in charge of operation they will become acquainted with the needs of the field and will be able to view the state of public opinion from various angles as they could not do in any other way. Moreover, such personal contact as this is very desirable to establish the solidarity of large railways or other organizations.

But the class of men to whom we refer should have another and more important object in attending the convention than that simply of learning about their own properties and the status of the industry. Their advice and suggestions should be of great benefit to those who have in charge the actual conduct of the various enterprises. The great coming struggle of the electric railway industry is to conserve the enormous investments that are being seriously jeopardized by an unrestrained program of demagogic

regulation which threatens the very being of every public utility in this country. It is one of the main purposes of the American Electric Railway Association properly to educate the public against the erroneous ideas current in regard to public service corporations, but it can attain this object more readily if it has the personal and active support and assistance of those who either for themselves or as trustees have large interests at stake and believe that they have the same right to usufruct upon their investment as if it had been placed in a manufacturing or agricultural business.

TURBO-GENERATOR FIRE HAZARDS

The production of new types of electrical apparatus is always of interest from the standpoint of fire protection because such equipment cannot in most cases be wholly divorced from the development of heat in considerable quantities under many conditions except at a disproportionate manufacturing cost. Turbo-generators illustrate this point, and the large amount of money frequently tied up in a single machine lends more than ordinary significance to a recent paper by G. S. Lawler on "The Fire Hazard in Turbo-Generators," read before the American Society of Mechanical Engineers.

The author points out that the chief causes of increased fire hazard in such machines as compared with the older types of electric generators are that the volume occupied by turbo sets is relatively small per unit of capacity; that the combustible insulation is more concentrated and much of it is exposed even to a slight arc or fire; that the end connections between slots form a large proportion, sometimes nearly one-half, of the total length of conductors, with the small number of poles required; that the capacity of many turbines is great, involving the development of an enormous amount of energy on short-circuit; that the methods of air cooling employed tend to fan fire occurring within the machine; that the interior is inaccessible to rapid work in case of fire, and that the gradual deterioration of insulation is likely to lead to short-circuit in time and resulting ignition of the oily or gummy insulation required in high-voltage units.

By way of making his criticisms constructive, Mr. Lawler emphasizes the value of power-limiting reactances in turbo-alternator circuits and suggests that all exposed coils be provided with a non-combustible outer covering, the stator end connections being especially vulnerable. This would, in his judgment, greatly delay the spread of fire, and even if no other protective means were taken would doubtless prevent serious damage. It is essential to filter the cooling air so as to free it from dirt and oily vapor and thus preserve the integrity of any such covering, but at present no suitable material for such coverings appears to be available. An excellent suggestion involving only nominal expense is that means could be provided for cutting off the air supply in case of fire in generators by placing dampers in inlet ducts designed to be normally held open by fusible links, and a further possibility is the piping of carbon dioxide gas into the machine in emergencies, with arrangement of valves for operation in connection with the inlet dampers.

It is certain that better protection of turbo-generators

against internal fires can be secured, and the problem of finding a suitable fireproof outer covering for stator coils is probably no more difficult than the search for many other special materials which has been crowned with so much success in the research laboratories of the great manufacturing companies. The chief danger from short-circuits is not in the rotor, since asbestos is largely used in the insulation of these revolving field coils, nor in the slots of the stator, which are necessarily deep and natural barriers to the spread of hot gases. The ends of the coils in the stator are the problem for the designer to consider from this viewpoint, and the outlook is improved by reason of the fact that the issue is the insulation of stationary conductors. Whatever may be the material ultimately adopted for this purpose, the use of reactances to limit short-circuit current and thus prevent distortion of the coils and injury to their coverings is generally recognized as a necessity. The filtration of air is thoroughly practicable for turbine ventilation, and its successful use is only a matter of intelligent installation. With turbines individually costing a respectable fraction of a half million dollars in service, and more to come, there can be no question that anything which can be done to reduce the fire risk inherent in such machines warrants liberal expenditure by both manufacturers and purchasers.

THE ANALYSIS OF TEST RESULTS

To say that tests to determine the relative efficiency of two different types of apparatus should be made, if they are made at all, under conditions which are fair to both types is admittedly a truism. This may also be expressed by stating that in any series of comparative tests all variable factors in the final result must be determined beforehand and either equalized arbitrarily during the tests or else accounted for by estimate. Without this allowance the results are apt to be, and usually are, misleading.

Again, there seems to be a prevalent belief that a certain length of service will determine whether a new piece of apparatus will be satisfactory. Nothing could be further from the truth unless the test is made only to see whether the new device can be made to work. The mere fact that apparatus is capable of operation is no indication that it is of the slightest value. Nor is it a fact that two different types of apparatus or two different types of car have had their relative values determined in a service test because one showed better results in the opinion of the motorman or of the official who watched the operation.

This custom of making service tests at perhaps considerable expense and then permitting the conclusion to be based largely upon opinions unsupported by figures or else supported by figures obtained under conditions which were not strictly comparable is the curse of every engineering industry of the present time. Every technical library is, indeed, fairly loaded down with data, utterly misleading in character, which have been obtained by running off a series of tests on material whose operation depended to a large extent upon factors utterly neglected by or perhaps unknown to the investigators.

It is this sort of procedure which brings testing in general into disrepute. The question whether test results are

going to be any good after they are obtained is a perfectly logical one for the managers to ask because in nine cases out of ten they are actually worthless. Naturally, with a well-grounded distrust of test data, the only other resource, when something new is proposed, is to do a lot of theorizing and, if the new device creates a favorable impression, to put it in service and forget about it. It may be grossly inefficient, but even this is hardly likely to make as much difference in the ratio of net to gross earnings of the property as an increase or decrease in business, so that the real result stands little chance of ever coming to light to embarrass the sponsor. Theorizing is an exceedingly interesting pastime, but when it is done by men who are in position to put such theories off-hand into practical use it contains distinct elements of danger for stockholders. This statement, however, is by no means intended as an argument for rule-of-thumb methods, for they are another and perhaps a still more vicious form of the same lack of desire for exact fact which induces theorizing.

The only way to solve any problem in engineering whose solution lends itself to the test method is to approach the problem with an entirely open mind, make the conditions, if two devices are to be tested, as nearly alike as possible, and then make proper allowance for those which cannot be eliminated from the equation during the progress of the test. Then the results obtained may be applied with comparative freedom to those particular surroundings, but the greatest caution should be used in any attempt toward their extrapolation.

UNSUCCESSFUL MUNICIPAL TRAMWAYS IN ENGLAND

A current issue of the London *Spectator* publishes data concerning the success—or non-success—of some of the British municipal tramways which, in view of the agitation for city-owned lines in Detroit, Toronto and other American cities, is of considerable interest. We have always maintained that the conditions in Great Britain were much more favorable to the success of municipal public utility enterprises than here, largely because politics there have not been allowed to enter so largely into the administration of municipal affairs. Hence the operating managers of the British municipal properties, taken as a whole, are a remarkably able set of men. But from the information contained in the *Spectator* it would seem that not even the British system has proved immune to the dangers to be encountered in undertakings of this character.

According to the Barking District Council, the Barking municipal tramways have been a persistent failure since their institution, there being a loss of £5,000 and £7,200 in the last two years. In Ilford the municipal lines are losing, on an average, £65 a week. And in regard to London, too, the figures are not encouraging. Considerable controversy exists, it is true, as to the actual financial results of the London County Council Tramways, but according to a report recently presented to the London County Council by the highways committee it appears that during the last financial year the surplus from operation was £202,000 less than the estimate, and that after deductions for fixed charges the only amount to be credited to renewals for

the year was £497, whereas, in accordance with a resolution of the Council, provision should be made in the amount of £150,000.

In a mingling of apology and zeal the highways committee has ineffectively endeavored to explain this difference. It is due, it is said, to a necessity of contributing to the local tax rates and of being debited with a capital charge for the cost of street widening. According to the *Spectator*, however, the tramways only justly pay for the monopolization of a strip of the roadway, and the improvements committee of the Council is so controlled by the tramway spirit that little money is spent on improvements unless beneficial to the tramway service. At any rate, the charges for these two items amount to only £116,000, which obviously fails to counteract the £149,503 deficiency.

The *Spectator* considers this condition of affairs in London to be due largely to the competition of the motor omnibus lines, a form of transportation unforeseen when the idea of municipalizing tramways was spreading broadcast in England. With its advantages of light investment and adaptability of movement, the motor bus has offered an attractive field to private capital for furnishing additional facilities for local transportation when the city funds were tied up in municipal ownership undertakings, and a steady development of this new system has undoubtedly resulted in a decided drain on the coffers of the municipal lines.

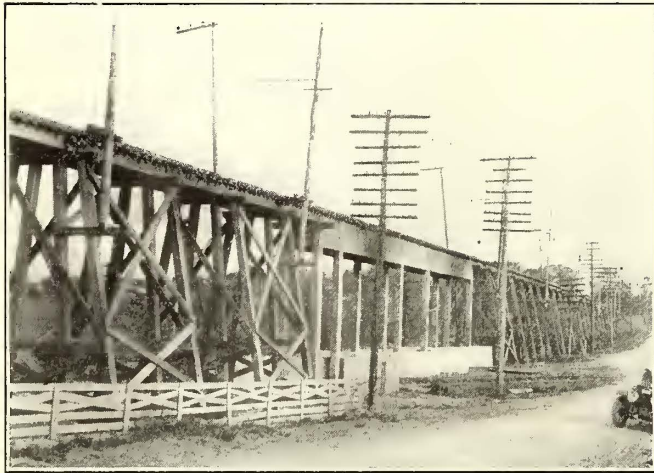
This outcome gives strong emphasis to the statement that advocates of municipal ownership often pay too little attention to the hazards involved in the enterprise. In this case they saw that certain private companies were making large profits in tramways, and they thought they would obtain these sources of wealth for the ultimate benefit of the taxpayers. They forgot the risks that the original shareholders in tramways had to undergo, and they were blinded to the fact that new mechanical devices might impair the success of their venture. As a result, instead of the loss being on the shoulders of private parties who had voluntarily risked their funds as their investment, the loss is made compulsory upon every taxpayer, regardless of his means, position or interest in the service.

Now the chairman of the Barking District Council states that he would be glad to lease the tramways to some company, but none desires an enterprise that has proved to be a failure, which means presumably either an absolute sacrifice or maintenance at a loss, because with motor bus competition we presume an increase of fares is impracticable. These are vital points, and conditions in England certainly drive home the fact that cities contemplating the establishment of municipal railways here should realize to the fullest both the present and the future hazards of the undertaking and the possibility of a deficit as well as a surplus. We do not fear greatly the hazard of motor buses encountered in England, for reasons already discussed in these columns, but the proper charge for maintenance is largely unknown and that for obsolescence is still more uncertain. When to these factors and the increasing cost of materials is added the load of inefficient and expensive management to which municipal enterprises in this country will be particularly subject, the chances are pretty large in favor of a deficit for a municipal electric railway rather than a surplus.

New 1200-Volt Line Between Nashville and Gallatin, Tenn.

A Line Possessing a Number of Novel Features in Track, Repair Shops, Substation, Cab Signal System and Rolling Stock

A new 1200-volt d.c. interurban line has recently been completed and put in operation between Nashville and Gallatin, Tenn. It traverses a densely populated, picturesque district, with antebellum characteristics, northeast of Nashville and bordering the Cumberland River valley for a distance of 27 miles. Except in a few places the entire line is



Nashville-Gallatin Railway—Viaduct Over L. & N. R. R.

built on a private right-of-way, paralleling the old Gallatin turnpike, which passes through what is known as the "Blue Grass" district of Tennessee. Throughout the entire length the territory is of an urban character, with a population averaging 800 people to each square mile on each side of the road. The Nashville-Gallatin Interurban Railway was financed and built by the Fidelity Securities Corporation of Nashville, with the assistance of local subscriptions for stock and right-of-way donations for the entire 27 miles.

The character of the territory traversed is ideal for an interurban line, and since beginning operation the earnings have far surpassed those anticipated by the promoters. Up to the present time the traffic has been strictly passenger, but express cars have been purchased and delivered, and the management has every reason to believe that a profitable package express and freight business will be developed in a comparatively short time. Nashville is served by another 10½-mile interurban line which enters the city from the south and is known as the Nashville Interurban Railway. This line, too, was built by the Fidelity Securities Corporation, but this company has recently withdrawn from its operation.

TRACK AND ROADWAY

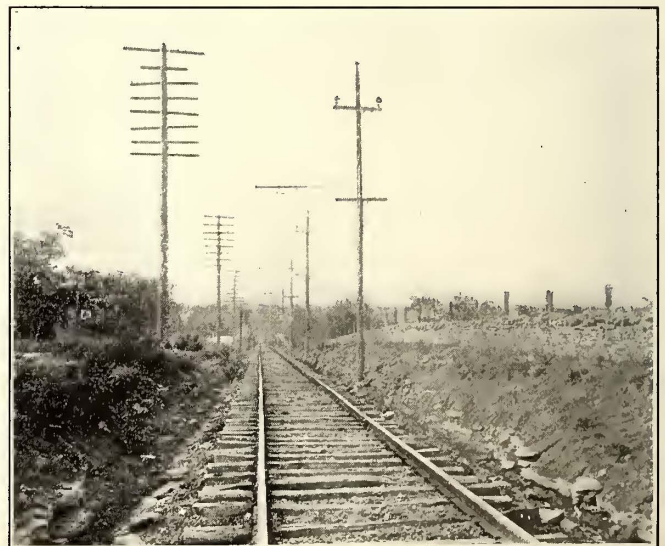
The new 1200-volt line between Nashville and Gallatin immediately sprang into prominence as an interurban road owing to the fact that it is the longest in the State of Tennessee. It is built with 70-lb. rail laid on standard-size white oak ties spaced seventeen to 33 ft. The ruling grade is 3 per cent, and the maximum curvature 6 deg., except that portion of the city lines of the Nashville Railway & Light Company by way of which access to the business district of Nashville is obtained. Standard No. 9 turnouts with 72½-ft. leads are used in all side tracks, which are spaced at frequent intervals. Compressed terminal bonds are installed under the continuous joints, and cross-bonds of No. 0000 copper wire are spaced at 2000-ft. intervals. All bridges, both timber and steel, were designed for Cooper's

E-50 loading, and all small waterways are provided with corrugated iron culvert pipe.

The private right-of-way averages approximately 50 ft. in width, except in places where this was not sufficient for heavy cuts and fills. To fix the alignment of all curves which are spiraled, 4-in. x 4-in. oak post monuments are set in concrete at all points of spiral, at points of compound curves and at points of tangency. These permanent monuments are set 7½ ft. from the center of the track and painted with black letters on a white background. They show the degree of curve and elevation of the outer rail, and the monuments at points of spiral and at points of compound curve give the lengths of each. Practically all the heavy excavation is in solid rock, which made grading exceedingly expensive. Standard roadway sections include a 12-ft. roadbed with 1 and ½ to 1 slopes on embankments and a 14-ft. roadbed in excavation. The standard slope in all rock cuts is ¼ to 1.

There are but few natural gravel deposits in this portion of Tennessee, and these are isolated deposits of glacial drift. This company's engineers were fortunate enough to find one of these deposits but a short distance off the main line northeast of Hendersonville. A spur track 2 miles long was built to this deposit, and gravel ballast for the entire line is being distributed as fast as the regular passenger service will permit. The standard depth of ballast under the ties conforms to general practice—that is, 6 in.—but in rock cuts a combination of loose rock and gravel 18 in. deep was used. This permitted the cut roadbed to be excavated to the depth of the ditches, and the loose rock under the gravel ballast supplied from the rock excavation furnishes excellent track drainage.

The overhead trolley and transmission lines are carried on



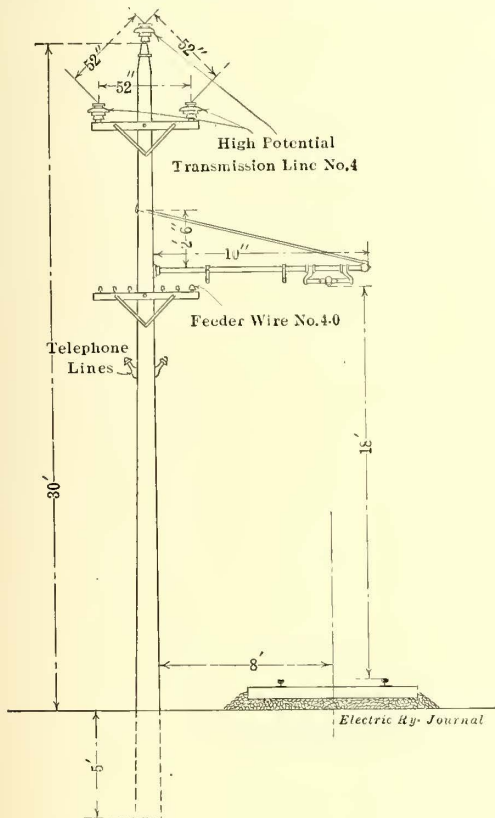
Nashville-Gallatin Railway—Interurban Section

a single line of 35 ft., 7½-in.-top chestnut poles set at 100-ft. intervals with the face 8 ft. from the center of the track. The 33,000-volt a.c. three-phase transmission line is carried on a 5-ft. two-pin cross-arm near the top of the pole, with the third phase on a pole-top insulator. This arrangement permits a 52-in. spacing between the three No. 4 conductors. This transmission line extends from the generat-

ing station of the Nashville Railway & Light Company at Nashville to the substation at Hendersonville.

Standard General Electric pipe mast arms are attached to the pole below the transmission line so as to give 18 ft. clear head room between the top of rail and trolley. Just below the mast arm a standard cross-arm is applied which varies in length depending on the number of signal wires. This cross-arm also carries the feeder on the insulator nearest the trolley. The telephone circuits are on bracket insulator pins below this cross-arm. Both the trolley and feeder wire are of No. 0000 round copper, and the latter is strain-guyed every quarter of a mile and at approaches to all important curves.

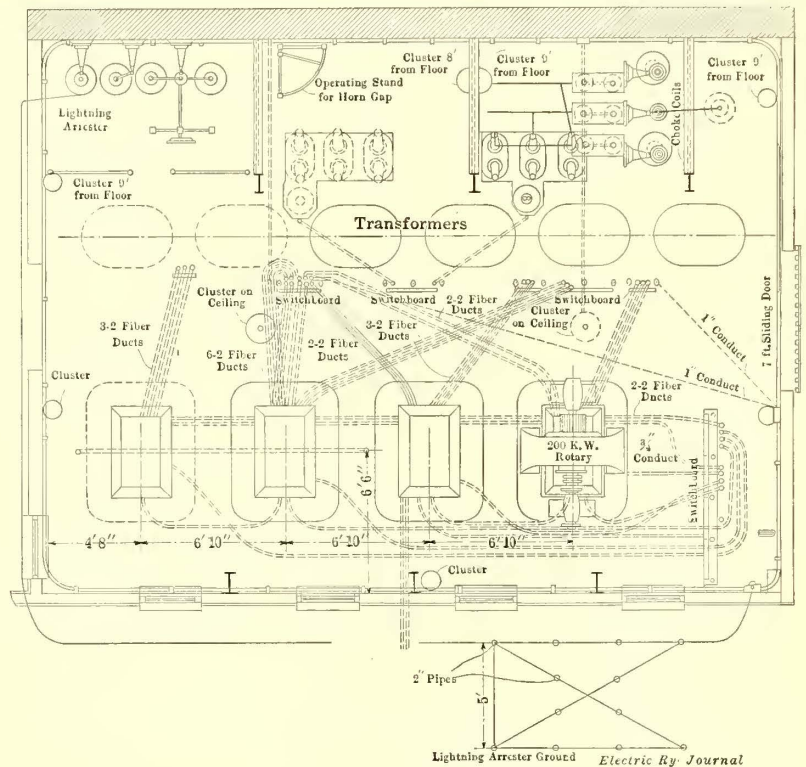
When the overhead lines were built the usual procedure was reversed in that as soon as the grading was completed the overhead line material was distributed along the line



9 ft. below the caps. At the elevation of the bridge deck two long ties project on each side of the pole, and a cross timber between these and bolted to them and to the pole fixes the position relative to the track.

HENDERSONVILLE STATION

At Hendersonville, the approximate center of this inter-urban line, the company built a combination passenger and freight station, shops and substation building. This structure is approximately 95 ft. by 108 ft. 6 in. in plan and is built of a timber frame with metal siding on concrete foundations. One corner of the building front is occupied by the separate waiting rooms for white and colored persons and by the office of the dispatcher and ticket agent. The substation room, 25 ft. x 35 ft. in plan, adjoins these rooms on the building front, and a large freight warehouse, 66 ft. x 68 ft. in size, occupies the space back of these. A brick partition wall between the freight wareroom and the substation serves two purposes, that of a fire wall and that of



Nashville-Gallatin Railway—Details of Line Construction—Floor Plan of Substation

with teams and the trolley wire fastened in position from tower wagons. This arrangement permitted the track to be laid and the transmission and telephone lines strung without the use of a steam engine and at the same time gave the transportation department an opportunity to break in its new rolling stock and trainmen.

The two most important bridge structures on the entire line are those over the Mansker Creek bottom and the grade separation over the Louisville & Nashville Railroad about midway between Nashville and Hendersonville. The former includes a well-built 1500-ft. trestle approach to a 100-ft. through truss span on concrete masonry. This large amount of waterway was required because of the proximity of the opening to the Cumberland River, which during spring floods backs up into the creek channel. The viaduct over the Louisville & Nashville Railroad is a combination of temporary and permanent structure. The spans over the railroad tracks are of reinforced concrete tower and girder construction, and the two approaches to this, each about 500 ft. in length, are frame trestles. Overhead lines on both timber structures were built with the pole butts supported on brackets of two 6-in. x 8-in. timbers bolted to the outside legs of the timber beats, approximately

a point to which the insulators for the incoming high-voltage transmission lines may be attached.

The carhouse occupies the rest of the structure and is approximately 35 ft. x 108 ft. 6 in. in plan, or sufficient to house three tracks at 10-ft. 9-in. centers. Three concrete repair pits were provided, one extending the full length of one track and two 51 ft. in length, at the rear end of the carhouse under the other two tracks. The three entrances to the carhouse section are provided with double swinging doors, through which the tracks lead from a Y-connection to the main track immediately in front of the building.

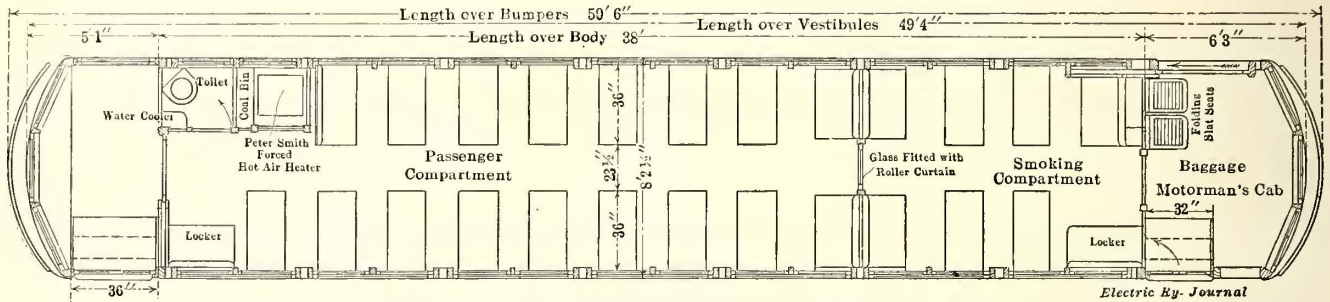
SUBSTATION EQUIPMENT

Essentially, the substation equipment includes three G.E. 200-kw. rotaries, two of which are connected in series to supply 1200 volts, and a spare foundation for the fourth rotary, together with transformers, oil switches and lightning arrester set. The 33,000-volt a.c. transmission lines enter the substation room by way of a wooden tower on the roof on which the horn-gap switches are mounted and thence pass through copper tube conductors and roof insulators to the interior of the building. The incoming transmission lines first pass through a set of air-gap switches, choke coils and oil switches to the transformers. This in-

stallation includes four G.E. 135-kva, 33,375-volt, sixty-cycle a.c. transformers, which step down the pressure from 33,000 to 375 volts a.c.

All low-voltage circuits, both from the transformers to the rotaries and from the rotaries to the feeder panels on the switchboard, are installed in fiber conduit under the substation concrete floor. The four transformer switchboard panels are installed beside the transformers, and the feeder

One of the novel features of the substation layout is the lightning arrester ground installation. This includes twelve 6-ft. sections of 2-in. pipe with 2 in. of the top tinned. Ground wire connections are made by wrapping No. 0 seven-strand copper cable around the tinned portion of the pipe and soldering it. Each pipe is driven 5 ft. into wet earth, and the attached copper cable is connected to the negative side of the lightning arrester.



Nashville-Gallatin Railway—Plan of Passenger Car

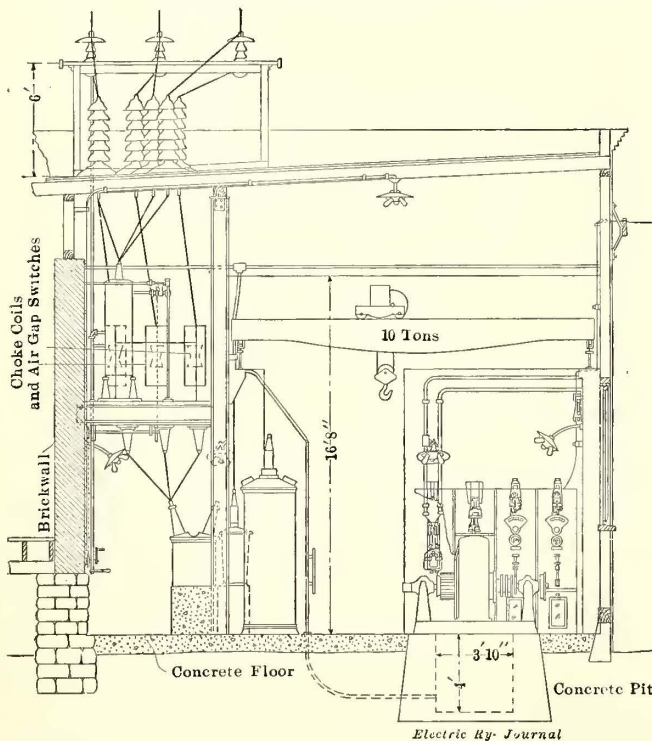
panels are grouped in a single board at one end of the substation. Two 1200-volt No. 0000 feeders lead from this substation, one to Gallatin and another to Nashville. All 1200-volt switchboard panels are specially insulated, every bolt-head being installed in hard rubber as a precaution against short-circuits. Each feeder circuit is provided with a Thomson recording voltmeter, and the swinging bracket voltmeter at one end of the switchboard is provided with a plug so that the voltage on either of the two feeder sections may be obtained.

A 10-ton overhead bridge crane with a hand-operated trolley was provided in the substation and uses two rows of

SIGNAL SYSTEM

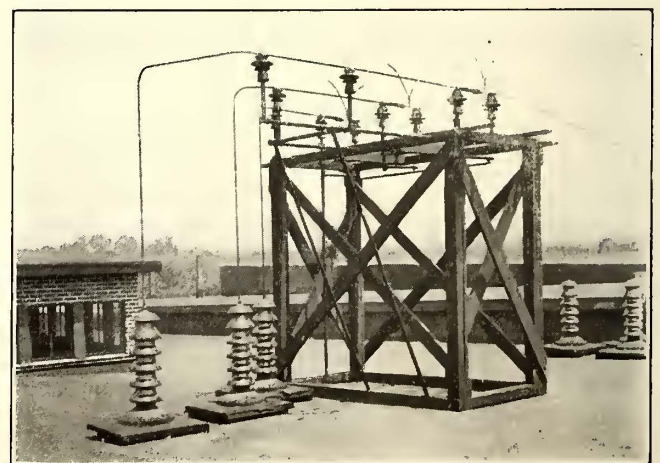
This new 1200-volt line is equipped complete with the Simmen system of signals. The third-rail installations provide protection for east-bound and west-bound train movements with a home and distant rail for each siding. Switchboxes are installed at each turnout and automatically give a danger indication in the motorman's cab in case a switch is left open. A ten-lever dispatcher's board and auxiliary equipment are installed in the Hendersonville terminal station. The dispatcher's office equipment includes the storage battery on the main signal control circuits and a small motor-generator set for recharging the storage battery. The motor-generator set is a type K Holtzer-Cabot, with 1/3-hp motor, rated at 4-amp, 190-volt, 60-cycle and 1750 r.p.m.

An unusual feature in this installation of the Simmen system of signaling is that a telephone plug is provided in the relay box in the motorman's cab. This makes it possible for the dispatcher to talk to the motorman by way of the signal circuits, the third-rail and third-rail shoe. The third-rail shoe also is a departure from the original de-



Nashville-Gallatin Railway—Cross-Section of Substation, Showing Entrance of High-Tension Wires

columns for a runway, one in the front wall of the substation and the other back of the transformer set. The latter not only carries the crane runway but also serves as a support for the lightning arrester gallery. This bridge crane is equipped with a differential hoist of 5 tons capacity, which is sufficient to lift any part of the substation equipment.



Nashville-Gallatin Railway—Transmission Tower on Substation Roof.

sign in that it is not fixed but is what is termed a revolving shoe. The original design of the third-rail shoe being fixed, it was found after a period of service that the pressure on the third rails would wear a groove in the sliding contact surface. The new shoe is set lightly off the center of the third-rail. This tends to revolve when it comes in contact, and this action spreads the wear over the entire

surface. After four months' service on the lines of the Indianapolis & Cincinnati Traction Company, it has been found that this type of shoe shows no appreciable wear, and it is believed that this difficulty has been entirely overcome.

ROLLING STOCK

The initial purchase of rolling stock for this 27-mile road included four interurban passenger cars and one baggage

ville. Other car equipment includes automatic air brakes, Hedley anti-climbers, Tomlinson M. C. B. radial drawbars and Ohmer fare registers. The lighting circuits are installed in exposed conduit with cushion sockets. Heating and ventilation are provided by the installation of a Peter Smith Heater Company's forced-draft heater and eighteen globe ventilators in the arched roof, nine on each side over the center of each row of seats.



Nashville-Gallatin Railway—Interior of Passenger Car



Nashville-Gallatin Railway—Interior of Express Car

car. Each embodies the most modern practice in car construction and equipment. The passenger cars are 50 ft. 6 in. over-all length by 8 ft. 5 $\frac{3}{4}$ in. wide. The bodies are of arched-roof design for single-end operation with underframes of composite construction which are under and over trussed.

The car body is divided into a passenger and smoking compartment, and the latter also serves as seating space for colored passengers. The motorman's cab is quite large, being 6 ft. 3 in. over all, to provide space for light baggage. A two-leaf folding door on the right side of the cab permits the colored passengers to enter the compartment reserved for them without passing through the car. A 42-in. sliding door on the opposite side of this vestibule serves for loading and unloading the baggage. The rear platform is equipped with a single 36-in. two-leaf folding door and a triple tread coach step on the right side. The total seating capacity is fifty-four with seats for sixteen passengers in the smoking and colored passenger compartment and thirty-six in the main compartment. The interior finish, including linings, moldings, doors and sash, is of cherry, mahogany finished, and the seats are upholstered in rattan with brass fittings.

The express and baggage car is arranged for double-end operation and like the passenger car is built with a composite under frame and an arched roof. The side sills, however, were increased in section, so as to provide additional carrying capacity. The principal dimensions of the baggage car are 45 ft. over-all length by 8 ft. 2 in. wide, with a clear head room in the body between the floor and the ceiling of 8 ft. $\frac{3}{4}$ in. The same type of trucks and motors as those used under the passenger cars and already described were included in the equipment of express and baggage car.

Probably the most novel feature in the auxiliary equipment of this express car is an installation of two small power cranes to facilitate the handling of heavy freight. The underframing of the car body was reinforced to carry the additional strains imposed by the operation of these cranes. The hoist standard is composed of two sections of channel iron fitted into castings on the car floor and just above the 7-ft. sliding doors. These castings form a pivot for the vertical member, which in turn supports a horizontal boom. Inside of the channels of each crane a 3-in. air cylinder with a 24-in. piston stroke has been in-



Nashville-Gallatin Railway—Standard Passenger Car and Standard Express Car

Four G.E.-205-B 600-volt motors mounted on Brill 27 M. C. B. 1 trucks were included in the car equipment. Two of the motors are connected in series for 1200-volt operation and are capable of 50 m.p.h. A change-over switch in the motorman's cab permits the motors to be operated in multiple when the car passes from the 1200-volt interurban line to the 600-volt street railway lines in the city of Nash-

stalled with the cylinder at the bottom, which permits the piston to travel upward.

A sheave wheel is mounted just above this air cylinder and on a level with the horizontal member of the crane. This wheel and a second sheave wheel set in the end of the piston rod are employed in raising and lowering a load to and from the car. The horizontal boom is built of two

plates placed so that a pulley may be set between them, five pairs of bearing notches being provided for this purpose. The location of the pulley on the boom depends on the weight of the load and its distance from the car door. With a normal air pressure on the car the hoist is capable of lifting 800 lb. Each hoist is pivoted beside the sliding doors so that it may be swung out through the door opening. A hose and pipe connection to the air-brake reservoirs supplies air to the hoist cylinder, which is operated by a straight-air valve attached to the side of the upright member of the hoist. Views of both the baggage and passenger cars are shown in the illustration. They were designed and built by the American Car Company of St. Louis, Mo.

ENGINEERING

The work of financing and constructing the Nashville-Gallatin Interurban Railway has been under the direct supervision of H. H. Mayberry, president, and R. A. Bailey, Jr., general manager of the operating company. The civil engineering problems were under the supervision of M. A. Stainer, chief engineer, and the construction of the overhead transmission and trolley lines as well as the substation installation at Hendersonville was supervised by D. J. McLane, superintendent of construction, who has since been appointed superintendent of operation.

SERVICE IMPROVEMENT IN ROCHESTER

The management of the Rochester Lines of the New York State Railways has for the past few years devoted much attention to service improvement and has developed a special department for the purpose of handling matters which relate to this subject.

In the issue of the ELECTRIC RAILWAY JOURNAL for Dec. 23, 1911, a detailed account of the workings of the complaint department showed that in past years complaints had been handled by the departments or persons to whom they were addressed. The final analysis indicated that in many cases the lack of system in handling the grievances prevented the desired co-operation with the public in the matter of better service.

At the time the complaint department was inaugurated it seemed a difficult task to correct the prevailing impression of the general public that a registered complaint would place the complainant on a blacklist of habitual fault-finders. In August, 1912, an effort to correct this impression resulted in changing the name of the complaint department to the "service improvement department," and by means of publicity through newspapers and constant reminders placed in all cars the patrons of the Rochester Lines came to realize that the company was earnestly endeavoring to handle intelligent complaints scientifically, with a view to satisfying the public and remedying any defects in its service. Investigation of the complaints received during 1911 indicated a lack of familiarity by the traveling public with the necessary rules and regulations of the company, this being particularly true of the instructions governing the use of transfers. Fifty-seven per cent of these complaints were, without question, attributable to the fault of the public in not knowing the extent of its own or the company's rights.

The records for 1912 show an increase in the number of complaints received of approximately 60 per cent over 1911. The increase can be attributed to the work of the service improvement department. Almost without exception the complaints for 1912 were rendered in an intelligent manner, containing sufficient data for an immediate investigation. The results could thus be placed before the complainant within a reasonably short time. In other words, the campaign of education conducted by the service improvement department during 1911 is now bearing fruit. By means of a personal visit to each complaining patron

there has been instilled into the minds of those using the cars an appreciation of the rules governing operation and a knowledge of proper use of transfers and the correct method of rendering complaints. The department, by its prompt and systematic handling of complaints, has been the means of establishing better relations with the public, and the public, by appreciating the purpose of this department, has made it possible for the company to attain greater efficiency in the operation of its cars. A typical daily report of the department is shown below, the address of complainant and the number of conductor being changed:

NEW YORK STATE RAILWAYS			
SERVICE IMPROVEMENT DEPARTMENT DAILY REPORT			
Number of complaints received, 7.			Feb. 4, 1913.
Complainant	Address	Complaint Against	Nature of Complaint
— — — —	39 Masseth St.	Motorman 210	Refusing to allow passenger to board car front way
— — — —	336 North St.	Unknown conductor	Short-changed passenger
— — — —	84 Vassar St.	Conductor 693	Insolence to passenger
— — — —	1010 Bay St.	Crew on car 319	Turned before reaching end of line
— — — —	Genl. Del. 942 Ave. D	Unknown employee Company	Insolence Blocking crosswalk
— — — —	185 West Ave.	Conductor car 700	Dropped wrong coin in fare box
Complaints completed, 8.			
Investigation shows public at fault, 3.			
Investigation shows company at fault, 4.			
Turned out to be a claim, 1.			
Complaints on hand under investigation, 58.			
— — — — made five calls.			
— — — — made seven calls, two not in.			
(Signed)			

The accident-prevention organization centers in the claim department, the claim agent being chairman of a safety committee. This comprises also the electrical engineer, the engineer of maintenance of way, two superintendents of transportation and the master mechanic. The safety committee meets at intervals of two to four weeks to receive suggestions for improvement in equipment and service.

The working part of the organization is a group of five sub-committees, three for the city and two for the interurban lines. The city sub-committees consist each of eight trainmen and representatives from each of the four operating departments. The interurban committees are similar except that there are but four trainmen in each. The sub-committees meet occasionally, but their main duty is to keep suggestions flowing in to the central office. Boxes in which suggestions can be filed are provided at sub-committee headquarters, and these are turned in to the safety committee.

Although this plan has been in operation only since last August, some 250 suggestions have already been received and many have been acted upon. In some cases the suggestions take the form of carefully written reports, showing close observation and logical deduction. At present suggestions are coming in at the rate of two or three a day.

As a rule the safety committee turns the suggestions over to the head of the proper department at once, and if the matter is one not involving great expenditure it is attended to promptly and the claim department is so notified. Occasionally the suggestions relate to questions of policy which must be considered by the vice-president.

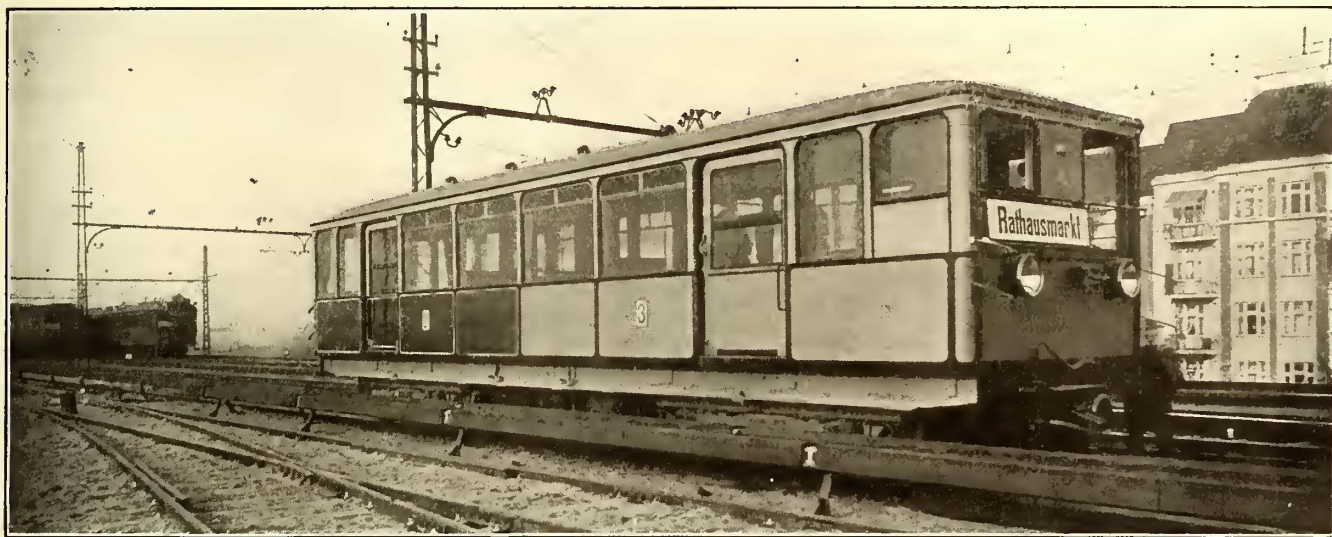
In Italy a scheme for a network of electric tramways covering 411 miles has just been approved by the Council of the province of Alessandria, and the first part of the undertaking, consisting of 298 miles, will be begun on the signing of the royal decree. The remainder will be commenced later, but a motor car service will be instituted in the meanwhile. The concession is for sixty years, and the province of Alessandria has agreed to give a yearly subsidy of \$423 per mile for thirty years, while reserving to itself 4 per cent of the gross earnings, exclusive of the subsidy.

Hamburg Elevated & Subway System

This, the Fourth and Concluding Article on the Hamburg Elevated & Subway System. Describes the Principal Features of the Cars, Schedules, Rates of Fare and the Growth of Traffic

The rolling stock of the Hamburg Elevated & Subway System consists at present of eighty cars, but fifty others were ordered very recently on account of the rapid increase in business. This rolling stock consists of motor cars exclusively. While the equipments were furnished jointly by the Allgemeine and Siemens-Schuckert com-

second-class compartment being dark-green imitation leather whereas the seating of the third-class compartment is of plain wooden slats. The two doors on each side of the car are of the sliding type 45 in. wide and, as is customary abroad, are operated by the passengers. The plan of the car also shows that the single cab for the



Hamburg Cars and Traffic—Standard Elevated-Subway Motor Car, with Hamburg-Blankenese Single-Phase Cars in the Background

panies, they are nevertheless so standardized that the motors of one manufacturer may be used with the control of the other. A plan and elevations of the standard car are shown in an accompanying illustration. In general these cars are similar to those of the Berlin Elevated & Underground Railway, but one important difference is that they are 12 in. wider, and another is the absence of a gap between the car and station platforms despite the fact that some of the stations are on curves of 590 ft. radius. This end was attained by placing the center line of the side doors in line with the center point of the trucks and by so building the car that the step at each doorway overlaps the edge of the station platform. When the car is new and empty the difference in height between the top of the car floor and the station platform is 10 in., but it decreases to the permissible minimum of 5½ in. when the wheel tires have worn down and the car springs have become set.

The increased width of this car made it practicable to install eight pairs of transverse seats in the center of the car. The seating near the doors is longitudinal so as to facilitate ingress and egress. This combination of seating with large open areas was provided to give the long-distance riders the comfort of cross-seat riding, while the short-distance passengers could sit near the doors or stand. The seating capacity of the car is therefore low in comparison with a surface car, but its combined seating and standing capacity varies from eighty-five to 100 passengers. Some of the cars are arranged for third-class seating exclusively, and others are equally divided for second and third-class. The exterior of the second-class portion is painted red and that of the third-class section yellow to avoid confusion when passengers are entering the car. All exposed woodwork of the car interior is of mahogany, but the upholstery varies, that of the

motorman occupies about two-thirds the width of the car, the open space alongside being used by the brakeman from which to observe the signals as a check on the motorman.

The over-all body length of the car is 39 ft. 8 in., the height above the rails is 10 ft. and the height of the body alone from the top of the floor line to the highest point

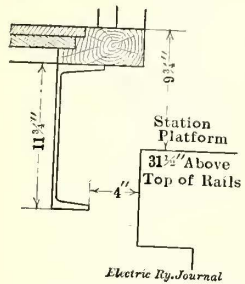


Hamburg Cars and Traffic—Seating Arrangement of Hamburg Car

of the roof is 7 ft. 7 in. A flat-arch roof was chosen in order to secure maximum head room. Ample ventilation is afforded by means of roof ventilators placed as shown in the drawings.

Every car is equipped with two 100-hp, 800-volt commutating-pole motors, multiple-unit control and automatic

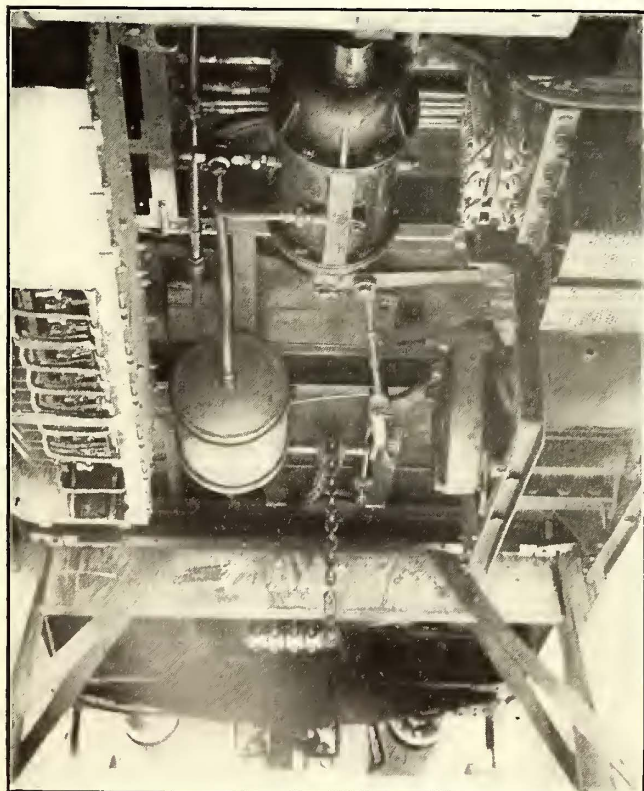
air brakes. Contactors and all heavy current cables are placed under the car body. On the Siemens-Schuckert cars, as illustrated in an accompanying drawing, the cables are placed in a reversed trough, the top and sides of which are of wood and the bottom of sheet iron, all lined with asbestos slate. On the Allgemeine cars the cables are carried from the car flooring in conduits with similar runways, the outer side being protected by a sheathing covered inside with a layer of asbestos slate. The cables on both cars are carried from the car floor in insulated sheet-metal grooves or runways.



Overhang at Platforms

The cars weigh empty 24 tons and loaded 30 tons. As they are heavily motored, they can be accelerated at the rate of 1.5 m.p.m.p.s. and can run at the high speed of 37.2 m.p.h., although in practice the speed on the elevated section does not exceed 31

m.p.h. The high schedule speed attained is shown by the record made on the first division placed in operation. This section is 4.06 miles long and has ten stops. The average distance between the stations is 2385 ft. The running time was fourteen minutes, thus giving the remarkably high schedule speed of 17.36 m.p.h. The length of the average stop at the station platform, even for the complete belt line, is only fifteen to eighteen seconds. The schedule speed in the belt section is 17.68 m.p.h. where stations are 2493 ft. apart. The length of a complete trip

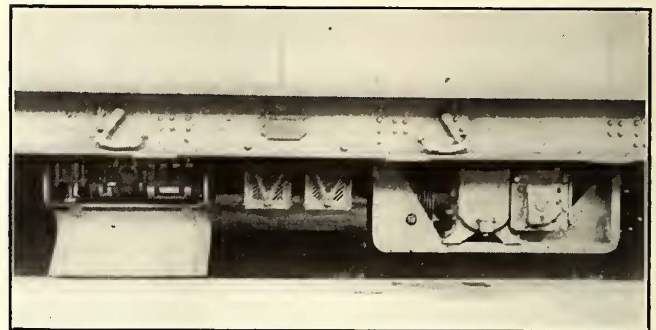


Hamburg Cars and Traffic—Under Side of Car, Showing Part of Air-Brake and Electrical Equipment

varies from about thirty-six minutes to thirty-eight minutes. During the rush hours in the morning a two-and-a-half-minute service is given on the inner or short line and a five-minute service on the outer or complete line and vice versa in the evening. It is possible, however, to run forty and even more trains an hour each way if the conditions demand. At present the usual train consists of two cars, four cars being employed for the rush-hour service.

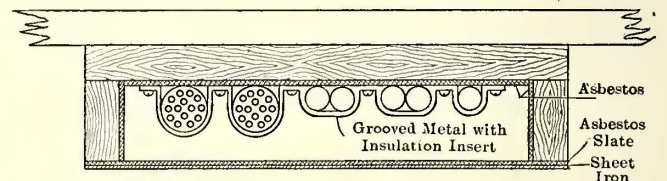
FARES AND TRAFFIC

It is an interesting fact that the company which operates the Hamburg system offered to follow the American plan of operating with one class of cars. This proposition was rejected in favor of the customary two-class cars. The experiences in Hamburg to date would indicate that the American plan with one class of cars would have given



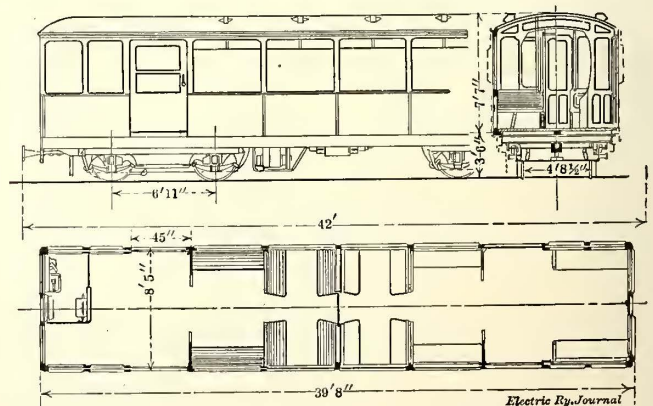
Hamburg Cars and Traffic—Side View, Showing Suspension of Apparatus

a better seat-use factor. On the ordinary two-car train, for instance, one-fourth of the space is reserved for second-class passengers, but not more than 10.25 per cent of the week-day travel is second-class. Even on Sundays, when there is a good deal of pleasure riding, the proportion of second-class riding does not rise to more than 15 per cent. The variations in these proportions are recorded



Hamburg Cars and Traffic—Method of Carrying Cables

daily on a special traffic curve (not reproduced). The necessity for careful supervision to prevent third-class riders from using the second-class compartments is shown by the fact that before special supervision was begun the sales of second-class tickets appeared to indicate that only 5 per cent of the week-day riders were using the second-



Hamburg Cars and Traffic—Plan, Half Side Elevation and Section of Car.

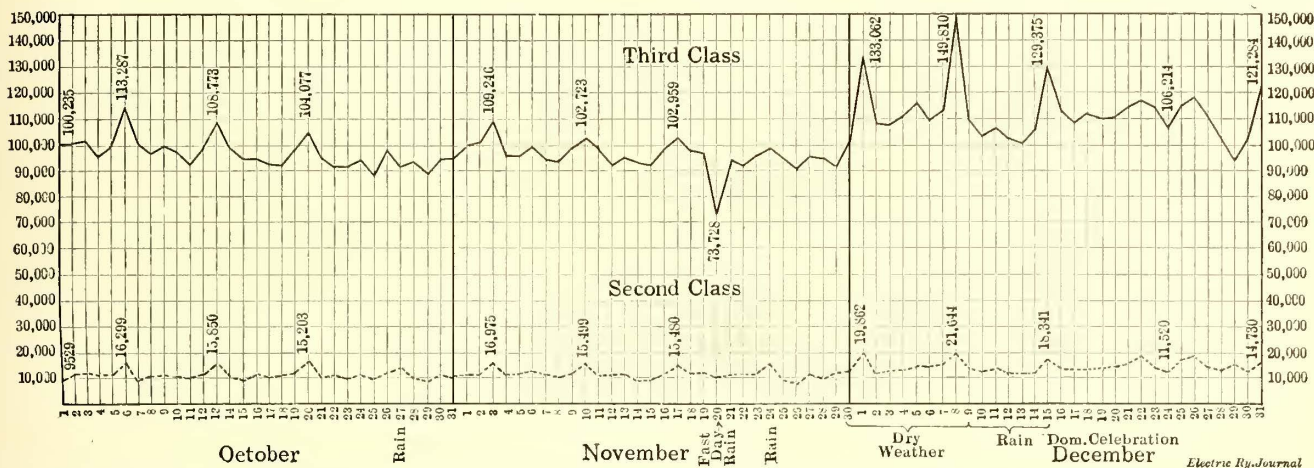
class compartments. A city ordinance assesses a fine of 75 cents for this misuse of tickets. The upholstery of the second-class compartments may be readily removed to permit their use as third-class compartments.

For straight ticket sales the fares on the Hamburg system are as follows: Five station stops, 2½ cents, third-class, and 3¾ cents, second-class; ten station stops, 3¾ cents, third-class, and 5 cents, second; eleven stops or more, 5

cents, third-class, and 7½ cents, second-class. Workmen's tickets for use before 7 a.m. are sold at 2½ cents, good for third-class riding for any number of stations, and, furthermore, the passenger may buy for 5 cents a non-transferable return ticket good for returning any time of the day. The weekly workman's card carrying the same privileges as the daily tickets is sold at the rate of 13¼

punched as the passenger walks by the ticket inspector and is taken up by another inspector as he leaves the alighting platform. This practice is like that used on the rapid transit lines of Berlin, London and Paris.

The accompanying traffic curve shows the increase in travel during the last three months of 1912, but it does not include the small proportion of commutation riders. This



Hamburg Cars and Traffic—Portion of Day-to-Day Traffic Curve, Showing Proportions of Second-Class and Third-Class Travel and the Influence of Weather and Holidays

cents for one-way riding and 27½ cents for two-way riding. On March 26, 1913, the workmen's tickets numbered 21,000 out of 109,000 tickets.

Season tickets good for use any number of times during the calendar year are sold as follows: Eight stops, \$20, third-class, and \$27.50, second-class. A charge of \$1.25 is made for every additional stop on a third-class ticket and of \$1.75 on a second-class ticket. An annual ticket good for any length of ride costs \$37.50 third-class and \$50 second-class. A peculiar feature of the season ticket is that the price for each succeeding quarter decreases. Thus, in the case of a third-class ticket good for eight stops, the first quarter costs \$7, the second \$5.75, the third \$4.75, and the fourth \$3.75. The reduced prices are given only to purchasers who turn in the card for the preceding three months. The figures for January, 1913, show that 177 annual third-class, 211 annual second-class, 1498 quarterly third-class and 294 quarterly second-class tickets were sold. The season tickets are not punched or otherwise recorded, so that the management has no day-to-day statistics to show how often they are used, but it is estimated that the average is four times a day. Doubtless, these cards afford a great saving to those who are near enough to their home to lunch and also to solicitors, collectors and others whose business requires much traveling within the city.

curve indicates that the total number of daily ticket passengers carried in December was about 3,600,000, with a daily maximum of 150,000 during the Christmas shopping season. The heaviest travel to date was on Easter Monday, March 24, 1913, when 197,000 daily ticket riders (or an actual estimated total of 205,000) were carried. This is a most extraordinary record, as only seventy-six cars were available for service. In order to handle this business, all cars were operated over the complete route in four-car trains, and a headway of two and one-half minutes was maintained so far as the supply of rolling stock permitted. As previously noted, additional generating

10 Pf.	10 Pf.
Hamburger Hochbahn.	Hamburg Elevated
Gültig zur Fahrt ohne Unterbrechung von der Zugangshaltestelle bis zur darauffolgenden	Good for an uninterrupted trip from entrance station to the
5. Haltestelle	5th Station
Bei Fahrtantritt lochen lassen. Bei Fahrtbeendigung abgeben.	Ticket must be punched at entrance platform and given up at exit platform.
3. Kl. 661	3d Class 661
3650	3650

Hamburg Cars and Traffic—Reproduction and Translation of Ticket

SCHNELLBAHN FÜHRER FÜR HAMBURG-ALTONA.

GÜLTIG VOM 1. MAI 1912 PREIS 10 PF.

STATION MILLERNTOR

STATION MILLERNTOR

Wissenschaftsvereins

KINEMATOGRAPHISCHE VORLEHUNG IN HOCHSTER VOLLENDUNG

GESCHENKT TAGLICH VON 3-11 UHR. SONNTAGS VON 1-11 UHR.

Hamburg Cars and Traffic—Title Page and Advertisement of Traffic Guide

About 10 per cent of the tickets are sold by electrically operated machines which print, cut and issue the tickets and also reject counterfeit coins. An accompanying illustration shows the actual size of a sample cardboard ticket from which the class and the number of stations permissible from the boarding station are indicated. The ticket is

equipment and fifty cars are now under way. In the first full year of service—July 1, 1912, to June 30, 1913—39,400,000 passengers were carried. The total car mileage was 4,588,000 miles and the annual performance per car 62,620 miles. The traffic curve previously mentioned shows the numbers of second-class and third-class passengers separately. It also shows all rainy days, holidays, religious festivals,

unusually fine weather, etc., thereby recording the reasons for great variations in traffic.

BOOKLET OF INFORMATION, CAR COMPARISONS

For the convenience of their patrons the managements of the Hamburg d.c. and Blankenese-Ohlsdorf single-phase rapid transit systems publish jointly an 18-in. x 21-in. folder map in colors on which the lines of both systems are shown in their relation to the principal parks, buildings and streets of Hamburg and vicinity. The back of the map carries the schedules of both railways and the rates of fare, also a list of public buildings, amusement resorts, banks, cafés and principal business buildings, with the name of the station nearest each place. The cost of publication is covered by carrying some advertisements and by selling the folder at 2½ cents per copy. The artistic printing of this publication is apparent from the views on page 179, one of which is a reproduction of the front cover and the other of an advertisement of a moving-picture theater, including the name of the railway station near by. The originals are printed in color.

In connection with the description of the Hamburg cars, the following comparison of the Hamburg-Blankenese single-phase and the Hamburg and Berlin subway cars, as given by Gustav Schimpff in his new book on "Economic Aspects of City and Suburban Railways" (Wirtschaftliche Betrachtungen über Stadt-und-Vorortbahnen) will be found of interest:

COMPARISONS OF HAMBURG AND BERLIN RAPID TRANSIT CARS					
	Hamburg-Blankenese Motor	Berlin Trailer	Berlin Subway	Average	Hamburg Subway
Number of seats	128	31	38	34.5	34
Weight of car, metric tons	63	24	14	19.0	24
Weight per seat, lb.	1082	1702	812	1258.4	1553
Capacity of motors, hp	2x180	4x70	....	....	2x100
Cost per car	\$22,750	....	....	\$7,500*	\$11,000**
Cost per seat	\$177.75	....	....	\$217.50	\$323.50
Acceleration, m.p.h.p.s.	0.984	1.31	....	....	1.53
Pressure per axle of loaded car, metric tons	14.0	7.0	....	....	7.5

* Average price of all cars.
** Present estimate.

WIND OVERTURNS DOUBLE-DECK CAR

The accompanying illustration, furnished through the courtesy of the *Tramway and Railway World*, shows a double-deck car of the Leeds & Bradford Tramways after



Double-Deck Car at Bradford Blown Over by Gale

it was blown over in open country by a gale at Allerton, Feb. 7, at about 10:30 p. m. Fortunately no passengers were in the car at the time. The crew, who were inside examining the sand-boxes, sustained a few slight cuts but were able to leave the car without assistance. Nearly every window of the car was broken and the woodwork

was jammed. At the Board of Trade inquiry it was decided that the fact that the car had an upper deck was not responsible for the accident. The general impression was that the car would have been overturned by the unusually severe wind even if it had been of the single-deck type. The board made no new rules but suggested that wind-measuring instruments should be fitted in a suitable place to give the tramway officers warning of high winds so that they could take the precaution of not running the cars in exposed positions. This car was operated on a 4-ft. gage, but a gage as narrow as 3 ft. 6 in. has been used elsewhere for double-deck cars.

CLEVELAND TESTS ON THE ILLUMINATION OF CARS

During 1911 and 1912 the Cleveland Railway conducted tests on three cars in all to determine the cost of illumination by means of mazda lamps and carbon lamps. These tests demonstrated the economy of the metallic-filament

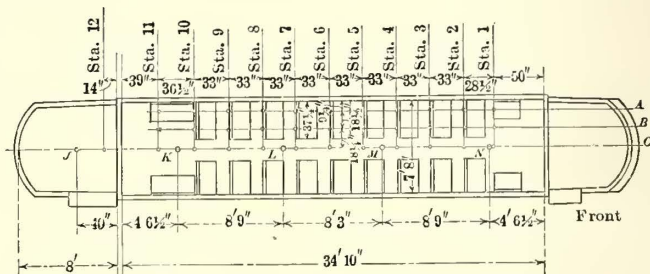


Fig. 1—Cleveland Lighting—Plan of 500-Type Car

lamp, but in January, 1913, arrangements were made for the luminometer tests hereinafter described in abstract.

CONDITION OF TESTS.

The tests were made on two 500-type monitor-deck cars, the plan view of which is shown in Fig. 1. The car bodies are finished in natural-cherry woodwork and have ceilings painted medium green. The seats are upholstered in rattan.

Car No. 537 was lighted with five 100-watt frosted-bowl mazda lamps in Holophane E-100 satin-finished reflectors mounted in a special shade holder. The lamps were mounted in what is known as the "H" position. An additional 100-watt lamp is so wired in connection with a selector switch that it can be instantly connected into the circuit in case of failure of any one of the five lamps regularly lighted. One circuit of 23-watt lamps provided light for the front vestibule, destination sign and headlight. Four of the 100-watt lamps were mounted on the upper-deck ceiling on the center line of the car as shown by the letters K, L, M, N in Fig 1. The height of these lamps was 7 ft. 8½ in. from floor level to tip of lamp. Lamp J was mounted on the ceiling of the rear vestibule at a height of 7 ft. 10 in.

Car No. 150 was alternately lighted with five circuits of 16-cp lamps, of which seventeen were in the car body, four in the rear vestibule, two in the front vestibule, one in the destination sign and one in the headlight. The lamps were not equipped with reflectors. The lamps in the car body were in four clusters as shown by the letters K, L, M, N in Fig. 1. The sockets were mounted on a bowl and held the lamps in a position approximately 45 deg. from the vertical. Cluster L contained five lamps and clusters K, M and N four lamps each. The height from the floor to the lamp bulb was 7 ft. 10½ in. The 23-watt mazda lamps were also tested on this car.

METHOD OF TESTS

The length of the car body was divided into eleven stations as shown in Fig 1. A set of luminometer readings was taken at three positions (A, B, C at each station). Position A was 9¼ in. from the side post, position B 27¾

from the side post, and position C was on the center line of the car. A and B represent the position of seated passengers. All luminometer readings in the car body were taken at the height of the seat back (37 in. above the floor). Readings taken in the rear vestibule were at a height of 42 in. (slightly lower than the top of the fare box). Three check readings at each point were taken on a Weber luminometer, which was equipped with a Lummer-Brodhun screen to permit close readings. During this test the potential of the circuit was held constant at 550 volts, and the amperes input was read in order to obtain the watts required by the lamps.

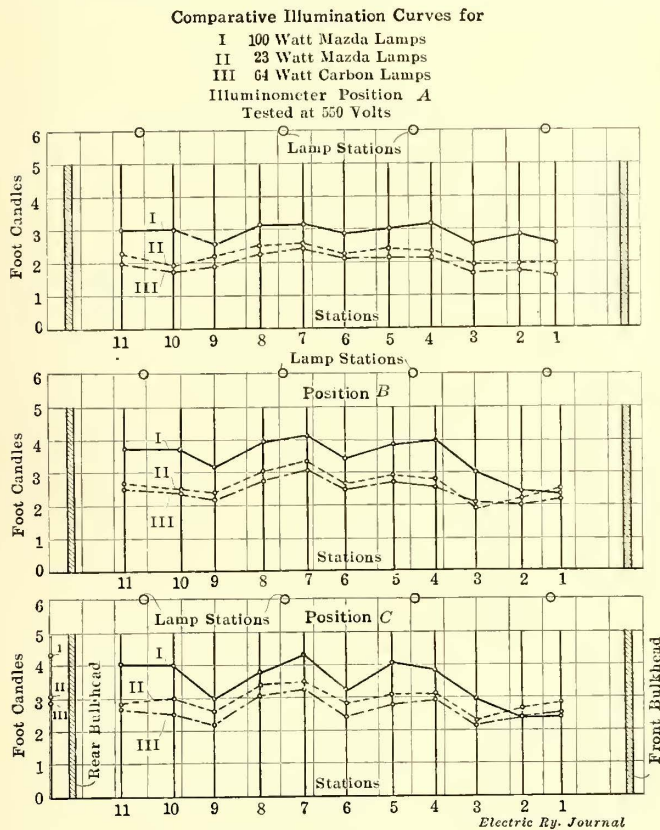
The luminometer was calibrated with a photometer and standard lamps and the constant determined. This con-

The value of *d* for mazda lamps has been found to be 13.8 and for carbon lamps 20.5.

This means that the life of the lamps operating five in series on a 550-volt circuit would be increased by percentages over the life obtainable when operating at the highest rated efficiency as follows: 114 volt, 100-watt mazda lamp, 63 per cent; 115 volt, 23-watt mazda lamp, 85 per cent, and 115 volt, 64-watt carbon lamp, 149 per cent.

The following figures show the illumination of the car body obtained at 550 volts with the three types of lighting. Readings are in foot candles.

	Car No. 537, 100-Watt Mazda Lamps	Car No. 510, 23-Watt Mazda Lamps	Car No. 510, 64-Watt Carbon Lamps
Position A:			
Maximum	3.16	2.58	2.47
Minimum	2.55	1.83	1.64
Average	2.87	2.17	1.98
Position B:			
Maximum	4.12	3.34	3.11
Minimum	3.00	1.96	2.01
Average	3.60	2.64	2.44
Position C:			
Maximum	4.28	3.52	3.28
Minimum	2.95	2.32	2.13
Average	3.63	2.96	2.66
Average for car body	3.31	2.52	2.30
Conductor's position rear vestibule	4.28	3.11	3.00



Figs. 2, 3 and 4—Cleveland Lighting—Comparative Illumination Curves from Position Indicated on Plan of Car

stant, divided by the square of the meter reading, gives the illumination in foot candles on the horizontal plane at the height at which the readings were taken. The luminometer constant was found to be 411.74.

TESTS

The lamps used on this test were rated as follows:

Lamp	Voltage Rating	Amperes Rating at 110 Volts			Amperes Rating at 115 Volts		
		Ave.	Max.	Min.	Ave.	Max.	Min.
100 watt mazda	114	0.8264	0.828	0.826	.....	.....	.....
23 watt mazda	115	0.2032	0.206	0.201	0.2085	0.212	0.206
64 watt carbon	115	0.567	0.576	0.552	0.593	0.604	0.579

The watts per candle at rated voltage were as follows:

100 watts mazda	1.114 watts per candle
23 watts mazda	1.34 watts per candle
64 watts mazda	3.94 watts per candle

The lamps were not operated at their highest efficiency in watts per candle-power. By running the lamps at a slightly lower efficiency the life is greatly prolonged. This fact is expressed approximately by the formula:

$$\frac{\text{Life at operating voltage}}{\text{Life at rated voltage}} = \left(\frac{\text{rated voltage}}{\text{operating voltage}} \right)^d$$

The curve sheets (Figs. 2, 3 and 4) show the illumination of the car with the three classes of lamps from three positions. Tests were also made at station 7-C at various potentials from 350 volts to 575 volts, and these showed that the carbon lamps were most susceptible to changes in voltage.

The following table shows the watts expended in lighting the car body (at 550 volts), the watts per square foot of floor surface and the foot-candles illumination obtained per watt per square foot:

	Total Watts	Watts per Sq. Ft.	Average Foot-Candles	Foot Candles per Watt per Sq. Ft.
Car No. 537:				
100-watt lamps	364.5	1.365	3.31	2.42
Car No. 510:				
23-watt mazda	377.5	1.415	2.52	1.78
64-watt carbon	1063.0	3.980	2.30	0.58

The efficiency of illumination of the various systems based on 64-watt carbon lamps as 100 per cent is as follows: 23-watt mazda lamps, 307 per cent, and 100-watt mazda lamps, 417 per cent.

The following voltages on the three systems will give an average illumination in the car body of 2 ft.-candles, which is a good reading light: 100-watt mazda lamps, 487 volts; 23-watt mazda lamps, 506 volts, and 64-watt carbon lamps, 536 volts.

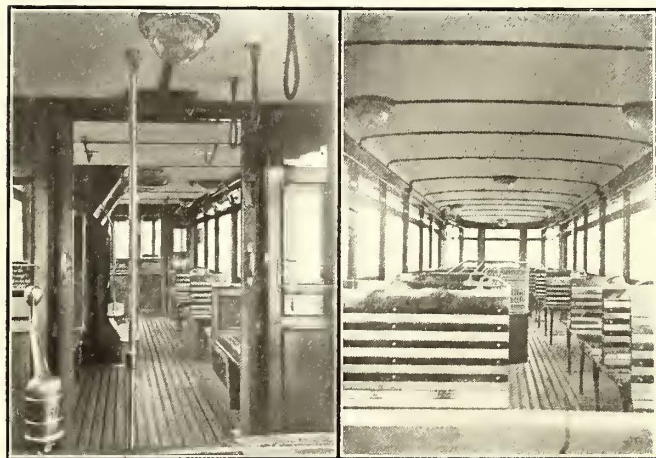
The foregoing tests were made by the mechanical department of the Cleveland Railway under the direction of T. Scullin, master mechanic, with the assistance of the engineering department of the National Quality Lamp Division, General Electric Company.

The Little Rock Railway & Electric Company, Little Rock, Ark., has been forced in several instances to pay claims for damaged clothing resulting from passengers leaning against the motorman's air-brake valve in the vestibule. In order to eliminate this source of claims a small leather cap, somewhat similar to a dice box, has been permanently attached to each motorman's valve. When the valve handle is removed the motorman places the cap over the valve, thus protecting the passengers' clothing from oil that may have accumulated on it. Another apparently small thing, which has materially added to the efficiency in air-braking on the cars operated by this company, is the application of a small set screw in the valve handle. As the socket in the handle shows wear it may be taken up by tightening this set screw. This adjustment permits better braking and lengthens the life of the valve handles.

Single-Deck and Double-Deck Prepayment Cars for Vienna

The Article Describes Some Single-Deck Motor and Trailer Cars with Separate Exits and Entrances and a Double-Deck Drop-Platform Car with One Inside Stairway to the Upper Deck

In accordance with the design of Ludwig Spängler, manager, the Vienna Municipal Railways has recently placed in operation 262 new single-truck two-axle cars and one trial double-deck car of the types shown in the accompanying drawings and halftones. Both types of car are notable



Vienna Cars—Inside Views of Double-Deck Car, Showing Bottom and Top of Inside Stairway

in Continental practice for the use of single-arch roofs and separate paths for entering and departing riders.

SINGLE-DECK CAR

The principal data with reference to the single-deck cars are as follows: length over all, 35 ft.; length over the platforms, 32 ft.; length of car body, 19 ft. 6 in.; maxi-

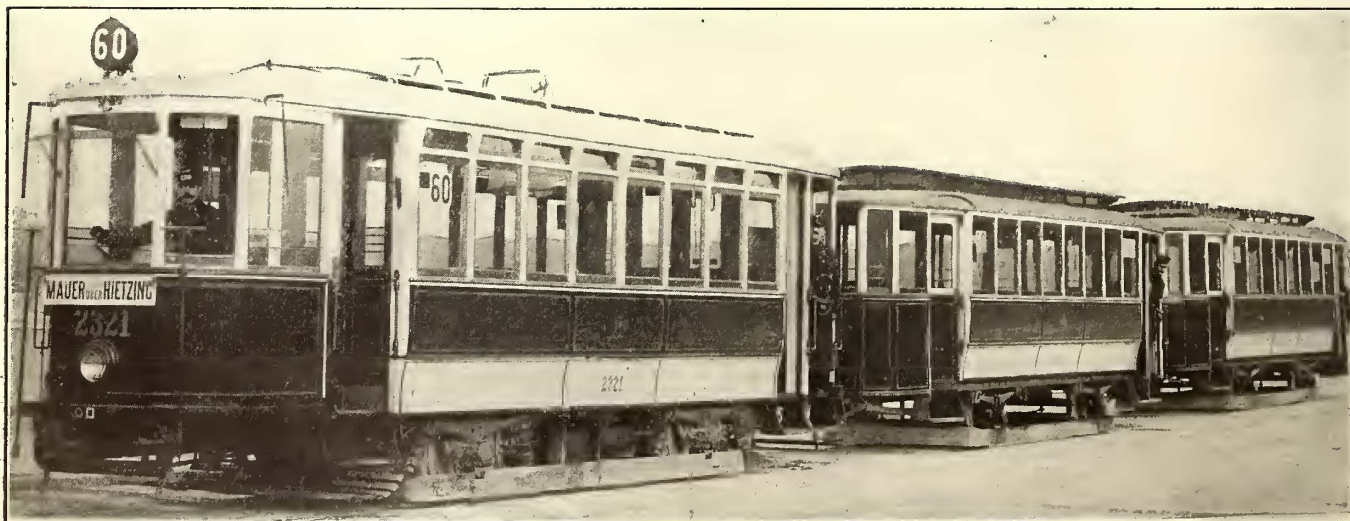
forty-two to fifty-six passengers; weight of car, including electrical equipment, 27,720 lb., and without electrical equipment, 18,700 lb.

When operated on city sections the exit and entrance doors on one side of the rear platform are kept opened back to back behind the dividing post, whereas the sliding door on the opposite side is usually closed. The doors on the front platform are the same, but in this case the double doors are closed and the sliding door is open, this exit, however, being obstructed by a chain when it is not in use.

In Vienna cars are operated to permit entrance and exit on the left side when facing the direction in which the car runs. Passengers who depart by way of the rear platforms use the aisle nearer the bulkhead marked "Aus," while boarding passengers use the outer aisle marked "Ein."

The exit and entrance steps on the conductor's platform are 25 in. each, the width of the common doorpost being $3\frac{1}{8}$ in. The exit step outside the sliding door is 28 in. wide. The body openings are provided with double doors which slide into individual pockets. The clear opening between these doors is $35\frac{1}{2}$ in. The seating arrangement calls for a double cross seat 37 in. wide on one side and a single cross seat $19\frac{1}{2}$ in. wide on the other, leaving a clear aisle width of $25\frac{1}{2}$ in. In order to avoid congestion near the platforms, short seats but of transverse type are placed against the bulkhead in each corner.

The single-arch roof not only saves weight but also gives the ample package room desirable on a car for interurban service. Ventilation is provided by movable sash in the upper part of the side windows. The bulkheads and vestibules have drop sashes. An interesting feature of the vestibule glazing is that the central window has an upper



Vienna Cars—New Motor Car of Flat-Arch Roof and Vestibuled Platform Type Hauling Two Trailers

mum width, 7 ft. 6 in.; length of platform, 6 ft.; distance between the individual axles, 11 ft. 10 in.; diameter of wheels, 32 in.; height of platform above the top of the rails, 31 in.; height of car floor above the rails, $37\frac{1}{2}$ in.; seating capacity in cross seats, twenty-two, and standing room for ten persons each on front and rear platforms with permission to add two more on the back platform and twelve in the car body, thus giving a total capacity varying from

sash adjustable for any angle, which can be used as an awning to prevent rain and snow from interfering with the view of the motorman. This scheme has proved so efficient that no squeegees are required for cleaning windows.

The cars are electrically heated, the control switch being so arranged that the temperature is maintained from 7 deg. to 10 deg. C. above that of the atmosphere. The motors

are of the interpole type rated at 55 hp each at 750 volts on an hourly basis. The braking equipment consists of Ackley hand brakes, geared 14:34, and Chaumont slack adjusters. In regular operation a solenoid brake is used. Means are provided whereby the motorman can sand the track behind the car in case of running backward on a grade. Each motor car is capable of hauling two trailers weighing 5.8 tons each empty and carrying twenty-two seated and twenty-four standing passengers.

DOUBLE-DECK CAR

The Vienna Tramways has also built one double-deck car, which has the same width and length, door arrangement, motor equipment and wheel and axle layout as the single-deck cars. The seating arrangement, however, is quite different, owing to the fact that the stairway to the upper deck is placed in the center of the car instead of on the platform. Plans of both decks are presented. The roof is of the single-arch type with the same ventilating system as that of the single-deck car. The height of the car is 16 ft.

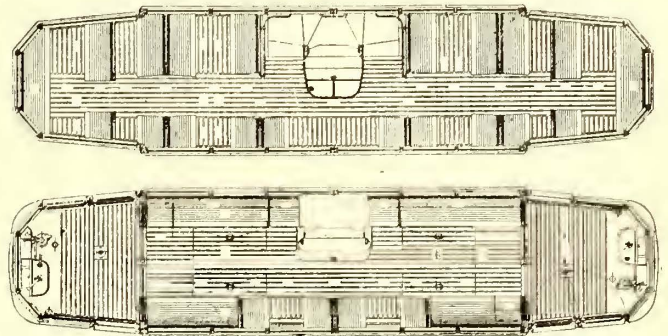
The accompanying views of the lower and upper decks show the position of the stairway and the character of the seating. The drawing of the end section indicates that the stairway is divided into three parts. This stairway is placed perpendicular to the longitudinal axis of the car in order to minimize the discomfort and possibility of accident due to sudden stopping and starting. It is constructed with an intermediate platform from which two aisles lead to the upper deck to enable incoming and outgoing passengers to choose separate routes. The lower deck seats sixteen passengers longitudinally and four transversely, while the upper deck contains thirty-two cross seats, to which room for twenty standing passengers on the two platforms should be added, thus giving a total of seventy-two passengers with a few extra standing places in emergencies. Smoking is permitted on the upper deck.

COMPARISON OF THE TWO TYPES

The weight of the double-deck car for seventy-two pas-

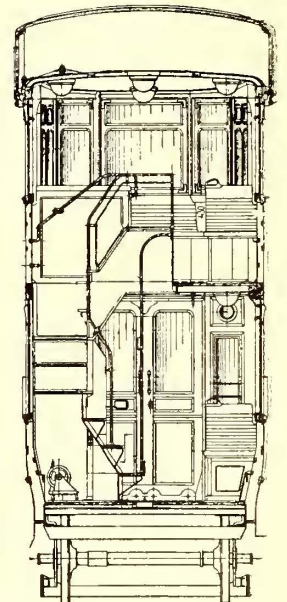
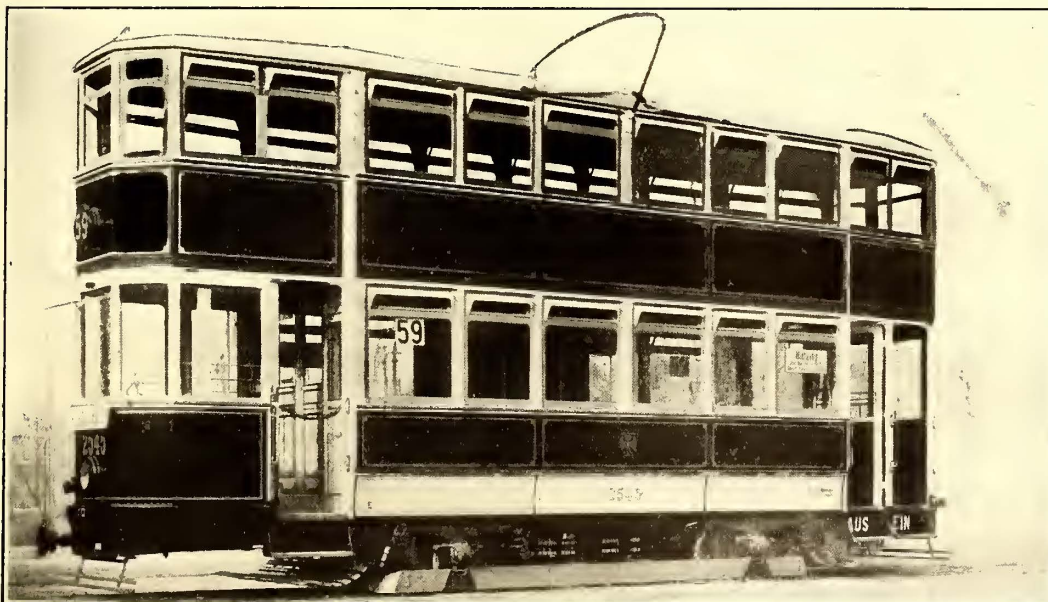
single-deck car is 594 lb., compared with 920 lb. for a two-car train or 814 lb. for a three-car train. If the total seating and standing capacity is compared, the double-deck car weighs 427 lb. per passenger, the single-deck car with a trailer 462 lb. per passenger, and the three-car train 400 lb. per passenger. However, while the three-car train weighs less per passenger than the double-deck car, it occupies a length of 101 ft. compared with the 34-ft. 9-in. length of the double-deck car.

Mr. Spängler believes that this comparison demonstrates



Vienna Cars—Plans of Upper and Lower Deck of Double-Deck Car with Inside Stairway

that a double-deck motor car has many advantages from the standpoint of economy, especially as it can also haul a double-deck trailer. The saving is particularly important in the case where such cars can be handled by a single conductor, as in cities with single fares and without transfer privileges, on railways where the stops are not too frequent and, in general, on lines where the interchange of passengers is not excessive. The fact that the double-deck car requires less ground area for a given capacity relieves the streets and affords a saving in carhouse construction. For the double-deck car there are seven passengers per



Vienna Cars—General View and Cross-Section of Double-Deck Car with Inside Stairway and Separate Entrance and Exit on Rear Platform

sengers, including electrical equipment, is about 14 tons, whereas a train consisting of the motor car and two of the company's lightest trailers weigh 18.4 tons for eighty-eight passengers. The lightness of the double-deck car is due to economy in the weight and size of non-essential parts, to the use of stationary windows (which are removed from the upper deck in summer) and to the employment of aluminum panels. The weight per seat of the

meter (39.37 in.) length, and for ordinary motor cars or trains only 4.22 to 4.32 passengers per meter.

In two communications to this journal, Mr. Spängler writes that the single-deck cars with separate entrance and exit which the Municipal Railways have had in use for several years have lowered the time of passenger interchange from 1.7 seconds to 1.3 seconds per passenger, a gain of 25 per cent over cars with no separate exit and

entrance. These cars are not operated on the prepayment plan, however, because of the very complicated fare system which is used in Vienna.

The double-deck car has been in daily use since March 15 on a radial line which is crossed by several belt lines. This condition results in a heavy transfer traffic, which has been accentuated by a great deal of curiosity riding. The car has given the public great satisfaction, especially as the upper deck is so pleasant for sightseeing. Motormen find it easier to handle this car than they do a train as it rides better and can be accelerated and braked with greater ease. Two conductors have been employed so far because four different fares are in use and the transfer traffic amounts to 50 per cent. During non-rush hours, however, only one conductor is necessary. The conductors find the double-deck car superior to train operation in that no time is lost in waiting for signals from the trailer car. The time for loading and for unloading at terminals is nearly 1.2 seconds per passenger; elsewhere it is 1.3 seconds per passenger. In both cases this figure is about 10 per cent to 12 per cent more than for a two-car train. This difference is not large and, it is thought, is more than offset by the quicker acceleration and braking and by the elimination of the trailer signal. Furthermore, the time saved at terminals without loops is another important advantage of a double-deck car as compared with a train of motor car and trailer. No difference has been observed between the average speed of a double-deck car and that of a train made up of a motor car and trailer. It is planned to try the double-deck car later on one of the busiest streets.

Acknowledgment is due to *Elektrische Kraftbetriebe und Bahnen* for the halftone views and part of the data in this article.

WHEEL AND AXLE PRACTICE IN NASHVILLE

The Nashville Railway & Light Company is finding it profitable to purchase its heat-treated axles in the billet and turn them in its own shop. After four years' experience with this method of purchasing axles it has been found that a saving of \$2.50 can be made on each 4½-in. axle renewed. The billets are purchased for approximately \$5.50, and the cost of turning is \$5 per axle. In addition to the saving, the plan also enables the mechanical department to employ continuously an expert machinist who is available for other shop work. Another advantage is that all axles may be purchased of one size and turned to fit any wheel bore.

For boring wheels the company has purchased Davis expansion boring bars in three sizes, namely, 3 in. to 4 in., 4 in. to 5 in. and 5 in. to 7 in. These bars are changed for each 1-in. variation in the cutting so that all chatter is eliminated and the bars are not subjected to over-strain. The boring-mill table is being revolved at 24 r.p.m. with good results, so long as the size of the bar is changed for each 1-in. variation in the cutting.

Other wheel practice included the use of single-life rolled-steel wheels 33 in. in diameter. These were selected to give considerable clearance between the motor frames and the paving, this being necessary in Nashville. Rolled-steel wheels are not being used to replace chilled wheels on single-truck cars, however, as it was found that with the larger wheelbase of the single-truck cars there was considerably more squealing with the rolled-steel wheels than with the cast wheels. The steel wheels are applied to the 4½-in. axle with a 6-in. wheel seat at 50 tons pressure, and no loose wheels have been detected during four years' experience. When the wheels are removed the pressure used is 120 tons. All wheels are purchased in car-load lots, the empty car being loaded with old wheels which have been held in storage until new ones have arrived.

"WITH THE BLINDERS OFF"

BY A FORMER RAILWAY MANAGER

As a novel idea let me suggest that it would be an excellent thing for his employers, his subordinates, the general public, his customers and himself if the operating head of a public utility company, or the head of any department of it that comes into direct contact with the general public, could be banished to private life for six months or a year and made one of that public so far as his ideas are concerned.

I have had this rubbed into me very strongly this past year, and I venture it as a matter of personal experience and as one well worth consideration in these times of unrest in the dealings between the public and its privately owned and operated utilities. I am an old operator of public utilities—electric railways, central station lighting and power plants and gas works. I have been considered very successful in my work, especially in regard to my dealings and relations with the municipal authorities, the general public, and the employees. But since my retirement to private life and my becoming a member of that general public I have learned a whole lot of the other side. My ideas have become broadened and my vision more clear and comprehensive, and I believe that were I again to take up the management of public utilities I should be of much greater value to my employers than heretofore, and I am only an average man of middle age.

About the time that I left the business, a year or so ago, I felt that I could see matters pretty clearly from all angles, and I think that I had a clearer conception than most in my position, for the matter has always been a fad with me; but the trouble was that I did not realize the situation strongly enough to make me act on it in the proper way.

This was not because I did not realize certain necessities and conditions and viewpoints on the parts of the general public and the employees, nor was it because care and thought and attention were not constantly given to the subject. These points occupied my attention much more than the routine work of operating, which is only a matter of close and intelligent supervision of results obtained from a well-organized and properly departmented force of employees. And this viewpoint of the public, despite the general public belief to the contrary, is the major proposition of every intelligent executive. It is the skeleton at his every feast, the old man of the sea that rides his back sleeping or waking.

The trouble with me was—and it is the trouble with many otherwise good executives—that the full viewpoint of the "other man" was an impossible one to me so long as I held my position and acted in it. I was, metaphorically, like a horse in blinders. My view was limited to a narrow streak straight ahead of me, and, instead of my eyes being able to roam over the whole landscape and see all things in their natural color and form, they were limited to a little, straight section. All outside that streak, was invisible or blurred and distorted.

And these blinders were a fixture so long as I held my position and fulfilled its duties. They are the results of the business environment in which every local executive finds himself, and their origin is the one constant viewpoint forced on him by that business environment.

From above there is the constant prodding to obtain more and more favorable financial results from the property that he manages. If those results have been poor from the standpoint of the owners, he is urged to make them good; if they are good, he is urged to make them better, and that "better" is used as a lever to make them a record. This is merely one of the phases of our present forcing system of development. It may produce good results in private businesses, but it is not an unmixed good in public utilities, either publicly or privately owned or operated.

From around him there is the constant complaint and suggestion of the patrons from their extreme viewpoint, often erroneous, often unreasonable, often unjust.

From below come the continuously intermittent demands or objections of the employees, often selfish and inequitable, very often untimely and ill-advised.

Between the three, the manager is almost always compelled to choose that of the owners, for his bread and butter seems to depend on his pleasing them and giving the results they demand. Then, unconsciously, he is led to regard the other viewpoints as wrong—generally intentionally so. And the pity of it is that under that constant urging and pressure the main assets of the utility are apt to be lost sight of or to be but dimly seen or appreciated by the executive. Those main assets are a satisfied and favorable public and a loyal and contented force of employees, and the beauty of these assets is that while they are intangible as to dollars and cents value they are the assets that not only finally give the best pecuniary returns but that add more to the actual value of the plant than does its whole physical property. It seems strange that this is not more fully realized or that, being realized, it is not more fully acted upon. It must be remembered, however, that the local operator or manager is not the only one that wears blinders. The owners and bondholders not only seem to wear very large ones at times but to add smoked glasses to the outfit.

Now, it is of no use for anyone to try to tell me that these assets are impossible or even excessively difficult to obtain or retain, even in some very unlikely localities. I know better by actual experience in many divergent sections of this country. Notwithstanding my blinder myopia I have achieved them with fair success in every community where I have remained long enough to put my ideas into full practice.

You will hear that it is "impossible to please the public; the more you cater to them the more they will require of you." You will also hear that it is "unwise as well as impossible to satisfy the employees; as fast as you give them the inch that they demand they will insist on the ell."

That is simply bosh! I have tried it and found the contrary in every case. This classification into "public" and "employees" is a survival of feudal ideas and has done more harm than even the masses and classes slogan of the demagogue. You and I and all of us are the public to anything in which we are not directly interested as owners or employees. As an electric-light man I was one of the public as regarded telephones, telegraphs and steam railroads, and with reference to them I never felt that I or those of my friends or acquaintances similarly situated were either fools, knaves or ingrates. The public is you and I and millions of other plain Americans just like us, and there is a mighty small percentage of us that will not respond in kind to just, equitable and courteous treatment or that will not feel and act in the reverse way where our treatment is also of the reverse description. This applies to individuals, firms and private and public corporations and whether we are treated as individuals or as a class.

And most of us are employees also—employees of some one or something—and there are few of us that will not respond in kind to justice, equity, courtesy or a little liberality from our employers. We may kick a little and talk a whole lot if the shoe sometimes pinches us, but if we have been the ones to make the misfit there is seldom ill feeling back of the talk, and if there is, we can always trust the public to sense the difference between a "grouch" and a genuine grievance. A genuine grievance always has facts back of it. These facts may be dimly perceived or understood, but they are felt and that is all that is necessary to most of us, for we seldom take the time or effort to visualize very exactly or thoroughly. As a rule we leave that important part of our work to incompetent hands, such as our favorite (political) newspaper or our public representative.

And it is these dim matters, lurking in the back of our minds, that it is impossible for the local executive of a public utility to realize fully so long as he remains in continuously active discharge of the duties of his position. He may really feel the same as one of the public toward other public utilities than his own, but unless he is a superman his business environment prevents him from recognizing that the matters which lead him to have certain feelings toward other public utilities are also adjuncts or attributes of his own business.

I know this to be true, for, despite flashes of intelligence and clear conception as to the real viewpoint and attitude of the public and the employees, some urgency of the business, some attitude of the owners or security holders, or some action of the public, the municipality or the employees, would cloud the situation to me and force the blinders back into position.

The moral to the public and to the employees is this: The apparent fault of your local utility or utilities may often be a misfortune of which they are unaware. It lies largely with you to dissipate that misfortune or that view of it, or, at least, to give the opportunity for that dissipation. Try the idea of looking at the other side of the shield. Come down to cases, and bring facts, not fancies, to back up your grievances. Do not break loose in newspaper, council-chamber, legislature or courts until you have tried direct, practical, sensible and courteous business appeal to the principals of your public utilities. That much is due to yourselves as well as to the utilities, for, individually, you are sane, just and courteous in your dealings with one another, and you must be the same to those who operate or manage your utilities; or you at once place yourselves in the wrong position. And you directly owe it to them to do this until, or unless, they have absolutely proved themselves impervious to truth, to dispassionate facts and to ordinary business courtesy—until this happens you have not fully done your share.

As a corollary to the above it might be insisted that it would be the proper and correct thing to give the public an opportunity fully to appreciate the other side by admitting it to the councils of the utility. But I am afraid that the time is not ripe for that, and such a course might be provocative of a little confusion in the management. The average American is born with an intuitive and complete knowledge of three things—how to manage a baseball team, how to edit a newspaper or magazine and how to operate a public utility, so that the probabilities are that in any city of 100,000 adults there would be 99,999 divergent, inexpert opinions on any one of these subjects (the other one being the actual manager), and this would be liable to produce confusion.

And the owners, operators and managers of public utilities have also something to learn. It is this: Shake off those blinders, open both eyes to the real facts, take every opportunity to go round to the other fellow's side of the shield and take—or give—time enough to study it thoroughly and minutely, time enough to obtain a clear and true view of it in its smallest detail. Only by thus doing can you obtain that clarity and completeness of vision of the whole situation that will enable you to deal with it equitably and justly and with advantage to yourself, your property and the public in general.

Take the blinders off yourselves, your agents and your subordinates, and keep them off no matter what you may find by doing so. You may have some things revealed to you that you do not like to see. But it is better so than unexpectedly to bruise yourself over them when you blindly stumble against them.

I have personally proved to myself and others that "in the country of the blind the one-eyed is king," and I am only sorry—for my employers, my profession and myself—that I did not shake off the blinders long ago. In that case I might have become a Tzar!

Municipal Responsibility for Strike Damages

Digest of Briefs Submitted to United States District Court in Case of Wells Fargo & Company v. Jersey City in Which Award for Damages Was Made to the Express Company

The recent Buffalo and Jamestown strikes and the resulting claims put in against the cities have brought out more forcibly than ever the importance of the question of municipal responsibility for strike damages. In this connection the case of Wells Fargo & Company against Jersey City, decided last May, is of inestimable value by virtue of the legal light it throws on the issues involved and the exhaustive citation of cases it gives on the various points.

On May 10, 1913, Jersey City was found guilty by the jury in the United States District Court at Newark because of the failure of the city to give adequate protection to Wells Fargo & Company during the express drivers' strike in 1910. The facts brought out in the trial case were that the company was a corporation organized under the laws of Colorado and a citizen of that State, but authorized to do business in New Jersey by permit of that State. It was engaged in a general express business between points in New York and New Jersey and various points throughout the country, in the carrying on of which it maintained its principal depot office at Jersey City in the terminal of the Erie Railroad Company, and its stables for the accommodation of its horses and wagons on Pavonia Avenue, Jersey City. All of its business for the district of New York City was handled by means of these wagons and horses. Evidence was submitted showing that upon Oct. 26 and 27, 1910, its drivers and helpers, not on strike themselves, were prevented from doing their work by fear of violence from mobs and disorderly crowds on Pavonia Avenue, Jersey City, and that from that time until Nov. 14, 1910, business was interrupted and partially destroyed and other property injured and destroyed by mobs and riots in Jersey City. The Mayor of Jersey City was notified of this disorder and the police force was doubled and night and day shifts put on, but notwithstanding these facts, the provisions were inadequate to restore order and the disorderly conduct and rioting continued. From additional evidence the jury found that the company was prohibited from doing its normal business during this period, and that because of such mobs and riots the physical property was destroyed to the value of \$300 and the intangible property, the business of the plaintiff, was damaged to the extent of \$43,000, which amounts were reductions from the respective claims of the company of \$512 and \$87,500.

The principal questions before the court were of course whether any damages could be collected and, if so, their amount. The brief presented by the plaintiff is a well-constructed digest of the law on these points. It centers largely around the questions of municipal responsibility for actual physical damages and municipal responsibility for losses sustained by "business" in general, most of the dispute being waged around the second point. The company's attorneys in the case were Collins & Corbin, Charles W. Stockton and John H. Mooers, of Jersey City, N. J.

The statute under which the express company brought suit is very similar in wording to statutes which are in force in other states, and references to these statutes in a number of instances were made in the brief. The purpose of all of these statutes, as expressed in their preamble or as defined by the courts, is to compensate for injury to property in consequence of mobs or riots and to discourage mob violence. According to the brief they are "remedial" in character. Hence, as determined in several decisions, such as *Marshall v. City of Buffalo*, 50 App. Div. 149; 64 N. Y. S. 411; *Spring Valley Coal Co. v. City*, 65 Ill. 571, 590; *Pittsburgh, C., C. & St. L. Ry. v. Chicago*, 242 Ill. 178; 89 N. E. 1022; *City of Chicago v. Penn. Company*, 119 Fed.

497, the law demands a liberal construction sufficient to effectuate the purpose of the statutes. In this case the claim was made by the plaintiff that the property protected by the act was all kinds of property that might be injured or destroyed by mobs or rioters. The act fails to specify particular classes of property, but says generally that recovery may be had for damage to "any buildings or other real or personal property." This, the brief says, is broad language, and there seems to be no justification for any limitations or exceptions. If, in the construction of the statute, recovery is limited to compensation for injury to real estate or tangible property, and other property rights are excluded, it is tantamount to a declaration that the Legislature intended that mobs might wreak their spite upon property rights so long as they abstained from injuring physical and tangible property. In *Palmer v. City of Concord*, 48 N. H. 211, it was held that business is property and entitled to equal protection with other classes of property. The city, however, maintained that the business of Wells Fargo & Company and the right to carry it on in Jersey City was not property or a property right having a situs there and therefore it was not property within the purview of the act in question.

On this point the brief says, in part:

"The peculiar nature of the business and the property rights of express companies has received in several cases the consideration of the Supreme Court of the United States and its various aspects have been defined. The leading case on the subject is *Adams Express Company v. Ohio State Auditor*, 165 U. S. 194, 41 Law Ed. 683 (1896). This case is the first in which the Supreme Court upholds the application of the unit theory of taxation in respect to express companies, in ascertaining the value of the capital stock of an express company and apportioning such a part thereof to a particular state for taxation as is represented by the ratio between the mileage operated by the express company in that state and the total mileage operated everywhere. The use of express companies' tangible property in a particular state in connection with the entire property of the company scattered throughout the country resulted in the creation of an additional value and was an asset to the company as a whole. This additional intangible value was considered by the states to be property having a situs where the tangible property was used.

"In the *Adams Express Company* case the court said: 'No more reason is perceived for limiting the valuation of the property of express companies to horses, wagons and furniture than that of railroad, road, telegraph and sleeping-car companies to roadbed, rails and ties, poles and wires of cars. The unit is a unity of use and management, and the horses, wagons, safes, pouches and furniture, the contracts for transportation facilities, the capital necessary to carry on the business—whether represented in tangible or intangible property—in Ohio, possessed a value in combination and from use in connection with the property and capital elsewhere which could as rightfully be recognized in the assessment for taxation in the instance of these companies as the others.

"We repeat that while the unity which exists may not be a physical unity, it is something more than a mere unity of ownership. It is a unity of use, not simply for the convenience or pecuniary profit of the owner, but existing in the very necessities of the case—resulting from the very nature of the business.'

"Continuing this thought the Supreme Court said:

"The property taxed has its actual situs in the state.

and is therefore subject to its jurisdiction. Pullman Palace Car Co. v. Penn., 141 U. S. 18, 22 (35:613, 3 Inters. Com. Rep. 595); Taylor v. Secor ("State R. Tax Cases") 92 U. S. 575 (23:663); Minot v. Phila. W. & B. R. Co. (Delaware R. Tax) 85 U. S., 18 Wall U. S., 21 Wall 492 (22:595); Columbus S. R. Co. v. Wright, 151 U. S. 470 (38:238).'

"Other cases in which the Supreme Court has affirmed the right of states to tax intangible property of this nature are Pittsburgh, C., C. & S. L. Ry. Co. v. Backus, 154 U. S. 429; Western Union Telegraph Company v. Taggart, 163 U. S. 1; Adams Express Company v. Kentucky, 166 U. S. 171."

On the basis of these decisions it was claimed that Wells Fargo & Company, conducting a general express business in several states and using for that purpose horses, wagons, equipment and other personal property which was kept in those states, had, in addition to that tangible property, certain intangible property and rights which had a situs where the tangible property was situated and the work was done, which were an asset and a thing of value in addition to the actual tangible property employed, which were subject to taxation, and, as a necessary corollary, entitled to protection. It being thus determined that Wells Fargo & Company had intangible property in Jersey City over and above their tangible property, the next point involved proof of damage done. The damages to the tangible property were easily shown, but the municipality strongly opposed any recognition of its responsibility for any loss to the company's intangible property or so-called "business."

On this point the brief quotes from *in re Jacobs*, 98 N. Y. 105, where the Court of Appeals of New York held:

"The constitutional guaranty that no person shall be deprived of property without due process of law may be violated without the physical taking of property for public or private use. Property may be destroyed or its value may be annihilated. It is owned and kept for some useful purpose, and it has no value unless it can be used. Its capability for enjoyment and adaptability to some use are essential characteristics and attributes without which property cannot be conceived, and hence any law which destroys it or its value or takes away any of its essential attributes deprives the owner of his property."

Other cases quoted in which "property" was held to mean the owner's rights to the use of things were *ex parte Koser*, 60 Cal. 210; *ex parte Law*, 35 Ga. 294; *Braceville Coal Co. v. People*, 147 Ill. 71; *Law v. Rees Printing Co.*, 41 Nebr. 146; *Smith v. Furgish*, 68 N. H. 123; *Wyndhamer v. People*, 13 N. Y. 378; *Griffith v. Charlotte, etc.*, R. R. Co., 23 S. C. 25. The conclusion reached from these cases was that the legal effect of depriving one of the use of his property is to take or destroy the property itself, and this applies both to real and personal property.

The municipality objected to the introduction of testimony as to the amount of business done by the plaintiff for the period from Sept. 1 to Oct. 25 for the year 1910 and the same period for the year prior and the year subsequent to 1910, also to the introduction of testimony showing the plaintiff's business from Nov. 14 to Dec. 31, 1910, and the same period for the year prior and the year subsequent to 1910, and to the further showing of the business done by the plaintiff from Oct. 26 to Nov. 14, 1909, 1910 and 1911, being the year prior and the year subsequent to the period in which the plaintiff claimed an interruption of and damage to its business, as well as the period itself in which the interruption occurred, also to the other tabulations showing the business of the company for the years 1906 to 1911, inclusive. This testimony was admitted, however, as throwing light on the value of the property.

In conclusion, the brief, says:

"The intangible property of the company had its situs in Jersey City in that it was an inseparable part of the physical property which had its situs in Jersey City. The destruction of and injury to the use value of the plaintiff's

property by reason of riotous mobs is as clearly within the contemplation of the Legislature as the physical destruction of the wagons which were burned in the streets by the mob, since the use value was an integral part of the value of the physical property which arose from its employment in the business. The entire destruction of the physical property, or merely the prevention of its use, would equally destroy the use value which inhered in its employment in the business. The right to use peaceably its property in the transaction of its business was injured and the actual use of the property destroyed, and in the destruction of the use, the value dependent upon the use was also destroyed. The measure of damages for the destruction of the use value of the property was the revenue which the plaintiff would have derived from the use of its property for the period of time for which the use was destroyed as shown by the testimony mentioned above. These were the injuries in consequence of the mob or riot and the damages sustained by reason thereof.

"To summarize, the law as laid down by the Supreme Court of the United States in the cases cited by the company is as follows:

"(1) The property of an express company engaged in transportation among the several states may be taxed by each of those states at a valuation greatly in excess of the combined market value of the separate pieces of physical property.

"(2) This increased valuation arises from the unity of use of all the property of the company and has its situs where the physical property is used.

"(3) The use value of such property is to be measured by the traffic in which it is employed and the gross earnings derived from such traffic.

"Furthermore, a destruction of the use of such property is a destruction of part of the property itself and the measure of damages is the loss of revenue which would have been received from the use of the property in the business in which it was employed.

"No fine-spun theories about situs should interfere to prevent large corporations whose property is taxable in many states from requiring of each state such measure of protection as the use value as well as the actual value of their property in these states requires."

DIESEL ELECTRIC CARS IN SWEDEN

In the foreign review of *The Journal* of the A. S. M. E. an account is given of the Diesel engine-driven motor cars which were recently installed on the Swedish railroads. The cars are designed to run at a maximum speed of 37 m.p.h. and take care of two trailers, weighing together 33 short tons. The power equipment consists of a six-cylinder, 75-hp Diesel engine, running at 700 r.p.m., and a direct-connected 50-kw, 440-volt, d. c. generator, supplying current to two 30-hp motors. The Diesel engine is of the four-stroke cycle type, with six working cylinders and one pump cylinder supplying compressed air for starting the engine and for fuel injection. The air for the brakes is supplied from a separate pump. The fuel tank is designed to hold fuel for a run of 745 miles with two trailers attached to the motor car.

A car was tested in May, 1912, in runs between the stations Enköping and Heby, a distance of 23 miles. Between these two stations there were five intermediate stations at which stops were always made. The following data as to consumption of crude oil are given: With motor car alone, weight of train 29 short tons, speed 24.8 to 27.9 m.p.h., the fuel consumption was 0.842 lb. per train mile. With motor car and trailer, weight of train 44 short tons, speed about 25 m.p.h., the fuel consumption was 1.07 lb. per train mile. With motor car, one passenger car and two freight cars, train weight about 60 tons, speed 21.7 m.p.h., the fuel consumption was 1.21 lb per train mile.

ROSE CARNIVAL IN PORTLAND, ORE.

During the week of June 9 the seventh annual Rose Carnival was held in Portland, Ore. One of the largest features of the festival was the electric parade, held on June 10 and June 14. Each year the decorated electric cars of the Portland Railway, Light & Power Company have been made more and more elaborate, and the last parade is claimed to have been the most elaborate and gorgeous ever presented. The parade was headed by the officials of the

waterfall, which, revolving, would make the tinsel look like water coming over the falls.

The first float was the "King's Float," representing the King of the Carnival. The second was the "Title Float," which bore the words: "Flowers and Gems of Oregon," and each float following represented a flower and a gem. Besides the ones reproduced, there were floats representing such combinations as "Chrysanthemum and Amethyst," "Cat's-eye and Geranium," "Agate and Poppy," "Lotus and Pearl," "The Tiger Lily," "Emerald and Wistaria,"



Portland Rose Carnival—Trolley Floats Representing "Flowers and Gems of Oregon" and "Rose and Onyx"

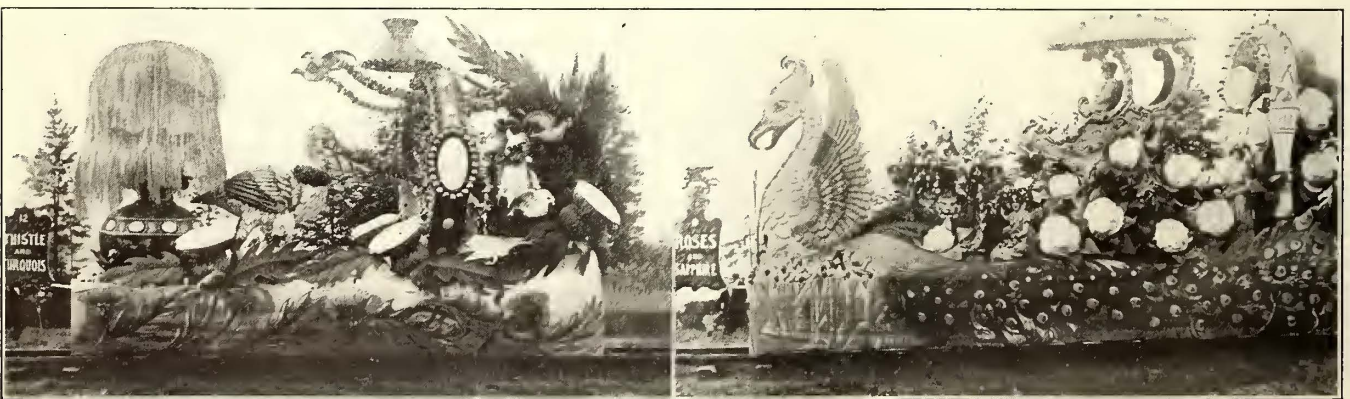
Rose Carnival in several decorated automobiles, followed by a large band, and between each of the floats were bands, marching.

The floats were built on single trucks, on which a perfectly flat body had been built. Part of the floor was lowered in the front end almost even with the track, and this lowered portion contained the controller and a place for the motorman. The cars were single-ended and equipped with two old motors each—W.P.-30s and GE-800s. On these platforms the floats were built, composed of papier-maché, tinsel, plaster of paris and paper shapes. These designs were built onto the floats and artistically painted, and colored lights and bulbs of different shapes were used to carry out the designs. The lights varied from 700 to

"Pansy and Diamond," and many other equally beautiful groups.

The motorman on all floats was concealed in the figure in the front of the car, which had small openings covered with white scrim, through which he could see but not be seen. The sides of the cars were draped close to the track with painted designs, and the only part of the car itself that could be seen was the end of the trolley pole, which extended out of the rear end of the float. Each car had two pages, dressed in red costumes, one to watch the trolley and the other to give orders to the motorman, as he could see only straight ahead.

In many cases mirror lamps were used to throw light to bring out the design, but as the brilliant coloring cannot



Portland Rose Carnival—Trolley Floats Representing "Thistle and Turquoise" and "Rose and Sapphire"

1200 lamps on each float, and the floats cost from \$1,000 to \$2,000 each.

Quite a number of the floats had movable parts, which were belted up from the axle. On float No. 12, "Thistle and Turquoise," a rose-entwined swing was in the circle with a little girl seated in it. This swing was connected to the bird's mouth by a cord of roses, and as the swing moved back and forth the bird's head would move as if pulling the swing, and its beak would open and shut. On float No. 4, "Rose and Onyx," there were revolving lights of different colors on a corkscrew shape behind the tinsel in the

be reproduced in the photographs they hardly do justice to this very beautiful and artistic pageant.

A scheme of electric underground railways for Milan is now in progress, while similar plans for Genoa and Naples are also about to be adopted. At Genoa it is proposed to run a 64-mile d.c. line from Sampierdarena to emerge at Quarto in the east. Of this route 5½ miles will be underground. There will be sixteen stations in the principal quarters of the city. T-rails, weighing 93 lb. per yard, will be used. The cost will be \$6,250,000.

COMMUNICATION**TRAFFIC CONDITIONS IN NEWARK**

93 NASSAU STREET, NEW YORK.

July 28, 1913.

To the Editors:

In your issue of July 26 you comment adversely upon my report with reference to the proposed trolley terminal in Newark. In a measure your comment misrepresents the situation there. The proposed terminal has not been put forward primarily for interurban traffic. The amount of essentially interurban traffic handled on the streets of Newark is almost negligible as compared with the traffic within the 5-cent zone. True, a great deal of the 5-cent traffic comes from outside the corporate boundaries of the city of Newark, but that does not make it interurban traffic. The traffic coming from Kearney, Montclair, Bloomfield, the Oranges, etc., is strictly urban street railway traffic and is handled and should be handled in the same manner as traffic originating within the city limits of Newark. My report does not present arguments against a terminal for interurban traffic, but I state that in my opinion there is altogether too little of such traffic in Newark to warrant the construction of this big terminal with its subway and elevated approaches. It is true that the down-town streets of Newark other than Market and Broad Streets are not well adapted to through operation of cars. Neither are they well adapted to operation into a down-town terminal. The emphasis of my report was upon the duty of the city to modify its street plan so as to render possible the adequate handling of the traffic problem, present and future. Comparatively few street changes are required to afford the traffic relief for which the proposed terminal was designed, and in my judgment it is "up to" the city to make these changes and to work along the line of the through routing of local traffic and the postponement of the construction of an expensive terminal with subway and elevated connections until there is sufficient interurban traffic of the kind they have in Indianapolis, Denver and the other cities you mention to justify the expense.

DELOS F. WILCOX.

SINGLE-PHASE TRACTION FOR NORFOLK & WESTERN RAILWAY

A decision has now been reached in regard to the system of electric traction to be adopted for the electrification of the Elkhorn Grade-Bluefield section of the Norfolk & Western Railway's main line. A recommendation to adopt the single-phase system was made by Gibbs & Hill, the consulting engineers of the company, after an exhaustive analysis of the various systems now in use both in this country and abroad. A careful study was also made of the local conditions involved, and comparisons were made of the capital and operating costs.

The intention is to use 25 cycle, single-phase current at a potential of 11,000 volts at the trolley. Energy will be supplied from a power house to be erected by the railway company at Bluestone, W. Va., with an installed capacity of 27,000 kw. For transmission purposes the potential will be raised to 33,000 volts, and the transmission line will be carried mainly on the catenary bridges. Feeding points will be established at suitable locations along the line.

In view of the fact that freight trains only are to be handled, the locomotives, of which there will be twenty-four, are to be equipped with motors of the induction type, and the control and connections are to be arranged to give three running speeds of approximately 7, 14 and 28 m.p.h. respectively. Special attention is being given to the question of regeneration and electric braking on grades, which would decrease the wear and tear on train equipment and also under favorable conditions tend to reduce the demand on the power house.

PROPOSED CHANGES IN CHICAGO ORDINANCE

A letter sent by Bion J. Arnold to a sub-committee of the committee on local transportation of the City Council of Chicago in reference to the proposed merger ordinance was mentioned briefly in a recent issue of the *ELECTRIC RAILWAY JOURNAL*. In referring to the proposed personnel of the new board, Mr. Arnold said that it would be necessary to pay comparatively high compensation to secure the kind of talent required by the technical nature of the work and that there should be adequate engineering and accounting representation in the commission. He disclaimed the idea that the members of the present board, and especially he, were attempting to retain their present positions and declared in regard to his salary as chairman of the present board that for several years prior to his connection with the board, and when he was able to give his entire time to professional work, his income was more than four times his total compensation now received from the board. He added that his only reason for retaining the chairmanship for some time past has been that he felt he owed a moral obligation to the public and railway companies represented to remain long enough to establish firmly the principles of the ordinances.

The writer took up seriatim the clauses of the proposed ordinance and made certain constructive suggestions in regard to them. Perhaps the most interesting was in connection with the allowance for maintenance, repairs, renewals and depreciation. With the present rate of fare, he said, the minimum amount stipulated in the present ordinances for maintenance of the properties should be increased from 6 per cent to 8 per cent and the right should be retained by the board to increase the percentages for both maintenance and renewals. The letter then said, in part, that the maintenance and renewal funds should be separately provided for and maintained, as in the present ordinances, for the reason that it would be but natural for the company to endeavor to utilize, on the maintenance of the property, the funds that ordinarily should be kept intact for renewals, as the renewal fund is cumulative, while the maintenance fund is not. If, however, the amount of these funds, as measured in per cent of gross receipts, could be accurately determined in advance, or if not accurately determined made amply high, there would be no objection to these funds being combined into one fund, even though the company was interested in the net divisible receipts. The statement continued as follows:

"If the proposed ordinance finally takes the form of guaranteeing to the company a fixed return upon its agreed capitalization, and the company is not interested in the net profits, these maintenance and renewal funds could be combined into one fund, and in this case, if no authority is given to the board of control to increase it, the total percentage for the two funds should be fixed at approximately 18 per cent of the gross receipts (based upon the present rate of fare), but it would be better to fix a minimum amount of 16 per cent and give the board of control authority to increase it if necessary.

"So much of this renewal fund, in either case, as remains on hand at the end of any fiscal year of the company, as well as the amortization and contingency funds, should be invested in the first mortgage securities of the company, at par or less, or in other safe securities drawing an equally high rate of interest with the company's securities, for by this method the otherwise idle surplus remaining in these funds will be kept working, in quick salable assets."

Mr. Arnold also refers to the desirability of the establishment of a contingency reserve fund, which he says has the indorsement of many able financiers. If this theory be accepted, the letter says, the income of the company should be distributed as follows:

"1. Operating expenses, including insurance, taxes and maintenance.

"2. Reserve for renewals to cover permanent shrinkage due to normal wear, depreciation, obsolescence, inadequacy, etc.

"3. Reasonable interest return on investment (or a basic return on 'agreed capital value').

"4. Amortization fund for the decapitalization of intangible values and tangible values, if the latter should be deemed advisable.

"5. Contingent reserve fund to provide for 'lean' years and other emergencies, due to catastrophes, etc., as above stated.

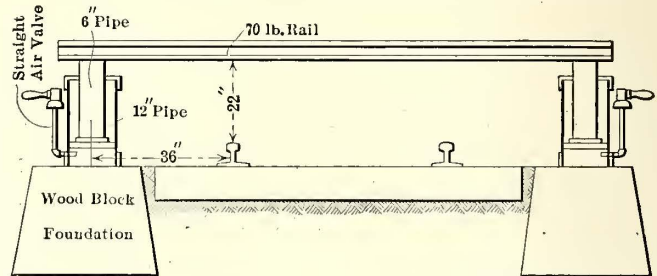
"6. Balance or residual net income to be shared by the company and the city with some provision for employees' bonus, pension and disability fund, unless it shall be decided to give the company a fixed guaranteed return and no more upon its capitalization, in which case the residual net income should be divided in such a manner between the city and labor as to insure the best possible service under a 5-cent fare, leaving it within the power of the city to devote its share of the profits to the improvement of the service. If the city saw fit so to use its entire profit, the highest standard of service would be obtained, consistent with the rate of fare paid, a protected investment and suitably compensated labor.

"Another method of fixing a standard of service is to ascertain, after carefully considering any specific case, the probable percentage of the gross receipts that should be devoted to service, leaving the balance to take care of fixed charges on the company's investment, profits, contingencies and amortization. In surface line street railways operating under average conditions, this amount would be from 65 per cent to 70 per cent of the gross receipts for service, including taxes, insurance and the necessary amounts for maintenance, renewal and accident funds, leaving 30 per cent to 35 per cent for company's use, amortization and contingency reserve purposes. For subways and elevated roads these percentages would vary from 40 to 65 per cent to service and 60 to 35 per cent for the other purposes above mentioned."

Referring to the section in regard to the right of the city to purchase the property, Mr. Arnold says that provision should be made for the reduction of the purchase price by the utilization of a percentage of gross receipts of the company or a portion or all of the company's share of its net profits and a portion or all of the city's share of its net profits by placing these sums in an amortization fund by which there could gradually be retired from the

HOME-MADE CAR HOIST OF THE CHOCTAW RAILWAY & LIGHT COMPANY

At a total cost of approximately \$40, M. Plunkett, master mechanic of the Choctaw Railway & Light Company, McAlester, Okla., has equipped his shop with an air hoist of sufficient capacity to lift one end of a 30-ton car. Essentially this hoist comprises two units, each located about 36 in. outside the rail on opposite sides of the track. Each unit is made up of a section of 12-in. pipe with a 6-in. pipe inside, the base of which is provided with a special cast

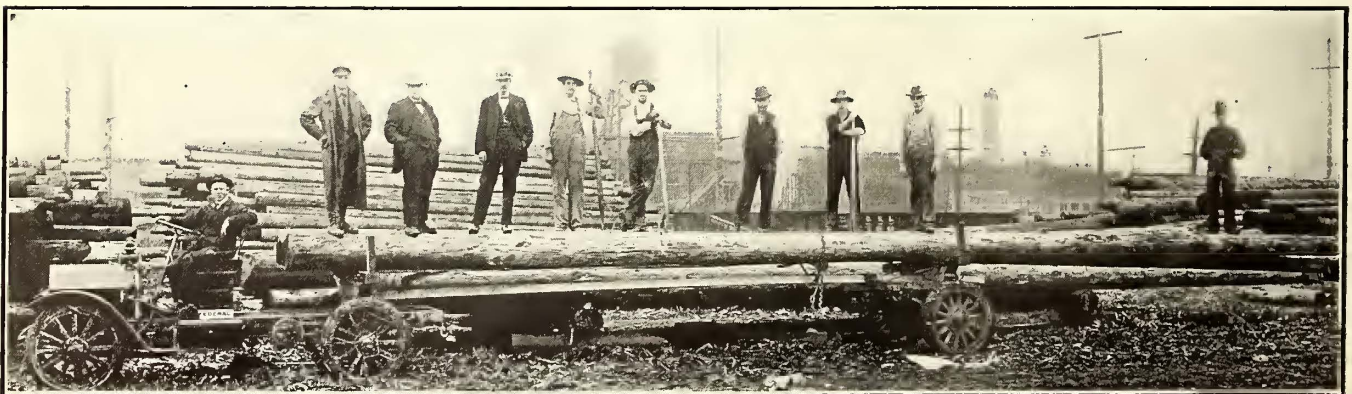


Home-Made Car Hoist Used by the Choctaw Railway & Light Company at McAlester, Okla.

piston head, and a piece of 70-lb. rail is extended between them to support the car body regardless of its width. This combination mounted on a substantial foundation takes the place of an ordinary hydraulic jack. The raising and lowering of the piston of 6-in. pipe is accomplished through an ordinary straight-air valve with the inlet just below the lowest position of the piston head. Air for these home-made hoists may be supplied either by connecting them to the air reservoirs on another car in the shop for which pipe and hose lines are supplied, or they may be attached to the air reservoir on the car body to be raised, thus causing the car to raise itself.

PORTLAND GASOLINE TRUCK ADAPTED FOR POLE HAULAGE

The adaptability of the gasoline motor truck to the most varied uses is illustrated in the accompanying view of a pole wagon in service with the Portland (Ore.) Railway, Light & Power Company. The truck is of 1-ton capacity and attached to it, with a long reach pole, is a two-wheeled



Gasoline Automobile Equipped for Pole Transportation

capitalization the intangible values contained in whatever capitalization might be agreed upon and fixed in the ordinance. This amortization, however, should extend over a sufficient length of time so that the annuity required, when measured in terms of the percentage of the gross receipts, should be low enough not seriously to interfere with the service rendered or jeopardize the investment of the company by reducing the agreed rate of return.

trailer. Both the truck and trailer are equipped with United States solid tires. In a letter to the builder, the Federal Motor Truck Company, Detroit, Mich., C. P. Osborne, superintendent of power of the Portland company, states that the truck travels, on an average, from 40 to 50 miles a day, going everywhere and hauling from one to five poles. The tires, without exception, have also rendered good service.

LONDON LETTER

(From Our Regular Correspondent)

Further particulars of the proposed underground railway for the conveyance of mails from Paddington to White-chapel, for which a bill is being promoted by the government, were made public recently before a select committee of the House of Commons. The maximum speed will be 35 m.p.h., reduced to 12 m.p.h. when running through stations. The trains will work automatically. It is proposed to have them mount a slight dead incline at stations and stop, a switchman setting the points at each station. There would be no drivers on the trains, and there would always be a "dead" section between a train in a station and an approaching train. Current will be furnished by the government from its existing Blackfriars station, and a smaller generating station at Mount Pleasant will be utilized as a substation.

The Metropolitan Railway bill has been passed for third reading in the House of Commons by a select committee. The bill provides for the transfer of the Great Northern & City Railway from Finsbury Park to Moorgate Street and the construction of an extension from the existing terminus in Lothbury, where there will be a new station. The same committee has also passed the City & South London Railway bill to authorize the enlargement of the present tube so as to bring it up to date with regard to equipment and speed. It is stated that another bill will be presented to provide a loop line at Euston which will carry the City & South London Railway on to the North London tube railways so that trains can be operated through from Clapham Common to Watford.

The Hammersmith Borough Council, which has to arrange for the storage and delivery of large quantities of coal, reports in favor of a scheme to pipe the coal by air and water from the wharf to the generating station.

At a recent meeting of the Croydon Corporation a resolution was unanimously passed on the recommendation of the tramways committee with reference to the motor omnibus traffic in the borough. The committee recommended that the government be urged to pass such legislation as will place the motor omnibus companies on terms of equality with regard to public obligations with the municipal tramways in the metropolitan area, and that a communication on the subject be addressed to the Prime Minister, the president of the board of trade and the member for the borough.

The tramway committee of the Birmingham City Council has recommended the outlay of many thousands of pounds upon engineering work and rolling stock for the tramway system. The principal object of the committee, apart from the construction of new lines and the extension of existing routes, is to link the tramway terminals in the center of the city so as to enable passengers to travel from one side of the city to the other without change of car.

It is understood that the proposal of the National Electric Construction Company to deal with the Oxford tramway question by installing petrol-electric tramcars in the center of the city and the overhead trolley system on the rest of the routes has been recommended for acceptance by the tramways committee. Sir Alexander Kennedy has reported to the Council in favor of the petrol-electric system.

James Scott Duncan Moffet, general manager and engineer of the Rochdale Corporation Tramways, has been appointed tramways manager to the West Ham Corporation, to succeed H. E. Blain.

Balfour, Beatty & Company, Ltd., London, have completed the tramway from near the Nottingham city boundary to Ripley, passing through many towns hitherto supplied with inadequate transportation facilities. The route from Ripley may be continued through Alfreton and Mansfield, thus giving Mansfield direct communication with Nottingham. The new tramway is single throughout, with loops at frequent intervals. The tramway company had to rebuild or improve about half a dozen bridges, and this work, with the road widening and the removal of several projecting buildings, has entailed a heavy expenditure. It is intended to run early morning cars for the convenience of miners and other workmen. A large permanent carhouse has been built at Langley Mill, where a number of double-

deck cars are ready for service. The main generating station is at Ilkeston, from which the current is distributed at 11,000 volts to the substations.

The Bristol Tramways & Carriage Company, which operates the tramway system in Bristol, has completed its motor works at Brislington, and in these works every detail of manufacture or repair is carried on. The capacity of the plant is 300 chassis a year. At the opening ceremony of these works it was stated that the policy of feeding the tramways traffic by means of the omnibus services linking up the routes at well-chosen points had proved very successful. The motor vehicles owned and worked at the present time number 550 cars.

To relieve the congestion of traffic in the center of the city, the Glasgow Corporation is at present considering the necessity of constructing a new bridge across the Clyde, over which a new line of tramways will be constructed. The Corporation is prepared to bear the cost of a new bridge immediately west of the Caledonia railway bridge. A second bridge just to the east of the Glasgow Bridge has also been discussed. These bridges should mean a speedier service from north to south. At present considerations of further extensions into the outer suburbs are also being made. The new program sanctioned by the Corporation includes 15 miles of new lines.

The sub-committee on extensions which has had these matters in hand, has also recommended that the Corporation authorize Mr. Dalrymple, the general manager of the tramways system, to visit several of the most important cities in America, with a view to making himself acquainted with the most modern and up-to-date methods of operation, and this visit has now been authorized by the Corporation. He will be accompanied by the Master of Works, who will inspect different types of drawbridges.

In 1908 the London County Council decided that provision should be made for renewals at the rate of two-thirds of a penny a car mile, and that the question of the adequacy of this provision should be again considered in five years. The recent falling-off in the tramway receipts on account of the increase in the motor omnibus competition has brought to a negligible figure (£497) the surplus of 1912-13 to be added to the amount already in the renewals fund, and the surplus (estimated at £43,399) for the current year will be very small unless conditions are altered materially. The weekly mileage at present being run is about 1,100,000, and reckoning the annual mileage at 56,000,000, the amount per car mile works out at 0.635d., as compared with the estimate of 0.66d. of five years ago. The reduction is due chiefly to the item of permanent way, which has been decreased from 0.54d. to 0.498d. Experience has shown that the slot rails last very much longer than the other surface trackwork, the life of these rails being estimated to be about thirty years. It is considered that an average expenditure of about £139,000 a year, equal to 0.595d. a car mile run, will be sufficient to meet the normal requirements during the next five years. To meet this total expenditure of £695,000 there was £633,010 in the renewals fund at the beginning of the financial year and £273,786 in the general reserve fund. In view of the fact that under existing conditions it is practically impossible to estimate the amount that will be available for renewals, there appears to the highways committee to be no advantage in revising the basis at present, and the members of the committee are of the opinion that the actual surplus of each year should be carried to the fund for renewals, leaving the question of a possible revision of the basis for a further period of two years.

In the London letter which appeared in the *ELECTRIC RAILWAY JOURNAL* of July 5, page 37, referring to the London & Suburban Traction Company and the acquisition of a controlling interest in the South Metropolitan Tramways, the statement was made that "with the exception of the London County Council Tramways, all the tramways and motor bus services in the Metropolitan area are under one control." That statement was incorrect inasmuch as the West Ham, East Ham, Leyton, Walthamstow, Croydon, Erith, Bexley, Barking and Ilford Tramways systems are all in the Metropolitan area and none of them has been acquired by the first-named company. Practically all the tube railways, tramways and buses in the county of London, except the London County Council Tramways, are, however, now under the one control.

A. C. S.

News of Electric Railways

Railroad Rates for October A. E. R. A. Convention

The following preliminary announcements regarding reduced rates for the 1913 convention of the American Electric Railway Association which is to be held in Atlantic City, Oct. 13 to 17, are made on the authority of the passenger associations interested.

Trunk Line Association.—The association includes New York, New Jersey, Pennsylvania, Delaware, Maryland, District of Columbia and the northern part of Virginia and West Virginia. Rates—One and one-half first-class limited fare, with minimum of \$2 for the round trip, going and returning via the same route only. Tickets to be sold and good going Oct. 10 to 14 and returning to reach original starting point not later than Oct. 20.

Central Passenger Association.—The association includes southern Michigan, Indiana and Ohio, a small portion of western Pennsylvania and that portion of Illinois extending from Chicago through Peoria and Quincy. Rates—Two cents per mile traveled in each direction to Eastern termini of Central Passenger Association, added to one and one-half first-class limited fare for the round trip from such termini to Atlantic City. Tickets to be good going and returning via the same route only and over which one-way tickets are regularly sold. Tickets of standard form "S" to be sold on Oct. 9 to 13, inclusive, except that from points in the States of New York, Pennsylvania, West Virginia and from Bellaire, Bridgeport, Martins Ferry, Steubenville, Wellsville and East Liverpool, Ohio, tickets will be sold on Oct. 10 to 14, inclusive. Return limit to reach original starting point not later than midnight of Oct. 21, 1913, except that on tickets sold from points in the States of New York, Pennsylvania and West Virginia and from Bellaire, Bridgeport, Martins Ferry, Steubenville, Wellsville and East Liverpool, Ohio, return limit to reach original starting point not later than midnight of Oct. 20, 1913.

Western Passenger Association.—This association includes Wisconsin, Minnesota, Iowa, Kansas, Nebraska, South Dakota; the eastern part of Colorado, including Denver, Colorado Springs and Pueblo; the eastern half of North Dakota, including Bismarck; the northern half of Missouri, including St. Louis and Kansas City, and the northern part of Illinois, including some joint territory with the Central Passenger Association in that State. Rates—Open rate of 2 cents per mile in each direction to Chicago, Peoria or St. Louis, added to the fares tendered therefrom, from a limited number of points in Western Passenger Association territory to be selected by the rate clerks. Fares made on one gateway to be equalized through other gateways, from territory from which it is customary to make such equalizations. From points in Illinois, also from Bellevue, Burlington, Clinton, Davenport, Dubuque and Keokuk, Ia., and from Hannibal and St. Louis, Mo., tickets to be sold Oct. 9 to 13, inclusive, with final return limit to reach original starting point not later than midnight of Oct. 21. From other points in Western Passenger Association territory tickets to be sold on Oct. 8 to 12, inclusive, with final return limit midnight Oct. 22.

New England Passenger Association.—The association includes all territory in the United States east of the New York Central and Hudson River Railroad and a line drawn from Albany north through the Hudson River and Lake Champlain, but not including Rouses Point, N. Y. Rates—With the exception of the Bangor & Aroostook Railroad and Eastern Steamship Corporation, the rates will be double local to boundary points of the territory, plus the rate offered by the Trunk Line Association. Tickets to be sold and good Oct. 10 to 14, and returning to reach original starting point not later than Oct. 20.

Transcontinental Passenger Association.—This association covers in general the through bookings from the territory west of that included in the Western Passenger Association and north of that included in the Southwestern Passenger Association. It also controls the through bookings to or from Pacific Coast points and what are termed the Eastern gateways, namely, Chicago, Peoria and St. Louis. No special reduced rates have been authorized, but delegates should avail themselves of the lowest tourist excursion rates.

Advance Notices of the A. E. R. A. Convention Programs

It is announced that the programs of the American Electric Railway Association and its allied bodies are well in hand. Aside from the committee reports of the Engineering Association and the Transportation & Traffic Association the convention will embrace subjects by the other organizations as follows: American Association: "Valuation," "Relations of Carriers to the Development of the Territory They Serve," "The Relief of City Congestion by the Construction of Subways and Viaducts," "Electric Railway Securities from the Investors' Viewpoint," "Present Tendency of Public Utility Laws and Regulations," and "Profit Sharing with Employees."

For the accountants F. B. Lasher will speak on "Accounting Department Conferences," A. R. Patterson on "Is the Accounting Department a Non-Productive Department?" B. W. Kalweit on "Transfers," and W. H. Forse, Jr., on a subject which he himself is to choose.

For the Claims Association John J. Reynolds and M. P. Spellane are preparing a joint paper on "Mechanical Devices for Preventing Accidents"; H. V. Drown and J. H. Handlon a joint paper on "The Prevention of Accidents"; George Carson a paper on "The Value of Safety Committees," and M. D. Bracken a paper on "Motor Vehicles."

President Harries' Call to Executives to Attend A. E. R. A. Convention

President George H. Harries has addressed the following letter to the presidents of member companies of the American Electric Railway Association urging them and others financially interested in electric railways to attend the next convention of the association:

"That the 1913 convention of this association, which is to be held at Atlantic City Oct. 13 to 17 next, will be a success is as nearly certain as any human thing can be, but it may be much less of a success than it could be. The deficiency, if there be any, will largely result from the absence of a great many presidents, vice-presidents, directors and heavy stockholders, who may be under the impression that such an assemblage as ours is composed for the most part of those who are engaged in pure operation. As a matter of fact, the bulk of the association's work has been and is being done by those holding responsible executive positions.

"The parent association has delegated detailed matters to the affiliated organizations and itself deals with the large questions that most deeply interest the executive chiefs and the more important investors, and it is in the sessions of the parent association that your presence and your views will have great value.

"At our October meeting there will be discussions on: 'Valuation,' 'Relations of Carriers to the Development of the Territory They Serve,' 'The Relief of City Congestion by the Construction of Subways and Viaducts, the Cost and Inadequate Return,' 'Electric Railway Securities from the Investor's Viewpoint,' 'Present Tendency of Public Utility Laws and Regulations,' 'Profit Sharing with Employees,' and a number of other most interesting topics, many of which are daily problems.

"Seventy-six per cent of the electric railway mileage of the country is affiliated with this association and we are steadily acquiring the outstanding remainder.

"May we not reasonably expect the presence of you and of the others suggested in this letter at our October assemblage?"

"'United we stand, divided we fall,' may be both trite and ancient; but it is true."

Change in Organization of the New Haven Railroad

Howard Elliott has been elected president of the New York, New Haven & Hartford Railroad to succeed Charles S. Mellen, resigned. With the coming of Mr. Elliott it is proposed to change slightly the scheme of organization of the company. The president of the company is and has been not only the executive head in the general adminis-

tration of the associated properties, but also the operating head of each. The special committee of directors delegated to select a successor to Mr. Mellen suggested that the titular head of the New Haven system should give his attention to the general administration and supervision of the associated properties, with an operating head for each separate property who would be responsible for efficient service. The committee thought that this could be probably done best by creating the position of chairman of the board for the New Haven and for each separate property, to be filled by one who would be chief executive of the entire system, while the president of each company should be the operating head, subordinate to the chairman of the board of directors.

To put into effect the suggested organization will entail a change in the by-laws, which, however, cannot be completed before the stated meeting of the board in October. The exigencies of the situation required more immediate action and the committee suggested that, pending the necessary changes in the by-laws, a president be elected who would as soon as possible be made chairman of the board, and that the position of president should be filled by one whose duties would be defined as outlined by the committee.

Developments in Detroit—Statement of Company

The meeting of the committee of the Common Council of Detroit, Mich., which was called for July 29, to consider the recent reply of the Detroit United Railway made through F. W. Brooks, general manager of the company, was postponed until the evening of Aug. 1, when it was expected that the company would present a statement supplementing its previous communication. The reply of Mr. Brooks was referred to briefly in the *ELECTRIC RAILWAY JOURNAL* of July 19, 1913, page 110. That communication considered quite thoroughly the questions of low fares, extensions, etc., and was concluded with two separate and distinct proposals from the company. After referring to the legal and moral responsibilities which rest upon the directors and officers of the company the communication of the company presented on July 14 said:

"It is not necessary at this time to point out the many somewhat minor objections to the ordinance, because if there is a disposition on both sides to get together on some fair and workable ordinance, doubtless these objections can be removed, but there are insuperable obstacles in the way of acceptance.

"First.—It provides for a rate of fare which cannot pay the cost of maintenance and operation, let alone paying any return on capital invested.

"Second.—It provides for the immediate construction of several extensions, which we concede are necessary, under terms and conditions which render it impossible to obtain the necessary capital."

On the subject of low fares the communication said in part:

"We have had the accounts for the year 1912, and for the first five months of the year 1913, which are kept in accordance with the methods prescribed by the Interstate Commerce Commission, carefully examined by competent auditors for the purpose of ascertaining what would have been the excess or deficit of earnings over cost of maintenance of operation had the company received 3 cents for each passenger fare instead of the rates which have prevailed. The result ascertained shows that for the year 1912 there would have been a net deficit from operation of cars within the city of Detroit, at 3 cents per passenger, after giving credit for all miscellaneous revenues whatever, and before charging any interest on investment or depreciation, of \$49,816; and for the first five months of the present year, under like accounting, \$20,429.

"That is not all. The proposed ordinance requires the company to do a large amount of paving which the city is now required to do, and which would increase the annual deficit above shown to an amount several times larger. Moreover, if the railway is to be kept up as it should be to prevent ultimate loss, there must be set aside each year out of its earnings for a depreciation reserve not less than \$500,000 to cover losses from depreciation and obsolescence;

but no amount whatever was allowed for this purpose in the computations showing the above deficit.

"The ordinance also calls for universal transfers. This would considerably reduce the number of fares sold, for many people could then ride for one fare instead of two.

"It is, therefore, too plain for discussion that under a 3-cent fare there would be no net earnings whatever to pay interest upon the company's indebtedness, or upon any part of it, and in considering this proposition it should not be forgotten that the company has, over the greater part of its system in the city, unquestioned right for several years to receive a higher rate of fare than is prescribed in the proposed ordinance. This right, and substantially all other rights, it must give up without anything in return."

Referring to the extensions, the communication said:

"The cost of the immediate extensions, which include necessary cars, power and other equipment called for by the proposed ordinance, so far as it can be estimated by our department heads, will amount to more than \$1,700,000. When installed they will have to be operated under the same terms and conditions as the rest of the lines, and therefore must be operated at a loss. Moreover, we will be obligated to cease operation and to remove them at any time the Council may direct.

"It should be perfectly plain to any one that if this company should attempt or agree to attempt to operate its lines at a loss, and at the same time agree to build extensions removable at the will of the city, which during the continuance of their operation must likewise be operated at a loss, it could not obtain one dollar of additional capital to build such extensions.

"The ordinance, therefore, calls for that which is impossible, and whatever the consequences may be, both to the people of the city of Detroit and to the company, we must say that under no circumstances can it be accepted.

The company next called attention to the fact that the proposed March 4 ordinance apparently ignores Section 19 of the ordinances of the Common Council of the city of Detroit, approved Dec. 4, 1894, concerning the Detroit Railway, to which the Detroit United Railway is the successor in interest. That ordinance is commonly known as "the 3-cent fare ordinance." Under it the railway company was bound not only to operate the lines therein specified, but to construct and operate, under the same terms, all further extensions and additional lines which the Common Council should deem to be for the public convenience, or to give special privileges by which such lines, if constructed and operated by others, would become a part of the same general system of transportation. The company says that this ordinance was accepted by the railway company and constitutes a binding contract between the city of Detroit and the company and that the city of Detroit is not now at liberty to violate that contract. In this connection the company said in part:

"Section 19 is not confined to streets upon which no street cars are operated. It extends to all streets (excepting the streets occupied by the Fort Street lines, as stated in said section), upon which street cars are operated under a franchise which expires before Dec. 4, 1924.

"After the determination that the franchise to operate street cars on any of said streets has expired, no third person or corporation can operate street cars thereon until this company has been given the opportunity to operate and refused to operate the same, under the terms and conditions of said ordinance of Dec. 4, 1894. This company will not refuse, but, on the contrary, hereby states that if given said opportunity it will accept the same, and maintain and operate street car lines upon said streets in accordance with the terms of the ordinance of Dec. 4, 1894."

The company then made the following separate and distinct propositions:

"(1) In case the city of Detroit shall deem that the public convenience requires that all the street railways in the city (whether constructed under the ordinance of Dec. 4, 1894, or under other ordinances, and whether the franchise thereof has or has not expired) be operated under said ordinance of Dec. 4, 1894, and in connection with existing routes under said ordinance, this company will undertake to operate all such railways, under the terms, provisions and obligations of the ordinance of Dec. 4, 1894, to the end that the general low-fare system, with universal transfers.

regulated by the Common Council as contemplated by the ordinance of Dec. 4, 1894, shall be made complete.

"(2) In case the city of Detroit desires to be released from the obligation to continue the policy established by the contract of Dec. 4, 1894, so that it may acquire and operate and determine, in accordance with law, to acquire and operate such a system for itself, the railway company is ready to sell and transfer to the city of Detroit all its railway property in the city of Detroit for a fair price, to be agreed upon, or failing agreement, to be determined in any fair and reasonable way. This offer will remain open until further notice, it being the wish of the railway company to continue it for a sufficient period to enable the city authorities, with due diligence, to take the necessary steps for valid and effective action thereon, provided, of course, that pending such action the status quo will be preserved, except that to meet immediately the urgent necessity for the relief of traffic congestion in certain portions of the city, the company is willing to proceed at once, under such terms and conditions as are named in the resolution adopted by the Common Council on April 4, 1911, providing for the extension of the street railway system on Hamilton Boulevard, Grandy Avenue and on other streets, to construct, maintain and operate, as a part of its Grand River line, the so-called Junction Avenue line between Grand River Avenue and West Jefferson Avenue, and to construct, maintain and operate in connection with its Mack and Myrtle lines the tracks necessary to connect such lines so as to form a through crosstown route, and also to construct, maintain and operate, under the terms and conditions of the ordinance of Dec. 4, 1894, an extension of its Kercheval Avenue line to St. Jean Avenue, then southerly to Jefferson Avenue.

"Or, if the Common Council so desires, the company will construct, maintain and operate the so-called Junction Avenue line as an extension of the line on Warren Avenue, under the terms and conditions of the ordinance of Dec. 4, 1894, instead of as a part of its Grand River system."

After the announcement by Mayor Marx of the postponement of the meeting of the Council to Aug. 1 Mr. Brooks was reported to have said that he knew of no conferences between the attorneys for the company and the Mayor and that no amended proposal had been made by the company.

James Couzens, secretary and treasurer of the Ford Motor Car Company and president of the Detroit Chamber of Commerce, has been selected by the Mayor as the third member of the street railway commission. The other two members are John F. Dodge and W. D. Mahon.

Philadelphia Transit Report

A. Merritt Taylor, transit commissioner of Philadelphia, Pa., issued on July 31 an exhaustive report setting forth the problem of better transit facilities for Philadelphia and of definite recommendations and plans for the solution of that problem. New subways and elevated railways are proposed to be built as follows: A two-track subway delivery loop is to start at Broad and Arch, go eastwardly along Arch to Eighth, thence to Walnut, to Fifteenth, to Filbert Street, and back to the point of origin. A four-track subway will begin at Broad and Arch and run northward to Pike, there forking into two elevated lines, one of which will go via McFerran Street to Luzerne, and finally along the Northeast Boulevard to Rising Sun Avenue. The other line will go north on Sixteenth Street to Belfield Avenue and ultimately to Olney Avenue via Ogontz Avenue. Then there will also be a two-track subway extending southward from Broad and Walnut to Bigler Street, where an extension will be laid in a depressed open right-of-way to League Island.

The part of the plan having to do with the elevated railways contemplates an elevated railway from the city's center to Frankford, and another to Darby, to be built by the Philadelphia Rapid Transit Company.

In addition to the enabling legislation for the financing of the new lines, a joint resolution proposing an amendment to the constitution has been adopted by the Legislature, will be offered a second time at the next session, and—if passed on affirmatively—will then go before the qualified electors of the State at the following general election. This amendment enables the city to borrow to the

extent of 3 per cent in excess of 7 per cent on the assessed valuation of taxable property, for the purpose of improving transit facilities.

The total cost of construction and equipment for the Broad Street lines is estimated at \$42,075,000, of which \$34,682,000 is to be expended by the city and \$7,393,000 by the lessee. For the Frankford line the lessee would bear the entire expense, reckoned at \$8,912,000, and for the Darby line the lessee would spend \$6,591,000. The estimated gross expenditure, therefore, is \$57,578,000.

It is proposed to review the report at length in a later issue of the ELECTRIC RAILWAY JOURNAL.

Pennsylvania Public Service Company Law

On July 26, 1913, the last day on which he could act, Governor Tener of Pennsylvania affixed his signature to the public service company law as it came from the joint conference committee of the General Assembly thirty days before. The new law is a combination of the state administration measure as drafted by Attorney-General Bell, who will be general counsel for the new commission, and the Republican legislative committee's bill as drafted by Dean William Draper Lewis, of the Law School of the University of Pennsylvania. The law becomes operative on Jan. 1, 1914, but the commission has authority to organize and select its employees on or before Oct. 1, 1913. Inasmuch as the old State Railroad Commission is herewith legislated out of existence as of July 1, 1913, it is expected that Governor Tener will make the new public service commission appointments promptly, in order that the commission may have time to organize fully, hear any pending cases transferred to it by the State Railroad Commission and dispose of any of its unfinished business before the new work begins. The Governor has intimated that the new commissioners will be chosen on the basis of their business and financial qualifications rather than their political affiliations. It is expected that he will appoint Messrs. Ewing, Brecht and Pennypacker of the State Railroad Commission as members of the new body.

The new Public Service Commission is to consist of seven members who are to be appointed by the Governor by and with the consent of the Senate. Each commissioner at the time of his appointment shall be a resident of Pennsylvania and a qualified voter there for a period of at least one year next preceding his appointment, and he must also be not less than thirty years of age. No person may be appointed to the commission or hold any position under it who occupies any official relation to any public service company doing business in the State or who holds any other appointive or elective office in the State or any municipality. Each of the commissioners is to receive an annual salary of \$10,000, except the chairman, to whom \$500 additional is given. The commission has a secretary and a general counsel, who receive \$5,000 and \$7,500 respectively. The commission is also authorized to appoint an "investigator of accidents" at \$5,000 a year, whose duty it shall be to take charge of the investigation of any accidents in connection with the operation of the property, facilities or service of any public service company and make a complete report thereon to the commission. Any commissioner or any of the counsel to the commission may be removed by the Governor with the consent of the Senate for inefficiency, neglect of duty or misconduct in office, after giving the defendant a copy of the charges against him and an opportunity of reply on not less than ten days' notice.

The commission, or four, a quorum thereof, must hold stated meetings at least twice a month during the year at the principal office in Harrisburg, other meetings being held at any time and any place within the State.

Article II of the law takes up in detail the question of the duties and liabilities of public service companies, and among the duties mentioned are these: to furnish and maintain service and facilities that are just, reasonably adequate and practically sufficient for the accommodation and safety of its patrons, employees and the public; to furnish such service at just and reasonable rates; to make all repairs, alterations and improvements reasonably necessary; to file with the commission and post and publish tariffs and schedules showing rates and distribution of facilities; to establish, file and publish reasonable and just joint rates;

to make no change in any tariff or schedule filed or published except after thirty days' similar notice to the commission and the public stating the proposed changes, whether increases or decreases, and the date of change; to change no rate or classification theretofore determined by the commission within three years without the approval of the commission after thirty days' prior notice to the public; to file with the commission verified copies of all legal papers and information dealing with their public service; to keep a system of accounts prescribed by the commission, with proper attention to operating and capital entries and a depreciation account (municipally owned utilities being included herewith under this requirement); to account to the commission when required to do so for the disposition of all sales or pledges of stock, bonds and other evidences of indebtedness; to follow out the orders of the commission as to exchange of transfers and through routing and to give immediate notice of any accidents in connection with operation.

The commission, through the enforced requirement of its "certificate of public convenience," is to have power over the original incorporation and any change therein of a domestic corporation, over the exercise of the powers of a foreign corporation within the State and over selling, assigning, consolidating, merging and all other forms of intercorporate relations.

Furthermore, for any municipal corporation to acquire construct or begin to operate any plant, equipment or other facilities for the rendering or furnishing to the public of any service of the kind or character already being rendered or furnished by any public service company within the municipality, the certificate of public convenience is required. No contract or agreement between any public service company and any municipal corporation shall be valid unless approved by the commission, provided that upon notice to the local authorities concerned any public service company may apply to the commission before the consent of the local authorities has been obtained for a declaration by the commission of the terms and conditions upon which it will grant its approval of such contract or agreement, if at all.

When application shall be made to the commission by a public service company for the determination of the amount to be paid for any franchise privileges or other rights, or the aggregate value of merged or consolidated properties, or the value of any reorganized property, or for a certificate that stocks and bonds have been properly issued, or for the determination of any property or labor for which any bonds or other evidences of indebtedness are issued, the commission is authorized to hold hearings and make a finding in writing stating the value ascertained and to issue under its seal its "certificate of valuation."

The issuing by the commission of any "certificate of valuation" shall be deemed only to certify to the fact that securities were issued for money, labor or property actually received and shall not be taken as requiring the commission in any subsequent valuation to ascertain the value of the property of a public utility to fix a valuation which shall be sufficient to yield a return to the holders of the said securities; neither shall the certificate of valuation be deemed to require the commission in subsequently determining the rates to be charged for the service of the company to provide a rate sufficient to yield a return on the said securities.

Every public service company shall file with the commission on or prior to the date of issuance of any stocks, bonds, etc., payable at periods of more than twelve months after the date thereof (unless upon application as aforesaid a "certificate of valuation" has been obtained), a certificate to be known as a "certificate of notification," which shall show the total amount of securities thereof, the number and amount thereof outstanding prior to the date of the certificate, the amount retired, the amount undisposed of and whether held in treasury as a free asset or pledged, the number and amount to be issued and the purpose and contemplated disposal, the number and amount remaining unissued, the par value, the preference or privilege of the securities, the dates of maturity, rates of interest and any conversion rights and the redemption price. These certificates are to be signed and issued by the treasurer, auditor or controller of the company and are to be deemed public records.

The provisions of the act relative to certificates of valuation and notification shall not apply to the issuance of evidences of indebtedness payable in twelve months or less or the pledges of securities to secure such evidences of indebtedness, but if such evidences of indebtedness are refunded by securities running for more than twelve months the above certificate provisions apply.

It is declared unlawful for any public utility to capitalize its franchises and privileges in excess of the amount paid to the Commonwealth or to issue any securities for any consolidated or merged company exceeding the aggregate values of the properties so consolidated or merged and any additional sum actually paid in cash and additional property actually contributed.

A public utility is prohibited from purchasing, acquiring or holding in absolute ownership as a pledge or as a collateral security, directly or indirectly, any controlling right, legal or equitable interest in the capital stock or securities of any other public service company in Pennsylvania without the consent and approval of the commission.

Upon complaint or upon its own motion the commission may examine the rates and service of public utilities and order more just, reasonable, safe and adequate service and rates. It shall also have power to fix maximum rates, set aside discriminatory and preferential rates and practices and order reparation for injuries. In any proposed increase in any rate the burden of proof to show that the increased rate is just and reasonable is on the public service company.

The commission is to have the power to prescribe whether railroad or railway tracks may cross other tracks or highways at grade or above or below grade and to regulate the manner in which such crossings shall be operated, maintained and protected by watchmen, block signals or other safety appliances. The cost of construction and condemnation shall be borne by the public service company or companies or municipal corporation concerned or by the Commonwealth, either severally or in such proper proportions as the commission after due notice and hearing may determine, unless these said proportions are mutually agreed upon and paid.

The commission shall have power upon application or its own motion to determine the fair value of a public utility property and shall exercise the power when deemed necessary or proper, taking into consideration original cost, improvements, earning capacity under existing rates, market value of securities, obsolescence, reproduction cost based on a fair average price of materials, property and labor, and the developmental and going value of the property.

The act clothes the Dauphin County Court with exclusive jurisdiction throughout the State to hear and determine all actions brought by any party to the proceedings within thirty days after the filing of an order. In general no appeal from an order of the commission shall operate as a supersedeas unless the Dauphin County Court shall upon notice to all parties of record and a hearing by an interlocutory order so decide. An appeal by a public utility against a change in rates, however, acts as a supersedeas in case a bond is filed with the Commonwealth to provide for the repayment to all aggrieved parties of any excess over the rates ordered by the commission.

Each day's continuance in the violation of any order of the commission is a distinct offense. Any officer of a public utility who affixes his name to any securities or any director who consents to their issuance in violation of an order by the commission is guilty of a misdemeanor punishable by costs and a fine not exceeding \$5,000 or five years' imprisonment, or both. The same penalties hold for any officer, director, agent or employee who assents to an application or disposition of securities or the proceeds thereof in violation of the purpose set forth in the "certificate of notification" or makes any false statements to procure such certificate or in any report to the commission. A refusal or neglect to obey any final order of the commission or court or any assistance in such refusal or neglect is punishable by a fine of not more than \$500 or by imprisonment for from one to twelve months, or both, and a second offense shall be punished by a fine of not more than \$1,000 or by a three to eighteen months' imprisonment or both. Action for the recovery of any penalties or forfeitures and all prosecutions must be brought within three years from the date when the liability therefor arose.

Rapid Transit Construction and Operating Contracts in New York

The Public Service Commission for the First District of New York has approved an agreement with the Interborough Rapid Transit Company for the reconstruction and temporary operation of the Steinway tunnel. This tunnel, which extends under the East River from Forty-second Street, Manhattan, to Long Island City, Queens, has been built for some years but has never been operated owing to the fact that it was not completed in the time specified by the franchise, and the owners never obtained the right to operate it. It was built by the New York & Long Island Railroad, the stock of which was owned by the Interborough Rapid Transit Company, and in the dual system contracts the latter company agreed to transfer the tunnel to the city of New York for a consideration of \$3,000,000, although the cost of it was about \$10,000,000, in consideration of its lease for operation in connection with the rest of the new subway system. These contracts provide for the extension of the tunnel in Manhattan to Times Square, where it will connect with the existing subway, and its extension on the Queens side to the Queensboro Bridge Plaza, where it will connect with the Astoria and Corona rapid transit lines. The contracts also provide for its temporary operation pending the completion of these extensions, and the agreement just approved authorizes the company to do such work as will fit it for temporary operation and to begin temporary operation as soon as possible. It is expected that the work will cost about \$500,000. The commission has also approved an agreement transferring the title to the tunnel from August Belmont and others, as surviving trustees of the New York & Long Island Railroad, to the Interborough Rapid Transit Company, which later will transfer the same to the city of New York. It is expected that the work needed to fit the tunnel for temporary operation will be completed in about four months after the transfer of title.

On July 22 the commission opened bids for the construction of another section of the Broadway subway in Manhattan, which is to be operated by the New York Municipal Railway Corporation. This section extends under Broadway from Union Square to Twenty-sixth Street, and will include the northern half of the express station at Union Square and a local station at Twenty-third Street, Madison Square. On July 24 the commission awarded the contract to the E. E. Smith Contracting Company, the lowest bidder, for \$2,056,702. The Broadway subway is now under contract from Trinity Place and Morris Street north to Twenty-sixth Street. Actual construction, however, extends only to a point between Houston and Bleecker Streets, the contracts for the two sections north of that point not having yet been approved by the Board of Estimate and Apportionment.

The Public Service Commission is advertising for bids, to be opened on Aug. 19 next, for the construction of Section No. 1 of the Astoria, Woodside and Corona rapid transit railroad in Queens. This road has two branches, one leading from the end of the Queensboro Bridge to Astoria and the other from the same point to Corona. Section No. 1 embraces the construction at the junction of the two lines at the bridge approach and also a connection with the proposed extension of the Steinway tunnel through Ely Avenue. Both lines will be elevated railroads and the greater part of each is already under construction.

Haste Urged with Toronto Valuations

The appraisers of the property of the Toronto (Ont.) Railway and the Toronto Electric Light Company will commence their work at once, and upon its completion the entire project of the purchase by the city, in all its details, will be laid before the Hydro-Electric Power Commission of Ontario for approval and sanction. Bion J. Arnold and J. W. Moyes, two of the appraisers, conferred with Mayor Hocken on July 22. Messrs. Arnold and Moyes will be joined shortly by R. A. Ross, Montreal, and John Mackay, who are to appraise the assets of the Toronto Electric Light Company. If the Hydro-Electric Power Commission agrees to the details of the deal between the city and the companies the agreement will be drawn by counsel for

both sides and the matter will be submitted to the people. It is hoped to be able to take the vote by the end of September.

The consideration of subsidiary contracts is an important feature of the deal. It is practically agreed that the city will have to take the present load of power from the Electrical Development Company as a minimum. This and the fact that the Toronto Electric Light Company's contract with the Electrical Development Company and the Toronto Railway's agreement run for thirty years and eight years respectively are details to be considered by the Hydro-Electric Power Commission. The difficulties in connection with these details, however, would be removed by the acquisition of the property of the Electrical Development Company by the Hydro-Electric Power Commission of Ontario. Twenty million dollars is the price fixed for this property. Mayor Hocken has pointed out that if the Hydro-Electric Power Commission took over the Electrical Development Company all private corporations would be removed from the electric field in Ontario. In a letter to Mr. Arnold Mayor Hocken urges upon him the necessity of making the valuation as quickly as possible.

Adam Beck, chairman of the Hydro-Electric Power Commission of Ontario, said on his return to Toronto after a holiday trip of several weeks in Europe:

"I do not think the purchase of the property of the Electrical Development Company is a matter for discussion by me until it comes properly before the commission. When the time comes to say something it will be said. That time is not yet."

Fenders on the Toronto Suburban Railway.—The city solicitor of Toronto, Ont., has been instructed to communicate with the Ontario Railway Board in regard to the fenders used by the Toronto Suburban Railway.

Streator Strike Settled.—The strike of the employees of the Public Service Company of Northern Illinois, which has been in progress since May 15, has been settled, but the terms under which the men return to work have not been made public. The company operates 10.5 miles of electric railway in Streator.

Pennsylvania Reported to Be Negotiating Power Contract.—Negotiations are said to be pending between the Pennsylvania Railroad and the Philadelphia Electric Company for the latter to supply power to operate the line of the Pennsylvania Railroad to Paoli, which branch, as previously announced, is to be electrified.

Ordinance Passed Calling for Special San Francisco Election.—The Board of Supervisors of San Francisco, Cal., has passed the ordinance calling an election on Aug. 26, at which the question of issuing bonds to the amount of \$3,500,000 for the purpose of constructing a system of municipal street railways will be voted on.

International Railway Buys Land for New Terminal.—The International Railway, Buffalo, N. Y., has purchased property adjacent to its carhouse in Lockport, N. Y., as a site for the proposed immense terminal for the Buffalo and Rochester cars when the pending reorganization and merger plan of the Buffalo & Lake Erie Traction Company is approved by the Public Service Commission.

Pacific Great Eastern Railway Proposes to Electrify Short Line.—The Pacific Great Eastern Railway, which is constructing a line from Fort George to North Vancouver, B. C., has agreed to electrify that portion of its route extending from Horseshoe Bay on Howe Sound through West Vancouver to North Vancouver, a distance of about 10 miles, provided the municipalities through which the company proposes to operate will grant the company a 60-ft. right-of-way free.

Toronto Deviation Case Before Privy Council.—The appeal against the decision of the Appellate Division of the High Court by the Toronto & York Radial Railway, Toronto, Ont., will be heard in Privy Council in London, Eng., in October. The decision of the court reversed the finding of the Railway Board, which permitted the company to divert its tracks at Farnham Avenue on Yonge Street and cross Woodlawn, Alcorn and Walker Avenues to the North Toronto terminal. The city argues that the crossings which are maintained at these points are dangerous.

Mayor Jost Completes Tentative Franchise.—Mayor Jost of Kansas City, Mo., has completed the tentative draft of a franchise for the Metropolitan Street Railway and will submit copies to Judge Andrew F. Evans, city counselor, to be reviewed by him. The Mayor is averse to disclosing the details of the grant until it is formally presented to the receivers for the company. He has indicated that when he and the receivers agree on a franchise, copies of it will be printed and public meetings will be held to discuss the measure before it goes to the Council.

Dr. Tolman Delegate to International Housing Congress.—Dr. W. H. Tolman sailed on the *Ryndam* on July 29 as a delegate from the United States State Department to the International Housing Congress which will meet at The Hague on Sept. 8. He is also the secretary of the American Section of the Congress, of which Arthur Williams is vice-president. Dr. Tolman will go direct to London in the interests of the International Exposition of Safety and Sanitation to be held in New York next December under the auspices of the American Museum of Safety.

Extensions in Cleveland.—There will be some difficulty in extending the new East Side cross-town line of the Cleveland Railway into Gordon Park for some time, because the street in one place has been filled with material by the Lake Shore Railroad, which is building an arch under its tracks for the passage of the street railway. It is possible that when the cars are put into operation they will turn on a Y for some time until the track can be completed. It is stated that about 3 miles of the Denison-Harvard cross-town line and the poles and wire for most of the distance are completed. This will furnish the only through line between the East and West sides of the city.

Boston Elevated Arbitration Hearings Postponed.—On account of the illness of James J. Storrow, chairman and third member of the board of arbitration which will investigate wages and working conditions on the Boston Elevated Railway, the hearings upon these matters have been postponed until Aug. 18. It is probable that about a week will be occupied in the presentation of the employees' side of the case and that a similar period will be utilized by the company in rebuttal evidence and arguments. At a meeting in Boston on July 24 representatives of the company and of the employees' union agreed to make the findings of the arbitration board retroactive to May 1, 1913. The hearings will be public.

Increase in Wages in Phoenix.—The Phoenix (Ariz.) Railway has made known its new scale of wages and has offered the old places and seniority to such of its old men as return to their positions. When the recent strike was declared there were six employees of the company who remained with the company. Since that time three more former employees have returned to the company and two more have signified their intention of so doing. The wage scale adopted on Aug. 1 follows: First year, 22 cents an hour; second year, 25 cents an hour; third year, 25 cents an hour; fourth year, 26 cents an hour; fifth year, 27 cents an hour. The wages demanded by the men who went on strike were as follows: 22½ cents an hour for the first year, 24½ cents an hour for the second year and 26½ cents an hour for the third year and thereafter.

A. E. R. A. Data Sheet on Insurance.—The committee on insurance of the American Electric Railway Association, of which H. J. Davies, Cleveland, is chairman, sent out Data Sheet No. 106 on July 22. The blank is in duplicate, one copy to be returned filled in to the association. The data asked for follow: 1. Amount of insurance carried in 1912. 2. Amount of premiums paid in 1912. 3. If you had a fire in the year 1912, please state: (a) its cause; (b) in what property; (c) amount of loss; (d) amount of insurance recovered. 4. If any of your carhouses or other buildings are equipped with automatic sprinklers, please state: (a) the number of buildings so equipped; (b) the total cost (approximately) of your sprinkler equipment. 5. Please send the association two copies of your insurance forms.

Proposed Electric Railways in Spain.—Proposals are requested until Aug. 27, 1913, for building an electric tramway, estimated cost \$45,775, in the suburbs of Vigo, Spain. If successful in bidding against La Compañía Anónima Tranvías Electricas de Vigo the concessionaire must pay

\$682 for the project with interest of 5 per cent from the date the project was filed. The concession and construction of an electric tramway from Reus to Tarragona, Province of Tarragona, Spain, has been awarded to Mariano de Cárcer, owner of the approved project. The rolling stock is to comprise at least four electric cars, ten trailers, five electric freight cars, twenty trailing freight cars and ten flat cars. The estimated cost of the line is \$187,688. The contractor may be addressed in care of La Jefatura de Obras Públicas de la Provincia de Tarragona, Tarragona, Spain.

Trade Press Convention.—H. M. Swetland, president of the Federation of Trade Press Associations in the United States, announces that the program has been completed for the eighth annual convention at the Hotel Astor, New York, N. Y., Sept. 18 to 20. Acceptances are in hand from over sixty speakers of national reputation in the manufacturing, selling, advertising and publishing fields. There will be fifty ten-minute addresses at the editorial, circulation, advertising and publishing symposiums on vital questions affecting all those who have dealings with the business press of America. Other features of the convention will be an exhibit of successful class, technical and trade journal advertising campaigns, a big business meeting, at which will be told the inside stories of the big trade paper publishing successes, and an inspirational mass meeting with addresses by representative business and professional men on subjects of live interest to editors, publishers and advertisers. All the regular sessions of the convention will be open but tickets must be secured for the inspirational mass meeting. These may be obtained from any member of the federation or from W. H. Ukers, chairman of the committee on arrangements, 79 Wall Street, New York.

Stamford-New Haven Electrification Nearing Completion.—In a statement issued recently in regard to its work of electrification the New York, New Haven & Hartford Railroad said: "While it cannot be definitely stated when trains will be operated by electricity all the way from New York City to New Haven, the time is not far distant. The link that will complete the electrification to New Haven is the one between that city and Stamford. Part of this is completed, and only a small portion remains to receive the finishing touches. The section from Stamford to New Haven is about 40 miles in length. This entire section will obtain its power from the present power house at Cos Cob. This means that the Cos Cob power house will generate electricity to supply another section which is nearly twice as long as the one from Woodlawn to Stamford. It is estimated by the engineers of the company that the Cos Cob power house will be capable of taking care of all normal traffic on the line as far as New Haven, but on days when special traffic is handled, steam will have to be resorted to on some trains on the Stamford to New Haven link. When the electrification is continued to New London or Hartford another power house will be erected."

Council Committee Recommends Purchase of Seattle, Renton & Southern Railway.—Five of the nine members of the City Council committee of Seattle, Wash., voted on July 22 to recommend that an offer of \$1,250,000 be made for the entire property of the Seattle, Renton & Southern Railway on the terms proposed by Scott Calhoun, one of the receivers of the company. This includes a double-track line extending from Third Avenue and Stewart Street on the north to the city of Renton on the south, a distance of 9 miles, about one-half lying within the city limits and the other half in King County. Mr. Calhoun's offer of the property to the city was made several weeks ago, when a price of \$1,200,000 was fixed for the line within the city limits, or \$1,400,000 for the entire system. It provides for the construction of extensions with funds realized from the sale of the remaining \$150,000 of the \$800,000 municipal street railway bonds authorized two years ago. Of this issue \$300,000 of the bonds have been sold to the State and \$350,000 would be required to make the cash payment for the Seattle, Renton & Southern property, leaving \$150,000 for extensions. The offer authorized by the committee provides that the entire property be turned over to the city immediately upon the making of the first payment of \$350,000 and the issuance of utility bonds for the remainder.

Financial and Corporate

ANNUAL REPORTS

American Power & Light Company

Stock and Money Markets

July 30, 1913.

Early trading was active in New York to-day. The market opened high but prices began gradually to decline. Following the announcement of the reduction of the Illinois Central dividend recessions of about 1½ points were recorded in the leaders. There was a fair increase in the aggregate volume of trading. Interborough-Metropolitan and Third Avenue each had declined 7/8 point at the close. Rates in the money market to-day were: Call, 2¼ @2½ per cent; sixty days, 3½@4 per cent; ninety days, 4@4½ per cent; four months, 4½@5¼ per cent; five months, 5½@6 per cent; six months, 5¾@6 per cent.

Outside of trading in arbitrage issues and two or three local issues, little activity was noticeable in the Philadelphia market. No bonds were sold after the first hour. Philadelphia Rapid Transit declined ¼ point.

The Boston Exchange opened strong but later weakened in sympathy with New York, New Haven being weak.

Trading in Chicago was mostly in industrials, although small sales were made of Chicago Railways, series 1 and 2.

Few sales were recorded in the Baltimore market. United Railways figuring in small stock and bond sales.

Quotations of traction and manufacturing securities as compared with last week follow:

	July 23	July 30
American Brake Shoe & Foundry (common).....	87¼	89
American Brake Shoe & Foundry (preferred).....	129	129
American Cities Company (common).....	37	34
American Cities Company (preferred).....	66¾	65
American Light & Traction Company (common).....	340	345
American Light & Traction Company (preferred).....	104	104
American Railways Company.....	38½	38
Aurora, Elgin & Chicago Railroad (common).....	39½	*39½
Aurora, Elgin & Chicago Railroad (preferred).....	82½	*82½
Boston Elevated Railway.....	89½	94½
Boston Suburban Electric Companies (common).....	7½	7½
Boston Suburban Electric Companies (preferred).....	55	55
Boston & Worcester Electric Companies (common).....	*8	*8
Boston & Worcester Electric Companies (preferred).....	42	42
Brooklyn Rapid Transit Company.....	87½	87¾
Capital Traction Company, Washington.....	117½	115
Chicago City Railway.....	*165	*165
Chicago Elevated Railways (common).....	25½	*25½
Chicago Elevated Railways (preferred).....	*75	*75
Chicago Railways, ptcptg., ctf. 1.....	*95	92
Chicago Railways, ptcptg., ctf. 2.....	25½	27½
Chicago Railways, ptcptg., ctf. 3.....	*7½	*7½
Chicago Railways, ptcptg., ctf. 4.....	*2½	*2½
Cincinnati Street Railway.....	a110	a110
Cleveland Railway.....	102¾	*102¾
Cleveland, Southwestern & Columbus Ry. (common).....	6	*6
Cleveland, Southwestern & Columbus Ry. (preferred).....	29	*29
Columbus Railway & Light Company.....	18	18
Columbus Railway (common).....	69¾	a69½
Columbus Railway (preferred).....	88	88
Denver & Northwestern Railway.....	107	*107
Detroit United Railway.....	70	a70
General Electric Company.....	139¾	140
Georgia Railway & Electric Company (common).....	114¾	*114¾
Georgia Railway & Electric Company (preferred).....	82½	*82½
Interborough Metropolitan Company (common).....	15½	15½
Interborough Metropolitan Company (preferred).....	58½	58½
International Traction Company (common).....	*30	*30
International Traction Company (preferred).....	*95	*95
Kansas City Railway & Light Company (common).....	18	15
Kansas City Railway & Light Company (preferred).....	36	*36
Lake Shore Electric Railway (common).....	9	*9
Lake Shore Electric Railway (1st preferred).....	90	*90
Lake Shore Electric Railway (2d preferred).....	25	*25
Manhattan Railway.....	126	126
Massachusetts Electric Companies (common).....	14½	*14½
Massachusetts Electric Companies (preferred).....	71	72
Milwaukee Electric Railway & Light Co. (preferred).....	*90	*90
Norfolk Railway & Light Company.....	*25	25
North American Company.....	69½	60
Northern Ohio Light & Traction Company (common).....	a75	a70
Northern Ohio Light & Traction Company (preferred).....	a100	a100
Philadelphia Company, Pittsburgh (common).....	39	43½
Philadelphia Company, Pittsburgh (preferred).....	39	43
Philadelphia Rapid Transit Company.....	22½	22½
Portland Railway, Light & Power Company.....	58	*58
Public Service Corporation.....	108	108
Third Avenue Railway, New York.....	35½	34¾
Toledo Railways & Light Company.....	a12	a12
Twin City Rapid Transit Co., Minneapolis (common).....	104	*104
Union Traction Company of Indiana (common).....	4½	*4½
Union Traction Company of Indiana (1st preferred).....	80	*80
Union Traction Company of Indiana (2d preferred).....	30	*30
United Rys. & Electric Company (Baltimore).....	26¾	26¾
United Rys. Inv. Company (common).....	18½	22½
United Rys. Inv. Company (preferred).....	35	42
Virginia Railway & Power Company (common).....	51	51
Virginia Railway & Power Company (preferred).....	89	89
Washington Ry. & Electric Company (common).....	89¼	91
Washington Ry. & Electric Company (preferred).....	87½	87¾
West End Street Railway, Boston (common).....	71	71½
West End Street Railway, Boston (preferred).....	86	86
Westinghouse Elec. & Mfg. Company.....	61½	63
Westinghouse Elec. & Mfg. Company (1st preferred).....	108	109

*Last sale. a Asked.

According to the annual report of the American Power & Light Company, New York, N. Y., which controls various electric light and power, gas, railway and water works properties in the West, the combined gross earnings of the controlled companies for the twelve months ended April 30, 1913, were \$5,418,194, of which \$211,179, or 4 per cent, was derived from the company's electric railway holdings. The combined net income of the controlled companies for the period was \$560,052, and the balance accruing to the American Power & Light Company, after transferring \$158,397 to a reserve for depreciation and setting aside \$147,780 for common stock not held by the American Power & Light Company, was \$253,875. The grand balance of combined surplus accruing to the American Power & Light Company as of April 30, 1913, was \$1,080,523.

The Pacific Power & Light Company, one of the controlled companies, which operates 30.5 miles of street and interurban railways in Washington and Oregon, reports gross earnings for the period of \$1,239,382, which, after a deduction of \$641,777 for operating expenses, \$299,951 for fixed charges and \$238,750 for preferred dividend, gives a balance of \$58,904, a decrease of \$46,521 from the previous year, when only \$165,000 was declared in dividends.

The gross earnings of the Southwestern Power & Light Company, operating 5 miles of electric railways in Texas, were \$1,999,065, from which, after a deduction of \$1,128,334 for operating expenses, \$870,731 was left as net earnings, an increase of \$112,600 over the preceding year.

The report says of two other controlled companies: "The Kansas Gas & Electric Company supplies, under an advantageous contract with the Wichita Railway & Light Company, continuing until 1930, all the power used for the operation of the entire street railway business in Wichita, comprising 33.6 miles of track. It also has a contract with the Arkansas Valley Interurban Railway, expiring in 1930, to supply all the power necessary to operate all the interurban company's railway lines, already constructed for 38 miles and planned for 90 miles.

"The Texas Power & Light Company has a contract for fifty years with the Southern Traction Company to supply all the power for its interurban lines, which are now being built between Waco and Dallas and between Dallas and Corsicana, and for its traction system in Waco. The interurban system now planned will cover about 135 miles of interurban lines, in addition to the present Waco city system of approximately 16 miles of track and the Corsicana system of approximately 4 miles of track. Power is also supplied by the Texas Power & Light Company to the street railway in Cleburne, with 7 miles of track, the street railway in Paris, with 5½ miles of track, and the street railway in Bonham, with 2½ miles of track."

Middle West Utilities Company

The statement of income and expenditures of the Middle West Utilities Company, Chicago, Ill., for the fiscal year ended April 30, 1913, is as follows:

Interest received and accrued on bonds and debentures.....	\$113,305	
Dividends received and accrued on stocks of subsidiary companies.....	\$224,375	
Dividends received and accrued on stocks of outside companies.....	40,590	264,965
Sundry interest on notes receivable, brokerage, etc.....		86,968
Total interest and dividends.....	\$465,239	
Profits from cash sale of properties or securities.....	287,598	
Profits from sale of properties to subsidiary companies where proceeds in securities or notes have not all been sold, arrived at on basis of values fixed by the board of directors..		159,131
Total income.....	\$911,969	
Administration expense.....	93,957	
Interest.....	60,655	
Depreciation and losses on investments.....	19,743	
Miscellaneous charges, including taxes, depreciation.....	38,591	
Total expenditure.....	\$212,948	
Balance profit for period.....	\$699,021	

Out of this profit for the year dividends have been paid and accrued on the preferred stock in the amount of \$353,417, leaving a surplus of \$345,603.

Samuel Insull, president of the company, says in part:

"At the time of its organization the company acquired certain public service properties in Indiana, Illinois, Kentucky, Missouri and the New England States. Since then it has from time to time materially increased its holdings in these States with the exception of Missouri, and in addition has acquired properties in Michigan and Oklahoma.

"The various properties, with the exception of those in Michigan, have been consolidated into one or more subsidiary operating companies in each State. The junior securities of these companies are either in their entirety or in a large majority owned by this company. Its policy is, so far as possible, to keep the junior securities of its subsidiary companies in its own treasury.

"The subsidiary companies are in the aggregate serving 274 separate communities, having a combined population of between 800,000 and 900,000, with one or more classes of public utility service, namely, electric light and power, gas, heat, ice, transportation and water.

"The combined earnings of these subsidiary companies from the date at which they were respectively acquired to April 30, 1913, the end of this company's fiscal year, were as follows:

Gross earnings.....	\$3,680,676	
Operating expenses.....	2,442,584	
<hr/>		
Net earnings from operation.....		\$1,238,092
Fixed charges to outside holders.....	\$639,862	
Interest on debentures and dividends paid on stock held by outside holders, including their proportion of the surplus.....	161,794	
<hr/>		801,657
Earnings accrued on securities of subsidiary companies held by this company.....		\$436,435

"Of these earnings, \$111,180 has come into the treasury of this company as interest on bonds and debentures, and \$224,375 as dividends on stock, leaving a balance of \$100,879, being the Middle West Utilities Company's proportion of the surplus carried in the aggregate surplus accounts of the subsidiary companies on their own books.

"Since the close of the fiscal year, the directors have authorized the issue of \$3,500,000 of three-year 6 per cent collateral gold notes, secured by the deposit with a trustee of \$4,667,000 par value of mortgage bonds of subsidiary companies; \$2,000,000 of these notes will be sold immediately. The proceeds of this issue will be used to complete payments on properties heretofore contracted for, to provide funds for the development of subsidiary companies and to fund the floating debt of the company."

Minority Bondholders Object to Buffalo & Lake Erie Traction Company Reorganization and Consolidation

Minority bondholders of the Buffalo & Lake Erie Traction Company are protesting against the proposed plan of reorganization of that line and the consolidation with the Buffalo, Lockport & Rochester Electric Railway, which was described in detail in the ELECTRIC RAILWAY JOURNAL of July 26, 1913.

When the application of the majority bondholders came up for a hearing before Public Service Commissioner Decker in Buffalo, N. Y., on July 31, the representative of the minority bondholders applied for an adjournment for at least a month. He claimed that no notice of the details of reorganization had been received by the minority bondholders and it was not until this hearing that they became familiar with the terms of the proposed merger. The application for more time was rejected by the Public Service Commission, however, and continuance of the hearing set for Aug. 1.

The plan provides for paying the bondholders dollar for dollar, but it is pointed out by the bondholders that the preferred stock held by them will be wiped out and that they stand to lose close to a half a million dollars. When the bonds were originally placed on the market, they could not be purchased unless some preferred stock was secured, being sold in blocks of \$10,000 worth of bonds and \$2,000 worth of preferred stock. Under the proposed plan all preferred stock will be taken over by Bertron, Griscom & Jenks, New York bankers.

Among those who appeared at the hearing were C. K. Beekman, counsel for the petitioning bondholders; Gerald B. Fluhrer, for certain creditors of the Buffalo & Lake Erie Traction Company; A. B. Ottaway, Joseph J. Lunghino,

John F. Burke, M. A. Federspiel, D. D. Eames and others for certain bondholders and stockholders.

Edward G. Connette, president of the International Railway, Buffalo, N. Y., was sworn and he testified as to the physical valuation of the Buffalo & Lake Erie Traction Company and the Buffalo, Lockport & Rochester Electric Railway. D. C. Jackson of Boston, a consulting engineer and a professor in the Massachusetts Institute of Technology, testified as to the value of the contract with the Canadian power company which will furnish 46,000 hp at the international boundary.

The greater part of the testimony during the morning and afternoon sessions was taken up with explaining how certain estimates as regards tracks, right-of-way, maintenance cost and other similar details were arrived at. Nothing of unusual importance was brought out, but it is plain that the members of the commission will make an exhaustive investigation into the details before the application is granted.

All of the experts testified that the Buffalo & Lake Erie Traction line is in excellent condition and that certain parts of the line are paying well on the investment. Many bondholders were of the opinion that this line should not absorb a line which they claimed was in a less prosperous condition.

Sanderson & Porter Secure Common Stock Control of New Haven's Springfield and Worcester Electric Railways

It was reported in Boston on July 31 that the electric railways in Springfield and Worcester, in western New England, owned by the New England Investment & Security Company, on which the New York, New Haven & Hartford Railroad has guaranteed interest on the bonds and dividends of the preferred stock, had been sold to Sanderson & Porter, New York City, N. Y. In this connection the following statement was made at the office of the New York, New Haven & Hartford Railroad in New York:

"C. S. Mellen, president of the New York, New Haven & Hartford Railroad, understands it is true that a large amount of the stock of the New England Investment & Security Company, which controls the electric railways in Springfield and Worcester, has been acquired by Sanderson & Porter, who are constructors, operators and promoters of electric railways in various sections of the country. Just how much stock they have acquired Mr. Mellen is not advised, but he is told that it is enough to put control into their hands. Mr. Mellen is not advised regarding the policy of Sanderson & Porter and has no information of their intentions."

Sanderson & Porter subsequently confirmed the news to the effect that they have purchased a controlling interest in the common stock of the New England Investment & Security Company.

The New England Investment & Security Company, the controlling interest in the common stock of which has been purchased by Sanderson & Porter, was organized in June, 1906, to acquire the electric railways in Massachusetts controlled at that time by the New York, New Haven & Hartford Railroad. It controls the following companies through ownership of all or a majority of their stocks: Worcester Railways & Investment Company, Worcester Consolidated Street Railway, Milford, Attleboro & Woonsocket Street Railway, Springfield Street Railway and Springfield Railway Company. In April, 1909, the company acquired by assignment all rights of the Rhode Island Company's interest in the capital stock of the Attleboro Branch Railroad and the Interstate Consolidated Street Railway and of the Consolidated Railway's interest in the capital stock of the Worcester & Webster Street Railway and the Webster & Dudley Street Railway. The capital stock of the company consists of \$10,000,000 of common stock, of which \$100,000 is outstanding, and \$10,000,000 of 4 per cent cumulative preferred stock, of which \$4,000,000 is outstanding. The system in Springfield which the company controls consists of 166 miles of track, while the system in Worcester consists of more than 266 miles of track. The officers of the New England Investment & Security Company are J. T. Harmer, president; Bentley W. Warren,

vice-president; F. P. McIntyre, secretary, and L. Candee, treasurer.

It will be recalled that the Interstate Commerce Commission, in its recent report on the operations of the New York, New Haven & Hartford Railroad, recommended that the New Haven company divest itself of its electric railway interests, and it was subsequently reported in Boston that a syndicate to include members of the firms of Kidder, Peabody & Company, Stone & Webster and others was being organized to take over the electric railway properties of the company in Rhode Island. Charles A. Stone of Stone & Webster, however, was quoted to the effect that there was nothing to the report concerning the purchase of the Rhode Island properties. Others who were said to be interested in the purchasing syndicate were also quoted to the effect that they had no knowledge of the reported deal.

Report of Geary Street Municipal Railway for Six Months

The municipal authorities of San Francisco, Cal., have published the following statement of receipts and disbursements for operating expenses of the Geary Street Municipal Railway from Dec. 27, 1912, to June 30, 1913, inclusive. The interest due June 1 was \$29,647, leaving a surplus over the expenditures and interest of \$31,909.

	Receipts	Disbursements
December (4 days).....	\$3,300	\$1,076
January	17,465	9,835
February	18,619	10,461
March	22,023	12,806
April	22,034	11,648
May	23,525	13,338
June 1 to 24 inclusive (Kearny to Thirty-third Avenue).....	18,840	14,199
June 25 to 30 inclusive (Ferry to Ocean).....	9,114	
Total	\$134,923	\$73,365

American Water Works & Guarantee Company, Pittsburgh, Pa.—J. B. Van Wagener, treasurer of the American Water Works & Guarantee Company, made a statement, in part as follows, on July 29: "Arrangements have been made for the payment of all interest maturing on Aug. 1 on securities of subsidiary companies of the American Water Works & Guarantee Company. The full and complete audit of the books of the American Water Works & Guarantee Company and its subsidiary companies ordered by the receivers has not yet been completed."

Arkansas Valley Interurban Railway, Wichita, Kan.—George J. Theis, Jr., Wichita, was elected president of the Arkansas Valley Interurban Railway at the annual meeting of stockholders on July 22 to succeed W. O. Van Arsdale. Stockholders of the company elected the following directors: George J. Theis, Jr., J. L. Johnson, O. A. Boyle, W. O. Van Arsdale, J. H. Elem, R. L. Holmes, C. G. Cohn, C. H. Smyth and L. M. Dakin. J. H. Elem was elected a director to fill the vacancy caused by the resignation of F. D. Treckle, who has sold his interests to Mr. Theis. The directors then organized as follows: George J. Theis Jr., president; O. A. Boyle, vice-president and general manager; A. Stone, secretary. The stockholders of the Interurban Construction Company, which is affiliated with the railway, elected the following directors: O. A. Boyle, George J. Theis, Jr., R. B. Campbell, J. H. Elem, R. L. Holmes, E. T. Battin and C. H. Smyth. E. T. Battin was elected in place of F. D. Treckle. The directors of the construction company elected officers as follows: O. A. Boyle, president; J. H. Elem, vice-president; R. B. Campbell, treasurer; E. T. Battin, secretary.

Billings (Mont.) Traction Company.—A special meeting of the stockholders of the Billings Traction Company will be held on Aug. 9, 1913, for the purpose of passing upon an increase of the capital stock to an amount not exceeding \$500,000 and for the further purpose of amending the articles of incorporation so that preferred stock may be created and issuing preferred stock for at least a portion of the increase of stock, and for the purpose of creating a bonded indebtedness in an amount not to exceed \$500,000, to pay the present indebtedness of the company and to secure money with which to make necessary extensions.

Central Park, North & East River Railroad, New York, N. Y.—Judge Lacombe, in the United States District Court, has directed Alexander Gilchrist, clerk of the United States District Court, to pay over to George W. Linch, receiver of the Central Park, North & East River Railroad, \$75,492,

being the balance of the proceeds of a sale of that property held on Nov. 14, 1912. The order is made so that the receiver may deposit the money with the Guaranty Trust Company, to be distributed under supervision of the Supreme Court of the State of New York, as provided in a judgment granted Dec. 12, 1912, in suit brought against the company by George P. Titus, Jr. Clerk Gilchrist is directed to hold \$20,000 subject to the orders of the court. The Belt Line Railway Corporation is the successor to the Central Park, North & East River Railroad.

Denver & Northwestern Railway, Denver, Col.—The exact basis of the exchange of the \$6,000,000 of first and collateral thirty-year 5 per cent bonds of the Denver & Northwestern Railway for bonds of the Denver City Tramway, referred to in the ELECTRIC RAILWAY JOURNAL of June 14, 1913, page 1088, is as follows: Each holder of a \$1,000 Denver & Northwestern bond will receive a \$1,000 first and refund sinking fund mortgage twenty-five-year 5 per cent gold bond of the Denver City Tramway, dated Nov. 1, 1908, due Nov. 1, 1933, and in addition thereto \$50 in non-interest-bearing scrip exchangeable in amounts of \$500 for the above-mentioned bonds of 1908.

Dry Dock, East Broadway & Battery Railway, New York, N. Y.—Judge Lacombe in the United States District Court on July 19, 1913, authorized F. W. Whitridge, receiver, to issue \$179,000 of receiver's certificates to be known as series "B" and to bear 4 per cent interest. This sum was expended on the improvement of track and equipment and was chiefly furnished by the Third Avenue Railway.

East St. Louis & Suburban Railway, East St. Louis, Ill.—On May 22, 1913, the East St. Louis & Suburban Railway filed in Belleville a certificate of increase of capital stock from \$3,850,000 to \$4,100,000.

Gary & Interurban Railway, Gary, Ind.—Suit has been filed in the Porter (Ind.) Circuit Court by F. B. Raff, South Bend, Ind., owner of 5040 shares of stock of the Gary & Interurban Railway, to set aside the merger of the company with the Gary & Connecting Railways, the Valparaiso & Northern Railway, the Goshen, South Bend & Chicago Railroad and the Chicago-New York Electric Air Line Railroad. In case the petition for the dissolution of the merger is granted, the court is asked to appoint a receiver for the original Gary & Interurban Railway.

Highland Park & Lake Burien Railroad, Seattle, Wash.—The city of Seattle has decided to accept the offer of the Lake Burien & Highland Park Railroad and will take over the portion of the road within the city limits.

Interborough Rapid Transit Company, New York, N. Y.—Application has been made to the New York Stock Exchange for listing \$37,027,000 of Interborough Rapid Transit Company first and refunding mortgage 5 per cent gold bonds. In all, some \$160,000,000 of these bonds will be issued and listed from time to time. Of the total \$37,027,000 to be listed at present about \$5,000,000 have been exchanged for the old first mortgage bonds of the company on the basis of 105 for the old bonds and 98 for the new. Of the balance, half will be used for retiring note obligations and half for new construction. The total authorized issue of first and refunding 5 per cent bonds is \$300,000,000, dated Jan. 1, 1913.

Lake Shore Electric Railway, Cleveland, Ohio.—The Lake Shore Electric Railway has been authorized by the Public Service Commission of Ohio to pledge as collateral for a loan, which shall be in the largest amount negotiable but not less than 60 per cent of the par value thereof, its 5 per cent general mortgage bonds of the total principal sum of \$179,000, the issue of which bonds has heretofore been consented to and authorized by the commission.

Manila Electric Railroad & Lighting Corporation, Manila, P. I.—The eighth annual report of the Manila Electric Railroad & Lighting Corporation states that the gross earnings for the year ended Dec. 31, 1912, were \$1,597,674, being an increase over the previous year of \$144,986, or 9.98 per cent; operating expenses and taxes increased \$821,648, or 12.87 per cent, while the net earnings from operation were \$873,187, an increase of \$62,337, or 7.68 per cent. Interest charges during the year were \$277,500, and sinking fund requirements \$28,250, leaving surplus earnings for the year of \$567,437. The annual appropriation for the replacement and renewal fund of \$80,000 was maintained, and,

deducting this from the year's surplus earnings, there remained an available surplus for the year of \$487,437, being an increase of \$61,612 over the previous year. From this amount there were paid four dividends of 1½ per cent each, and an additional dividend of 1 per cent, making 7 per cent for the year, aggregating \$350,000, leaving \$137,437 to be transferred to the surplus account, making the total accumulated surplus with reserves at Dec. 31, 1912, \$1,362,140, an increase over 1911 of \$282,061.

Metropolitan Street Railway, New York, N. Y.—Upon application of Douglas Robinson, as one of the receivers of the Metropolitan Street Railway, Judge Lacombe, of the United States District Court, has signed an order directing all persons having claims against the New York City Railway or the Metropolitan Street Railway prior to Sept. 24, 1907, when the roads went into receivership, to file their claims and assert title to such claims before Special Master William L. Turner. The order of the court directs that only those may prove claims who have been found to be entitled to payment out of the proceeds as apportioned on mandate of the court filed Jan. 13, 1913.

Oakland & Antioch Railway, Oakland, Cal.—A subscription list to the recently authorized \$1,000,000 bond issue is being circulated among the stockholders of the Oakland, Antioch & Eastern Railway. The bonds are offered to stockholders at \$85 and interest. In case the management succeeds in raising sufficient funds in this manner to complete the line to Sacramento, the proposed assessment will not be levied. Otherwise two assessments will be levied, one of \$10 per share against the 35,000 shares of stock outstanding of the Oakland & Antioch Railroad, and the other of \$5 against the 100,000 shares of stock of the Oakland, Antioch & Eastern Railway.

Quebec Railway, Light & Power Company, Quebec, Que.—Holders of two bond issues of Quebec Railway, Light & Power Company, consisting of \$2,500,000 of Quebec-Saguenay division first mortgage thirty-year 5 per cent bonds and \$2,100,000 new mortgage 5 per cent bonds, have been called to meet on Sept. 2 to consider the action to be taken in view of the registration on the property of the Quebec & Saguenay Railway of an alleged lien or privilege for the payment of contractors in connection with construction work done on the line of the Quebec & Saguenay Railway and to instruct the trustee of the bonds accordingly. The *Financial Post* of Toronto on July 19 quoted Rudolphe Forget, president of the Quebec Railway, Light, Heat & Power Company, as follows: "The railway has been doing finely and for the fiscal year ended June 30 the gross earnings were 18 to 20 per cent larger than last year." In regard to the many rumors of the sale of subsidiary lines, Mr. Forget is said to have remarked: "There is absolutely nothing in all these reorganization rumors. The company is in a good position, as will be seen from the statement when issued. The bond interest, about which there has been so much said, has been paid and the company is going right ahead. The matter of the French government tax should not give anyone any very great concern. Less than 20 per cent of the shares are held abroad and the control is over here."

Railways Company General, New York, N. Y.—The capital stock of the Railways Company General has been reduced from \$500,000 to \$400,000 (as authorized by the stockholders July 15, 1913) by retiring shares owned by the corporation and the purchase at not above par of shares for retirement. Various reductions have, since September, 1905, brought the capital stock down from \$1,500,000 to the present amount.

San Francisco-Oakland Terminal Railways, Oakland, Cal.—The committee appointed to manage the affairs of the San Francisco-Oakland Terminal Railways is trying to negotiate a \$4,000,000 loan with which to pay off the floating debt, take up the note of \$2,500,000 held by Halsey & Company as security for a loan which is past due, and provide funds to complete improvements in the Key Route basin and elsewhere. July 15 was set as the date on which the committee should have been ready to comply with the demands of the bond houses in New York from which the money is to come for rehabilitating the concern. Not all of the requirements were met at that time, although the members of the committee expressed confidence that they

soon would be met. The bond houses extended the time to Aug. 1. The committee had hoped that no legal action might be taken by the minority stockholders until the underwriting negotiations had been concluded, as it was feared that such action, if brought at this time, might so complicate matters as to interfere with the work of the financial committee. A petition was filed, however, in the United States District Court on July 24 by four of the creditors of F. M. ("Borax") Smith, asking that he be declared an involuntary bankrupt. As Mr. Smith is the head of the United Properties Company, the holding corporation for the San Francisco-Oakland Terminal Railways, this action may embarrass the financial committee in its negotiations.

Springfield (Ohio) Railway.—The Springfield Railway has been authorized by the Public Service Commission of Ohio to issue its first mortgage 5 per cent bonds of the total principal sum of \$1,244,000 and its 6 per cent preferred capital stock of the par value of \$356,000, the bonds to be sold for not less than 80 and the stock for not less than par. The proceeds of these issues are to be used to pay and retire the petitioner's present outstanding issue of 6 per cent first mortgage bonds of the principal sum of \$500,000, to pay and discharge floating indebtedness represented by demand notes which on May 31, 1913, amounted to \$837,390 and to pay in full for the ten cars which the company has contracted for at the estimated price of \$51,687.

Dividends Declared

Connecticut Railway & Lighting Company, Bridgeport, Conn., quarterly, 1 per cent, preferred; quarterly, 1 per cent, common.

Detroit (Mich.) United Railway, quarterly, 1½ per cent.

Harrisburg (Pa.) Traction Company, 3 per cent.

Toledo, Bowling Green & Southern Traction Company, Findlay, Ohio, quarterly, 1½ per cent, preferred.

Union Street Railway, New Bedford, Mass., quarterly, 2 per cent.

ELECTRIC RAILWAY MONTHLY EARNINGS

BATON ROUGE (LA.) ELECTRIC COMPANY

Period	May	'13	Gross Earnings	Operating Expenses	Net Earnings	Fixed Charges	Net Surplus
1 mo.	May	'13	\$12,231	*\$7,550	\$4,681	\$2,076	\$2,606
1 "	"	'12	13,902	*7,769	6,133	1,730	4,203
12 "	"	'13	150,336	*92,257	58,079	22,162	35,916
12 "	"	'12	132,260	*79,969	52,292	20,753	31,539

BROCKTON & PLYMOUTH STREET RAILWAY, PLYMOUTH, MASS.

1 mo.	May	'13	\$10,279	*\$8,537	\$1,742	\$1,106	\$636
1 "	"	'12	9,759	*7,688	2,071	1,055	1,017
12 "	"	'13	121,767	*94,184	27,584	12,806	14,778
12 "	"	'12	119,264	*89,837	29,427	12,641	16,786

CAPE BRETON ELECTRIC COMPANY, SYDNEY, N. S.

1 mo.	May	'13	\$29,989	*\$19,115	\$10,874	\$6,082	\$4,792
1 "	"	'12	28,578	*16,192	12,386	5,703	6,683
12 "	"	'13	372,592	*199,621	172,970	69,932	103,038
12 "	"	'12	344,416	*190,191	154,225	67,872	86,353

DALLAS (TEX.) ELECTRIC COMPANY

1 mo.	May	'13	\$184,737	*\$108,829	\$75,908	\$24,615	\$51,293
1 "	"	'12	150,065	*90,141	59,924	24,666	35,258
12 "	"	'13	1,982,032	*1,161,467	820,565	295,736	524,829
12 "	"	'12	1,688,788	*1,110,004	578,784	256,242	322,542

EL PASO (TEX.) ELECTRIC COMPANY

1 mo.	May	'13	\$71,023	*\$39,330	\$31,693	\$4,184	\$27,509
1 "	"	'12	59,838	*34,377	25,461	6,597	18,864
12 "	"	'13	855,963	*460,169	395,794	53,831	341,963
12 "	"	'12	722,464	*408,814	313,650	82,337	231,313

GALVESTON HOUSTON ELECTRIC COMPANY, HOUSTON, TEX.

1 mo.	May	'13	\$202,470	*\$111,516	\$90,954	\$34,755	\$56,199
1 "	"	'12	168,519	*97,821	70,698	33,815	36,883
12 "	"	'13	2,180,999	*1,256,545	924,453	409,692	514,762
12 "	"	'12	1,697,801	*1,048,707	649,093	303,273	345,820

HOUGHTON (MICH.) COUNTY TRACTION COMPANY

1 mo.	May	'13	\$24,644	*\$15,108	\$9,536	\$5,630	\$3,907
1 "	"	'12	24,088	*14,381	9,708	6,612	3,096
12 "	"	'13	312,742	*178,067	134,676	67,058	66,618
12 "	"	'12	300,669	*179,269	121,399	63,990	57,409

JACKSONVILLE (FLA.) TRACTION COMPANY

1 mo.	May	'13	\$59,833	*\$37,665	\$22,169	\$11,185	\$10,984
1 "	"	'12	52,515	*32,256	20,559	9,830	10,429
12 "	"	'13	586,487	*396,545	189,942	126,203	63,639
12 "	"	'12	572,965	*356,348	216,617	112,086	104,531

*Includes taxes.

Traffic and Transportation

When Is Car Diversion Justified?

In the pending case of McCormick vs. United Railways & Electric Company, Baltimore, the Public Service Commission of Maryland is asked to decide the question whether a street railway is justified in diverting cars from their regular routes on account of pleasure travel even when such diversion is clearly advantageous to most of its patrons. To accommodate excursion traffic to River View Park, the cars of the Madison Avenue line are diverted during May to September from their regular route so that South Broadway between Bank and Thomas Streets is deprived of its regular car service. This diversion is made, weather conditions permitting, on week days, except Saturdays, from about 8 p.m. to 11 p.m., and on Sundays from 2 p.m. to 11.30 p.m. To provide service on South Broadway during these hours and also to accommodate passengers for the excursion steamer *Dreamland*, the cars of the Pennsylvania Avenue line are rerouted over eleven blocks, crossing steam railroad tracks four times on the diverted run. It is complained that these changes delay the regular patrons of the Pennsylvania Avenue line, that persons are often in doubt what car to take owing to uncertainties growing out of the statement "weather conditions permitting," that far more regular riders are inconvenienced on the Pennsylvania Avenue line than on the Madison Avenue line, and that, in any event, this diversion of cars is caused by an unjustifiable effort to accommodate excursion traffic during a part of the day during the excursion season.

The evidence presented at the hearing disclosed the fact that when the company first diverted its cars in June, 1910, it did so at the urgent request of a committee representing merchants, taxpayers and citizens of South Broadway and also at the request of the *Dreamland's* owners, who desired to have the cars routed directly to their pier at the foot of Broadway. Prior to June, 1910, the traffic on South Broadway during the excursion hours of the Madison Avenue line was cared for by a shuttle service. This service the South Broadway citizens considered "humiliating," and upon their petition it was abandoned in favor of the diversion of the Pennsylvania Avenue line. Although represented at the hearing, the company refrained from taking active part in the proceedings, leaving the contest to the representatives of the regular Pennsylvania Avenue riders and the South Broadway interests.

In reviewing the testimony, the commission admits that the excursion traffic is a legitimate one, and that it also affords the only means by which large numbers of persons of small means can reach the pleasure resorts to escape the heat and discomfort of crowded streets and dwellings. It contends, however, that this is a special service which should be given without interruption to regular service except such as is incidental to the operation of more cars to take care of the excursion traffic. In this instance it holds that it is not fair to inconvenience the patrons of the Pennsylvania Avenue line for the benefit of the South Broadway residents who were dissatisfied with tripper service. The commission therefore decided on July 15 that the diversion of the Pennsylvania Avenue line should be discontinued, but this change will not be made until the commission has also decided after another hearing what service should be provided for the South Broadway section. It has suggested tentatively that part of the Madison Avenue cars should serve this section, while the remaining regular cars and properly placarded trippers would go to River View Park.

Terms of Agreement Between Rhode Island Company and Its Employees

The agreement entered into between the officers of the Rhode Island Company, Providence, R. I., and the representatives of the employees, to which brief mention was made in the *ELECTRIC RAILWAY JOURNAL* of July 26, 1913, page 160, was signed on July 21, 1913, and will continue in effect until June 1, 1915, and from year to year thereafter unless changed after thirty days' notice by either party to the other. The agreement provides for recognition of the local union by the company, that the company treat

with the duly selected committees of the union on all questions which may arise and that no discrimination shall be shown against employees who are members of the union. On their part the representatives of the union agree not to discriminate against employees of the company who are not members of their association and to a maximum of ten hours and a minimum of eight hours for a day's work, to be completed within a period of twelve hours, all trippers be included in regular runs as far as possible. The following scale of wages for motormen and conductors, effective from July 1, 1913, is provided: First six months, 23 cents an hour; second six months, 24½ cents an hour; second year, 26 cents an hour; third year, 27 cents an hour; thereafter, 28½ cents an hour. The wages paid previous to July 1, 1913, follow: First year, 22 cents an hour; second year, 23 cents an hour; third year, 23½ cents an hour; fourth year, 24¾ cents an hour; fifth year, 26¼ cents an hour; sixth year, 27½ cents an hour; thereafter, 27½ cents an hour.

The agreement also provides that all work on snow plows shall be paid for at the rate of 10 cents an hour extra. The wages of all men employed in the shops and mechanical departments of the various carhouses are increased 1½ cents an hour in addition to a similar raise which was granted on March 29, 1913. The wages of first-class linemen have been increased from \$3.15 to \$3.25 a day; second-class linemen from \$2.70 to \$2.85 a day; ground men from \$2 to \$2.10 a day. Permanent trackmen will receive \$2 a day the first year and \$2.25 a day after the first year for a working day of ten hours. Time and one-half will be paid these men for overtime, Sundays, holidays and night work, except when men are assigned to night work for a period of more than two days. Trolley boys are to receive \$1 to \$1.25 a day. Brakemen in the freight department will receive 20 cents an hour, an advance from 18 cents an hour. Freight handlers will receive 17 cents an hour the first year, 18 cents an hour the second year and 19 cents an hour the third year and thereafter, an increase from 16½ cents an hour. Firemen will receive \$14 a week for eight hours per day, seven days a week. Firemen were previously paid \$12.60 a week for a day of ten hours, seven days a week, but each fireman was allowed one day off in every seven. Firemen helpers will receive \$12.60 a week for the first year and \$13 a week after the first year for eight hours a day, seven days a week. Power house laborers will receive \$12.60 a week the first year and \$13 a week after the first year. It is estimated that the increase granted to the employees will amount to approximately \$200,000 a year.

Provisional Agreement in Regard to Traffic Changes in Montreal

As the result of a conference between a special committee of the Montreal Council, the Comptrollers and E. A. Roberts, president of the Montreal (Que.) Tramways, a provisional agreement has been reached in regard to measures to be taken to improve the service and reduce congestion during the rush hours. The basis of the agreement is the report submitted by G. Janin, the city's chief engineer. This report has been ratified by the Council. The most important recommendation is for fifteen new routings and modifications of routings. Among the minor recommendations are the elimination of stops, increasing the switchmen, the improvement of signs on the cars, the cessation of smoking on the rear end of the cars, and the control of traffic at central points. Mr. Roberts has suggested that later a more general plan should be worked out to meet conditions due to the increase in the population.

The company has obtained judgment by the Court of Review, dismissing a conciliation board appointed by the Minister of Labor to consider a dispute between the company and certain ex-employees. Several conductors and motormen whose services were dispensed with secured the co-operation of a union with the result that a conciliation board was appointed. Legal proceedings followed, and Justice Greenshields, in the Court of Review, holds that none of the employees who were dismissed was a member of the union which secured the appointment of the board of conciliation.

Increase in Wages in Minneapolis

The Twin City Rapid Transit Company, Minneapolis, Minn., put in effect on July 1 an increase in the wages of trainmen amounting to about 10 per cent over the scale of wages adopted on July 1, 1912. The wage scale provides for an increase in the wage rate for each period of service as before, but sets the wage maximum at six years instead of eight. The following is the new scale of wages as issued by Horace Lowry, vice-president: First six months in service, 23 cents an hour; second six months, 24 cents an hour; second year, 26 cents an hour; third year, 27 cents an hour; fourth year, 28 cents an hour; fifth year, 29 cents an hour; sixth year and thereafter, 30 cents an hour. All extra men will be guaranteed an extra wage of \$2 per day. The old wage scale made July 1, 1912, was as follows: First six months in service, 22 cents an hour; second six months, 23 cents; second year, 24 cents; third year, 25 cents; fourth and fifth years, 26 cents; sixth and seventh years, 27 cents; eighth year and thereafter, 28 cents.

The company made the following additional statement at the time the raise in wages was announced:

"Under the new wage schedule new conductors and motormen will be guaranteed a minimum wage of \$2 per day, and this will mean that with regular runs they will have a chance to make \$70 per month from the outset, with regular increase each year. With the prospect of securing work in the Twin Cities that will be always permanent, no matter what the season may be, the new wage scale is bound to attract a large number of young men from the country and the smaller towns of the State. There is no work that offers better opportunities for advancement than the electric railway business, and it is notable that the best men street railways are securing for employment in their train service are country boys and young men who have been brought up in the rural districts. These young men develop rapidly and are the ones usually marked for advancement."

The Menace of the Automobile

A collision recently between a car on the interurban line of the Peninsula Railway, San José, Cal., and an automobile resulted in the almost immediate death of the occupants of the machine. The evidence went to show that the accident was entirely unavoidable on the part of the company, and the coroner's jury exonerated the motorman from all blame. Following the accident W. G. Boynton contributed an article in part as follows to the *San José Mercury* in which he brought out forcibly the serious menace which the automobile is to safe operation of electric interurban railways:

"In the various meetings held by the safety committee of the Peninsula Railway during the last twelve months, the carelessness of the drivers of automobiles has been brought forward so repeatedly by the operating crews of the cars that a unanimous resolution was passed to the following effect: That in cases where the automobile is leading on the road, and thus is ahead of the car, the auto driver must be considered as an irresponsible person as to his actions, for by experience it has been found impossible to tell what he would do, or what course he would follow. Bulletins to this effect have therefore been issued to all men operating the cars.

"A more serious, although indirect, condemnation of auto drivers cannot be imagined. This makes plain the astounding fact that all motormen of electric railway cars deliberately take on themselves the entire responsibility of avoiding a collision in such cases. It seems that owing to unguarded confidence, or hardy ignorance, the bulk of auto drivers when leading have no idea of following the rules of the road. Hence the law that they must be held to be irresponsible!

"Men buy machines without knowing the principles of driving or guiding, and are guileless of all efficiency beyond putting on the pace and trusting to that to carry them over. Nothing further remains to be said when you compare the efficiency of the carefully selected railway men with the chance capacity of the average amateur auto driver."

The Booster.—With the August number, which is just coming from the press, *The Booster*, the bright little publication issued by the Louisville & Northern Railway & Lighting Company and the Louisville & Southern Indiana Traction Company, New Albany, Ind., has completed two years and a half of service, and thirty numbers are now in the file. The paper has been a companion to the Boosters' Club of the traction and associated lines in New Albany, chronicling the work of the club and encouraging those who take part in the club work. It has also been the means of giving publicity to the commercial interests of New Albany and southern Indiana, in line with the policy of the companies to assist in development work wherever such a course is possible.

Transfer Proposal Submitted in Trenton.—The Trenton & Mercer County Traction Corporation and the New Jersey & Pennsylvania Traction Company have filed with the City Commission of Trenton, N. J., an agreement between them fixing two points at which they are willing to grant transfers on the basis of a 5-cent fare. In the communication accompanying the agreement and signed by both Rankin Johnson and Sydney L. Wright, presidents of the respective companies, it is suggested that if the city desires a "more general system of transfers," the companies are willing to enter into negotiations for such, "with the understanding that the fare shall be fixed at such an amount between 5 and 8 cents as will afford a proper and reasonable payment to each company for the transportation furnished by each, and not at the sum of 5 cents, which is below cost, and, therefore, to the detriment of the interests of the much greater proportion of passengers who will begin and complete their journeys on one line."

Fare Decision by Massachusetts Commission.—The decree of the Public Service Commission of Massachusetts concerning the fares over the Worcester Consolidated Street Railway between Blackston and Uxbridge has been published. The company has been charging 10 cents for its service in Blackstone, a 5-cent fare between the state line at Woonsocket and the village of Millville, a distance of 3.145 miles, and another 5-cent fare between said village and the boundary lines between the towns of Blackstone and Uxbridge, a distance slightly in excess of half a mile. The petitioners desired the elimination of the fare between the last-named points. The commission issued its decree under date of July 22, 1913. The company is ordered to eliminate the fare in question. The commission also directs the company to provide a special form of ticket, which may be purchased by the workmen and which will be accepted by the employees of the company between the hours of 5.30 and 7.30 a.m. and between 5 p.m. and 7 p.m. The order became effective on July 31.

Hours of Labor Discussed at Springfield, Mass.—There have been differences of opinion in the interpretation of the Massachusetts "nine-hours-in-eleven" act of 1913, which recently became operative. J. T. Harmer, president of the Springfield Street Railway, has issued a statement pointing out that by a three-year agreement between the union and the company dating from 1912 a maximum of nine and a half hours' work performed in twelve consecutive hours constitutes a day's work for all regular motormen and conductors, and emphasizing the fact that the new law expressly provides that existing agreements as to hours of labor shall not be affected by it. Mr. Harmer states that the company is willing to submit to arbitration on the question and calls the attention of the public to the hardships imposed by the "nine-hours-in-eleven" act in relation to handling the fluctuating service of a modern street railway. As a result of a conference on July 28 at Springfield, Mass., between officials of the Worcester Consolidated Street Railway, the Springfield Street Railway and representatives of the employees' organization, it was agreed to submit to arbitration the question at issue between the companies and the men in accordance with the 1912 agreement. The principal point to be discussed will be the application of the "nine-hours-in-eleven" act, which was passed by the last Legislature, to the existing working schedules. A number of minor questions bearing upon wages will also be considered. The arbitration board will be selected by the choice of one member each by the companies and their employees, the third member being chosen by these two.

Personal Mention

Mr. N. E. Davis has succeeded Mr. D. J. Rinville as resident engineer of the Hudson Valley Railway, Glens Falls, N. Y.

Mr. Louis Larson has been appointed roadmaster of the Chicago, Aurora & DeKalb Railroad to succeed Mr. Floyd Clark.

Mr. R. Swartz has been appointed superintendent of the Hot Springs (Ark.) Street Railway to succeed Mr. J. H. Butterfield.

Mr. Daniel Bentz has succeeded Mr. George E. Seiple as park manager of the Northampton Traction Company, Easton, Pa.

Mr. J. R. Mueller has succeeded Mr. C. B. Duffy as purchasing agent of the Wellston & Jackson Belt Railway, Wellston, Ohio.

Mr. A. L. Brownell has been appointed superintendent of the Marquette County Gas & Electric Company, Ishpeming, Mich.

Mr. M. H. Epps has been appointed auditor of the Galesburg & Kewanee Electric Railway, Kewanee, Ill., to succeed Mr. Holland.

Mr. Frank Cramer has succeeded Mr. J. McCloskey as roadmaster of the Youngstown & Southern Railway, Youngstown, Ohio.

Mr. E. T. McMurray has been elected secretary of the Petaluma & Santa Rosa Railway, Petaluma, Cal., to succeed Mr. Thomas Archer.

Mr. J. E. Webb has been appointed superintendent of the Parsons Railway & Light Company, Parsons, Kan., to succeed Mr. Theodore Dienst.

Mr. W. H. Dempster has been appointed manager of trolley trips of the Pacific Electric Railway, Los Angeles, Cal., to succeed Mr. C. M. Pierce.

Mr. E. D. Blynn, Jr., has been elected vice-president of the Lincoln Railway & Light Company, Lincoln, Ill., to succeed Mr. E. D. Blynn, Sr.

Mr. C. R. Laub has been appointed superintendent of the Public Service Company of Northern Illinois, Streator, Ill., to succeed Mr. R. B. Basham.

Mr. Murat Blizard has been appointed general manager of the St. Joseph Valley Traction Company, Elkhart, Ind., to succeed Mr. Charles H. Cox.

Mr. A. J. Bemis has been appointed general manager of the Vicksburg Light & Traction Company, Vicksburg, Miss., to succeed Mr. W. B. Moorman. Mr. Bemis was formerly chief engineer of the company.

Mr. F. W. Frueauff, New York, has been elected vice-president of the Meridian Light & Railway Company, Meridian, Miss., of which Mr. H. L. Doherty is president. Mr. Frueauff succeeds Mr. Russell Palmer.

Mr. J. T. Nichol has been appointed commercial agent of the Waterloo, Cedar Falls & Northern Railway, Waterloo, Ia., in which capacity he succeeds Mr. Marshall Craig, who had the title of traveling freight and passenger agent.

Mr. Edward Slant, superintendent of the Forest Avenue carhouse of the International Railway, Buffalo, N. Y., has had his jurisdiction extended to the Hertle Avenue carhouse of the company, vice Mr. George Baker, transferred.

Mr. George J. Theis, Jr., Wichita, has been elected president of the Arkansas Valley Interurban Railway, Wichita, Kan., to succeed Mr. W. O. Van Arsdale, who has been president since the railway was built in 1910. Mr. Van Arsdale continues as a director of the company.

Mr. Edward M. Graham has been appointed assistant to the president of the Bangor Railway & Electric Company, Bangor, Maine. Mr. Graham was formerly assistant to the general manager of the Cumberland County Power & Light Company and the Lewiston, Augusta & Waterville Street Railway.

Mr. H. S. Rykert has been appointed superintendent of employment and instruction of the International Railway, Buffalo, N. Y. Mr. Rykert was previously engaged in similar work for the Houston (Tex.) Electric Company. He has also been connected with the transportation depart-

ments of the Brooklyn Rapid Transit Company, the Aurora, Elgin & Chicago Railroad, Wheaton, Ill., and the Rockford & Interurban Railway, Rockford, Ill.

Mr. J. E. Adams has been appointed traffic manager of the Stockton Terminal & Eastern Railroad, Stockton, Cal. Mr. Adams served as a clerk in the accounting department of the Southern Pacific Company for two years and in the operating department and station service of the San Francisco & San José Valley Railway for two years. He also served in the station service and as a dispatcher for six years with the Sierra Railway of California.

Mr. James Dalrymple, general manager of the Glasgow Corporation Tramways, has been authorized to visit the most important cities in America to study recent American electric railway practice. Mr. Dalrymple last visited America in 1905, primarily to explain to Mayor Dunne of Chicago the work that had been carried out in Glasgow. On that occasion he visited Chicago, Minneapolis, St. Paul, Cleveland, Buffalo, Washington, Philadelphia, Montreal, Boston and New York. His impressions on that trip were referred to at length in the *ELECTRIC RAILWAY JOURNAL* of Aug. 5, 1905, page 222.

Mr. G. A. Webb, superintendent of the railway department of the Tampa (Fla.) Electric Company, has completed twenty-one years of service with that company and its predecessors. A delegation of the employees waited upon Mr. Webb recently and presented him with a diamond ring. Mr. Webb entered the service of the Consumers' Traction Company as a motorman and later became master mechanic of the company. When the property was taken over by Stone & Webster, Mr. Webb was made master of transportation and subsequently received the title of superintendent of the railway department.

Mr. R. B. Hull has been appointed acting manager of the Conestoga Traction Company, Lancaster, Pa., to succeed the late C. Edgar Titzel. Mr. Hull entered the service of the Edison Electric Company, Lancaster, as an electrician on Jan. 7, 1900. On March 1, 1903, he was appointed foreman of the meter department of the company and on Oct. 1, 1910, he was appointed superintendent of the overhead department of the Edison Electric Company and the Conestoga Traction Company. On July 1, 1912, he was appointed general superintendent of the Conestoga Traction Company, Edison Electric Company, Lancaster Gas Light & Fuel Company and Columbia Gas Company, Lancaster.

Mr. Frank E. Cole, superintendent of the lines of the Louisville & Northern Railway & Lighting Company and the Louisville & Southern Indiana Traction Company, with headquarters at New Albany, Ind., has resigned. His resignation is to become effective in ninety days. Mr. Cole has been in his present position for nine years, going to New Albany from Chicago, where he was for ten years with Mr. Samuel Insull in the management of the latter's electrical interests. For the time being at least direct reports from the trainmasters, master mechanics and other officials in New Albany are to be made to Indianapolis, the offices of the Middle West Utilities Company, which controls the properties in New Albany and vicinity, being in that city.

Mr. George J. Baker has recently been appointed general superintendent of transportation of the Buffalo & Lake Erie Traction Company with offices at Fredonia, N. Y. Mr. Baker entered the service of the Buffalo & Lake Erie Traction Company in 1902 as a conductor on its city lines in Buffalo. In 1906 he was promoted to be inspector of the city and interurban lines in and out of Buffalo. In 1910 he was appointed superintendent of the interurban division with offices at Fredonia. The office of general superintendent of transportation to which Mr. Baker has recently been appointed is a new one with the company and was created when Mr. J. S. Pevear, vice-president and general manager of the company, was appointed to the International Railway, Buffalo, and Mr. A. R. Myers was appointed general manager of the Buffalo & Lake Erie Traction Company.

Mr. Howard Elliott, who has been president of the Northern Pacific Railway, was elected president of the New York, New Haven & Hartford Railroad on July 25 to succeed Mr. Charles S. Mellen, resigned. As soon as the

necessary changes in the by-laws of the company can be made Mr. Elliott will be elected chairman of the board of directors of the company and separate presidents will be elected for the New York, New Haven & Hartford Railroad and each of its subsidiaries. Mr. Elliott was born in New York City. He was educated in New England and left the Cambridge High School to enter the Lawrence Scientific School in 1878, when he was eighteen years old. In 1881 he was graduated with the degree of civil engineer. During the summer of 1880 he was a level rodman in the employ of the Chicago, Burlington & Quincy Railroad, and in 1881 he regularly entered its employ as a clerk. He remained in the service of the road or its subsidiaries until 1903, as clerk, cashier, assistant auditor, auditor, general freight and passenger agent, general manager and finally vice-president. He was subsequently elected president of the Northern Pacific Railway.

Mr. G. J. Collins has been appointed claim agent of the Birmingham Railway, Light & Power Company, Birmingham, Ala., to succeed Mr. C. A. Avant, who has been transferred to the law department. Mr. Collins' connection with street railway work dates back to 1892, when he entered the employ of the Paterson (N. J.) Street Railway as a stable boy. When the road was equipped with electricity Mr. Collins served for a number of years as a conductor. About thirteen years ago he was placed in the claim department of the company as investigator by the late John P. Feeney, who at that time was superintendent of claims of the company. A year later Mr. Collins was appointed claim agent of the Passaic County division and remained in this position for more than four years. When Mr. H. V. Drown, now general claim agent of the Public Service Railway, Newark, N. J., took charge Mr. Collins was transferred to the Essex division and carried the title of adjuster up to the time of his appointment as claim agent of the Birmingham Railway, Light & Power Company. He has thus been almost constantly employed by the Public Service Railway and its predecessors in New Jersey.

Mr. Samuel Barnes has been appointed general superintendent of the Jersey Central Traction Company, Keyport, to succeed Mr. A. H. Mann, resigned. Mr. Barnes was educated at one of the high schools in London, England, and at the high school at Berlin Heights, Ohio. He finished his technical training in Liverpool, England, in 1886. He entered the public utility field with the electric light and city water plant at Grayling, Mich., and continued with that plant until 1889, when he was appointed electrical engineer and superintendent of the West Bay City (Mich.) Electric Railway. From 1891 to 1894 Mr. Barnes was with the Consolidated Street Railway, Grand Rapids, Mich., as electrical engineer. He resigned from the Consolidated Street Railway to accept the position of consulting engineer with J. B. Stone & Company, London, England, and in 1897 became connected with the Lindell Railway, St. Louis, Mo., as electrical engineer. After the World's Fair at St. Louis Mr. Barnes accepted the position of general manager of the Cape Girardeau-Jackson Interurban Railway, Cape Girardeau, Mo. He resigned from the Cape Girardeau-Jackson Interurban Railway to become general superintendent of the Jersey Central Traction Company and the Middlesex & Monmouth Electric Light, Heat & Power Company, Keyport, which system includes the railway properties in Perth Amboy, between Perth Amboy and Keyport, in Lockport, Matawan, South Amboy, Atlantic Highlands, Red Bank and the Highlands and the electric light and power system in Keyport and vicinity.

OBITUARY

Allan W. Paige, Bridgeport, Conn., for some time general counsel of the Connecticut Railway & Lighting Company prior to the purchase of the property of the company by the Connecticut Company, died recently at Chicago in his fifty-ninth year.

Duncan Miller, superintendent of the Hamilton (Ont.) Street Railway, which is controlled by the Dominion Power & Transmission Company, Ltd., was killed in an automobile accident on July 23 on the Guelph Road, 2 miles beyond Hamilton. Mr. Miller was appointed superintendent of the Hamilton Street Railway about ten years ago. He is survived by a widow and two children.

Construction News

Construction News Notes are classified under each heading alphabetically by States.

An asterisk (*) indicates a project not previously reported.

RECENT INCORPORATIONS

***Fairfax (Cal.) Incline Railway.**—Incorporated to construct an inclined railway from a point in Fairfax Manor up the hillside for 1500 ft. The line will be on an approximate grade of 30 per cent. The directors are George D. Gray and E. J. Holt, Alameda; P. N. Gray, Marin County; George C. Lake and L. M. Welch, San Francisco.

***Van Horn Valley Railway, Van Horn, Tex.**—Incorporated in Texas with a capital stock of \$100,000 to build a 95-mile steam or electric railway from Lobo to a point in New Mexico. Incorporators: R. H. Owen, F. J. Cumming, A. J. Owen and J. E. Hayes.

FRANCHISES

San Anselmo, Cal.—S. J. Norton, representing the San Rafael & San Anselmo Valley Railway, has received a franchise to construct a line in San Anselmo. The proposed line will connect Fairfax, Rafael and San Anselmo. [E. R. J., Dec. 21, '12.]

Waukegan, Ill.—The Chicago & Milwaukee Electric Railway, Milwaukee, has received a thirty-year franchise in Waukegan. A special election will be held on Aug. 12, when the voters will accept or reject the ordinance.

Topeka, Kan.—The Topeka Railway has received a franchise for the extension of the West Eighth Street line from the western boundary of Topeka to Gage Park.

Louisville, Ky.—The city of Louisville is considering a plan to create an ordinance providing for the operation of a line on Brook Street. The Louisville Railway, which is expected to purchase the franchise, has stated its willingness to build to Hill Street, but does not desire to extend as far as Shipp Street.

***Melita, Man.**—R. E. Denny, Brandon, has received a franchise to build a street railway and install water works at Melita.

Newark, N. J.—The Public Service Railway has received the first of the twenty-seven franchises which it applied for in connection with its proposed terminal plan.

Syracuse, N. Y.—The Board of Estimate has approved of the sale of the franchise to the New York State Railways for the extension of its South Crouse Avenue line to the entrance of the university stadium.

***Black Mountain, N. C.**—It is stated that the Black Mountain Telephone Company will apply to the Aldermen for a street railway franchise in Black Mountain. This proposed line will extend from Black Mountain station to Montreat and Ridgecrest.

Toronto, Ont.—At a special meeting of the Council on July 23 the Forest Hill Electric Railway franchise was accorded its first and second readings, and at the regular session, which will be held later, the by-law will be given its third and final reading. [E. R. J., July 5, '13.]

Portland, Ore.—The Portland Railway, Light & Power Company has asked the Council for a franchise for a cross-town line on the East Side in Portland. If the franchise is granted a double-track line will be built during the year.

Dallas, Tex.—The Southern Traction Company has applied for a franchise over Zang and Hutchins Boulevards for its Corsicana-Waco line.

El Paso, Tex.—The El Paso Electric Railway is seeking a franchise to build an extension out North Oregon Street to the Mesa.

Seattle, Wash.—The Puget Sound Light & Traction Company has withdrawn its application for a franchise in Avalon Way.

Madison, Wis.—The Chicago & Wisconsin Valley Street Railway has received a franchise to build a line through the city.

Milwaukee, Wis.—The Milwaukee-Western Electric Railway has received a franchise to enter the city over the Lisbon Avenue, Walnut and Third Street lines of The Mil-

waukee Electric Railway & Light Company to the Public Service Building.

TRACK AND ROADWAY

Montgomery (Ala.) Traction Company.—It is stated that this company plans at an early date to extend its line from the Cloverdale line to the Capital City Country Club.

Glendale & Eagle Rock Railway, Glendale, Cal.—This company will rebuild its line from Verduga Park to Glendale and will place orders for 8000 6-ft. x 8-in. x 8-in. red-wood ties and forty kegs of 9/16-in. x 5½-in. spikes. The company has just completed 5 miles of new track from Verduga Park through Montrose to La Crescenta and will place it in operation at once.

Pacific Electric Railway, Los Angeles, Cal.—The H. E. Dillon Construction Company has received from this company the contract for the construction of a bridge over Cucamonga Wash.

Oakland, Antioch & Eastern Railway, Oakland, Cal.—This company is building a branch to Pittsburg from its right-of-way, which will be 3 miles long and which will be completed this month.

Vincennes, West Baden & Louisville Traction Company, Vincennes, Ind.—A. M. Yelton announces that this line and the Vincennes & Southeastern Traction Company and the Vincennes, Washington & Eastern Traction Company will be operated as one system and will be known as the West Baden System. About 7 miles have been graded. It is expected to resume work on Sept. 1. The total length of the system will be 175 miles and it will connect Vincennes, Washington, Loogootee, Petersburg, Otwell, Ireland, Jasper, Huntingburg, Ferdinand, Troy, Tell City or Cannelton. Later it will be extended to West Baden and French Lick. Capital stock, \$3,500,000; bonds, \$3,500,000. Officers: T. H. Adams, president; A. M. Yelton, Box 33, Vincennes, secretary; John O. Davis, treasurer.

Interurban Railway, Des Moines, Ia.—A new right-of-way for the proposed extension of this company's line from Colfax to Newton is being surveyed. If a satisfactory route can be found between the two towns it is probable that the extension will be constructed. C. F. Hewitt, general manager of the company, has announced that the plan of using the old Newton & Northwestern line between Colfax and Newton has been abandoned.

Sioux City (Ia.) Service Company.—This company is relaying about 3½ miles of track in paved streets in Sioux City.

Independence, Neodesha & Topeka Traction Company, Independence, Kan.—This company has applied to the Public Utilities Commission for permission to issue stock to the amount of \$298,600 for the purpose of purchasing the right-of-way for the proposed line. The preliminary survey has not yet been made. [E. R. J., July 19, '13.]

Manhattan City & Interurban Railway, Manhattan, Kan.—During the next few weeks this company will award contracts to build 10 miles of new track in Manhattan.

***Taylorsville, Ky.**—Citizens of Taylorsville are securing the right-of-way for a line between that city and Jeffersontown, Ky. A branch of the Louisville & Interurban Railroad runs to Jeffersontown, and connection with Louisville would be afforded Taylorsville in the event of the construction of the proposed line. Those who are securing the right-of-way believe that they will be able to induce some company now in the field to build the line.

Trans-St. Mary's Traction Company, Saulte Ste. Marie, Mich.—This company will build 500 ft. of new track and 2100 ft. of brick paving.

***Luce Electric Company, Minneapolis, Minn.**—This company is making a survey for the north and south electric railway to extend from Jackson to Sleepy Eye, connecting with the line under construction from Minneapolis to Watertown, S. D.

Jefferson City (Mo.) Bridge & Transit Company.—It is stated that this company plans to extend its track 1 mile to the west end of the city. The extension to the east end will also be begun soon. Eventually the company intends to build an extension to the Moreau River.

Geneva & Waterloo Railway, Waterloo, N. Y.—It is reported that this company has taken steps to extend its line to Auburn.

***Chickasha, Okla.**—A. W. Thornley, Chickasha, is said to be interested in the promotion of a proposed 50-mile line and would like to obtain as much information as possible regarding construction material, equipment, etc. It is presumed that the company will want to use some gasoline motor cars. A charter will be obtained as soon as a preliminary survey is made, which will be within the next thirty days. Correspondence should be addressed to the Interurban Company, 419 First National Bank Building, Chickasha, Okla.

Norman Interurban Railway, Oklahoma City, Okla.—During the next five weeks this company will award contracts to build 9½ miles of track between Moore and Norman. Orders have been placed for the rails and copper wire except for the bond wires. This line will connect Oklahoma City, Moore, Norman, El Reno, Edmond and Britton. George W. Knox, president. [E. R. J., May 3, '13.]

Imperial Traction Company, Ottawa, Ont.—The Parliament has extended the time within which the already authorized lines may be built and has given the company power to build additional lines from Smithville to Bridgeburg and from Hamilton to Toronto. [E. R. J., July 26, '13.]

Schuylkill Railway, Girardville, Pa.—This company plans to begin work soon on its line from Shenandoah to Frackville.

Montreal (Que.) Tramways.—This company has begun work on the new routes approved by the Council for some of its lines in Montreal.

Rhode Island Company, Providence, R. I.—The contract between the towns of Glocester and Smithfield and the Rhode Island Company for an extension of its line from the present termination at Centerdale through these towns to Chepachet has been signed by all the interested parties and it is expected that work upon the new line will be begun at once.

Maryville-Knoxville Interurban Railway, Knoxville, Tenn.—This company, which proposes to build a 14-mile line from Maryville to Knoxville, Tenn., via Rockford, Little River and Vestal, will begin preliminary surveys at once. There will be a bridge 150 ft. long and others from 40 ft. to 50 ft. long. Officers: Morton Butler, Chicago, Ill., president; John F. Shea, Knoxville, vice-president; Knox Burger, treasurer; John M. Clark, Barryville, secretary. [E. R. J., July 26, '13.]

Nashville (Tenn.) Traction Company.—This company is seeking to amend its charter so as to add some lines and extensions to the already proposed route. The application for the amendment to the charter is signed by Walter O. Parmer, G. M. Hendrie, R. A. Alger, W. H. Muir and Henry Ledyard, directors. [E. R. J., April 19, '13.]

Cumberland Valley Interurban Railway, Nashville, Tenn.—This company will begin construction of its 80-mile track within the next six months. It will connect Nashville, Statesville, "The Hermitage," Smithville, Liberty and Sparta. Capital stock authorized, \$10,000. Officers: J. H. Cartwright, 410 Union Bank Building, Nashville, president; A. F. Richards, Sparta, vice-president; W. H. Mires, secretary and treasurer, and O. L. Omohundro, Nashville, chief engineer. [E. R. J., July 19, '13.]

Southern Traction Company, Dallas, Tex.—This company has completed its new steel bridge across the Brazos River, built for its Dallas-Waco interurban lines in Waco.

Guadalupe Traction Company, Seguin, Tex.—Surveys have been completed and grading has been begun by this company on its line between San Antonio and Austin, via Seguin and Lockhart. A. B. Axtell, chief engineer. [E. R. J., June 28, '13.]

Corpus Christi Street & Interurban Railway, Corpus Christi, Tex.—This company has purchased enough track material for paving, consisting of Lorain 6-in. 72-lb. steel rails, 7-ft. 90 per cent heart pine ties and General Electric 10-in. compression bonds.

Newell (Va.) Bridge & Street Railway Company.—It is said that this company will extend its lines to Wellsville.

Manufactures and Supplies

ROLLING STOCK

Billings (Mont.) Traction Company is said to be in the market for several cars.

Glendale & Eagle Rock Railway, Glendale, Cal., is in the market for three double-truck passenger cars.

Chicago, Ottawa & Peoria Railway, Peoria, Ill., is contemplating the purchase of three interurban cars.

Third Avenue Railroad, New York, N. Y., has ordered four storage battery snow sweepers from The J. G. Brill Company.

Utah Light & Railway Company, Salt Lake City, Utah, will change fifty-four more of its cars to the pay-as-you-enter type.

Corpus Christi Street & Interurban Railway, Corpus Christi, Tex., is in the market for one 28-ft. single-truck passenger car.

Sandwich, Windsor & Amherstburg Railway, Windsor, Ont., is in the market for two single-truck city cars and two double-truck interurban cars.

Connecticut Company, New Haven, Conn., has ordered from the Wason Manufacturing Company four 30-ft. 8-in. passenger cars mounted on Brill 27-MCB-1 trucks.

Illinois Traction System, Peoria, Ill., is contemplating the purchase of four city cars for the Decatur Railway & Light Company, Decatur, Ill., and four city cars for the Peoria (Ill.) Railway.

Cincinnati (Ohio) Traction Company, noted in the *ELECTRIC RAILWAY JOURNAL* of June 28, 1913, as expecting to purchase 100 cars, has ordered fifty of these cars from the Cincinnati Car Company.

Cleveland (Ohio) Railway, noted in the *ELECTRIC RAILWAY JOURNAL* of July 12, 1913, as having ordered fifty prepayment cars from the G. C. Kuhlman Car Company, has specified the following details for these cars:

Weight (car body only),	Curtain material... Pantasote
20,980 lb.	Fare boxes.....Cleveland
Bolster centers,	Hand brakes.....Dayton
length.....23 ft. 5½ in.	Heaters .....Smith
Length of body...35 ft. 5½ in.	Headlights .....Dayton
Length over vestibule.....40 ft. 4½ in.	Journal boxes....Symington
Width over sills... 8 ft. 2 in.	Motors.....4 West.
Width over all... 8 ft. 4 in.	Paint.....S. W. & Chicago
Height, rail to sills...33 3/16 in.	Sanders ....Nichols-Lintern
Sill to trolley base,	Sash fixtures.....Dayton
9 ft. 7¾ in.	Seats .....Brill
Body .....composite	Seating material....rattan
Interior trim.....cherry	Springs .....Brill
Headlining .....Galco	Step treads.....Mason
Roof.....plain arch	Trucks...Brill No. 27-FE-1
Underframe .....steel	Varnish.....Chicago and
Couplers .....O-B	Glidden outside; Wright's
Car trimmings ....Kuhlman	inside
Curtain fixtures,	Ventilators .....Scullin
Cur. Sup. Co.	Wheels .....National

TRADE NOTES

Blake Signal & Manufacturing Company, Boston, Mass., has moved its office from 246 Summer Street to 251 Causeway Street.

General Electric Company, Schenectady, N. Y., has appointed S. H. Boyer its district manager at St. Louis, Mo. Mr. Boyer was formerly district manager of the Chicago office of the company.

H. H. Althouse, New York, N. Y., who recently resigned as chief engineer of the Erie Railroad, has opened an office for consulting practice at 172 Fulton Street. Mr. Althouse will specialize in railway work.

St. Louis Magda Lamp Works, St. Louis, Mo., have appointed R. H. Henderson manager of the company, succeeding H. S. Black. Mr. Henderson was for a number of years works manager of the Westinghouse Lamp Company.

***Norton, Va.**—A trackless trolley system is to be built to cover an important section in the coal fields of western Virginia, according to a report from that section. J. G. Rossman and others, of New York, are in charge of the project. One proposed line will extend from Norton, Va., to Big Stone Gap, Va., and another from Norton to Coeborn, Va., distances of 12 and 14 miles respectively.

***Richmond, Va.**—Steps are being taken to perfect the organization of a company for the purpose of constructing an electric railway in Chesterfield County. The proposed line will begin at the intersection of Broad Rock Road and Hull Street, extended, and will parallel the road for a distance of 3 miles. The terminus will be at Falling Creek, where, it is said, an amusement resort will be established. It is proposed to capitalize the company at \$250,000, and the incorporation papers are now being drawn. John C. Robertson, Forest Hill, is at the head of the new company. Those who are actively behind the new company are Clarence Vaden, T. N. Cheatham, W. A. Horner, D. E. Goode, James Cox and W. J. Carter.

Oregon-Washington Railroad & Navigation Company, Seattle, Wash.—This company plans to build a railway from Argo to a connection with the electric line of the Puget Sound Traction, Light & Power Company at a point near Twelfth Avenue South and Bailey Street in Seattle. If the proposed line is not electrified, gasoline motor cars will be used.

Milwaukee Electric Railway & Light Company, Milwaukee, Wis.—The Milwaukee Electric Railway & Light Company has practically completed a three months' improvement policy, which has cost nearly \$1,000,000. Including regrading, paving, etc., the company has completed 123 city blocks of double-track rehabilitation. There are about 9 miles of track work still under construction. When completed, the company will have 39 miles of track.

SHOPS AND BUILDINGS

Glendale & Eagle Rock Railway, Glendale, Cal.—This company expects to build a new carhouse in Montrose within the next four months.

Connecticut Company, Norwich, Conn.—This company is preparing plans for a new freight station, 25 ft. x 40 ft., to be built in Danielson.

Paducah (Ky.) Traction Company.—This company is considering the erection of a brick repair shop in Paducah.

Houghton (Mich.) County Traction Company.—It is reported that this company will ask for bids for improvements to be made to its carhouse in West Hancock. The work will include new concrete floors and inspection pits to replace the wooden flooring and pits. The company will also lay 80-lb. rails from the main line into the carhouse.

Chambersburg, Greencastle & Waynesboro Street Railway, Waynesboro, Pa.—This company will erect a new carhouse in Rouzerville.

Seattle, Wash.—Daniel Huntington, city architect, is preparing plans for the construction of a two-story reinforced concrete carhouse and office building for the Municipal Street Railway. The building will cost approximately \$50,000, and will be located at Third Avenue West and Union Street.

POWER HOUSES AND SUBSTATIONS

Sioux City (Ia.) Service Company.—This company is building an addition to its power house in Sioux City. It has purchased two new boilers and stokers, a 3000-ft. air compressor and an eighteen-panel switchboard.

Manhattan City & Interurban Railway, Manhattan, Kan.—This company plans to build soon a new power house in Manhattan.

Houghton (Mich.) County Traction Company.—This company expects to remodel its substation at Laurium. An addition will also be built to the station.

Corpus Christi Street & Interurban Railway, Corpus Christi, Tex.—This company has purchased from the General Electric Company a 200-kw generator direct-connected to a tandem-compound Harrisburg engine, complete with switchboard. The company expects to enter the lighting field by Aug 15, 1913.

Graves Engineering Company, New York, N. Y., has been incorporated by C. A. Graves, of Brooklyn; C. N. Jones and F. B. Erwin, of New York. The company is capitalized at \$100,000 and proposes to do a mechanical and civil engineering and contracting business.

Rockwell Electric Company, Chicago, Ill., has been formed by Edwin R. Rockwell, formerly president of the Guarantee Electric Company, with offices in the First National Bank Building. The company will handle electrical machinery and offers its services for electrical engineering in all its branches.

Curtain Supply Company, Chicago, Ill., has received the curtain order for the 100 new cars of the Boston Elevated Railway now being built by the Jewett Car Company, and also the curtain order for the ten new cars of the Pittsburgh Railway being built by the McGuire-Cummings Manufacturing Company.

Standard Varnish Works, Chicago, Ill., have opened a branch office at 113 Front Street, San Francisco, Cal., where they will carry a large and complete stock of all their architectural specialties, including *Elastica No. 2*, *Elastica* floor varnish, *Satinette* white enamel and *Kleartone* stains. F. T. McHenry, who has represented the company on the Pacific Coast for many years, will be in full charge of this office.

Titan Copper Products Company, Inc., Buffalo, N. Y., maker of brass, bronze and aluminum castings, has been organized by Charles V. Slocum, who for the past six years has been engaged in introducing titanium to the steel and iron trade. The officers of the company are as follows: Charles V. Slocum, president; A. N. Slocum, vice-president; W. W. Slocum, treasurer, and Frank P. Lund, general superintendent.

Manhattan Electrical Supply Company, New York, N. Y., has purchased the business and plant of the Rock Island Battery Company, of Cincinnati, Ohio, and will take possession on Aug. 1, 1913. This move will not mean the discontinuance of the Rock Island dry battery, for this battery will be manufactured in addition to the Red Seal, Hi-Up, Blue Seal and Mesco batteries, which the company now manufactures.

American Engineering Company, Philadelphia, Pa., has recently received large orders for "Taylor" stokers, from many sources, including the New York, New Haven & Hartford Railroad, United Illuminating Company, National Quality Lamp Division of the General Electric Company, Interborough Rapid Transit Company, Elmira Water, Light & Railroad Company, Edison Electric Illuminating Company and the Detroit Edison Company.

National Tube Company, Pittsburgh, Pa., has announced that commencing Aug. 1, 1913, it will enter the electrical conduit field. The company has contracted with the National Metal Molding Company and the Safety-Armorite Conduit Company, both of Pittsburgh, Pa., to manufacture and sell this product as its agents under their various brands. The company has also decided to sell this product on the Pittsburgh basing discount plan in the same manner as all wrought pipe for other purposes has been sold for the past thirteen years.

Western Electric Company, New York, N. Y., has opened a new sales office at New Orleans, La., under the management of E. H. McFall. A warehouse, carrying a complete line of electrical supplies and telephone apparatus, is also being operated at New Orleans under the direction of J. S. Shaw, formerly associated with the company's Atlanta branch. P. E. Davidson and W. J. Whaley, also formerly at Atlanta, are assigned to the new offices. This territory covers all of Louisiana and Mississippi, Texas and Alabama and the Gulf Coast from Key West to Beaumont. A branch house has also been opened at New Haven under the management of T. L. Holmes and another at Providence, R. I., under the management of H. D. Wilcox.

Manning, Maxwell & Moore, Inc., New York, N. Y., together with their subsidiary companies, will move their general offices on or about Oct. 1 from 85-89 Liberty Street to the new Lewisohn Building, 113-119 West Fortieth Street. This change is being made to meet the demand for

a more convenient and central location, as well as larger space to handle material increases in their various lines, which cover electric traveling cranes, machine tools, engineering specialties, railway, machinists', engineers', factory and contractors' supplies. A large portion of this product is manufactured by their constituent companies, the Shaw Electric Crane Company, the Ashcroft Manufacturing Company, the Consolidated Safety Valve Company, the Hayden & Derby Manufacturing Company and the Hancock Inspirator Company. They will occupy the twentieth and twenty-first floors of the above-named building, giving them 28,000 sq. ft. of space. This space will be exclusively for offices and is almost double that at present occupied for offices on Liberty Street.

ADVERTISING LITERATURE

H. M. Bylesby & Company, Chicago, Ill., have issued Department Bulletin No. 6 on "The Efficiency Movement."

National Tube Company, Pittsburgh, Pa., has issued a small pamphlet entitled "Interesting Experiences with Kewanee Unions."

Sprague Electric Works, New York, N. Y., have issued Bulletin No. 246, superseding Nos. 235 and 310, which illustrates and describes motor-driven exhaust fan outfits for both direct and alternating current.

National Conduit & Cable Company, New York, N. Y., manufacturer of bare copper wire, weather-proof wires and cables for telephone, telegraph, electric light and power work, has issued a pamphlet taking up the copper situation in a general way.

American Steel & Wire Company, Chicago, Ill., has issued a small paper, to be inserted on page 24 of its new catalog entitled "Triangle Mesh Wire, Reinforced Concrete Pavements and Roadways," in order to correct a typographical error that appeared on this page.

Chicago Pneumatic Tool Company, Chicago, Ill., has issued Bulletins Nos. 34R and 43, which illustrate and describe respectively its "Chicago pneumatic" class L-SS and L-SB compressors (inclosed self-oiling types) and the "Rockford" railway motor cars.

Northey-Simmen Signal Company, Ltd., Indianapolis, Ind., has issued a catalog on the Simmen system of railway signaling and dispatching. The catalog contains a number of illustrations in regard to the installation of this system, with a full description of the same, and points out its many advantages.

Pyrene Manufacturing Company, New York, N. Y., has issued the *Pyrene Bulletin* for July, 1913, which contains several articles showing what great service these extinguishers have been in averting what might have been very serious fires. The bulletin also contains a list of some of the recent purchasers of Pyrene extinguishers.

U. S. Metal & Manufacturing Company, New York, N. Y., has issued a small folder on the "Lincoln" arc welder, for which it is general selling agent. The folder describes what the welder will do and also contains information on types and capacities for electric and steam railway work and work in steel foundries, boiler shops, mills, etc.

Hemingray Glass Company, Covington, Ky., has issued Catalog No. 28, which illustrates and describes its different types of glass insulators. On each page, under the view of the different types, is a line drawing giving the exact dimensions of the insulator above it and also containing other information in regard to the average weight of each insulator and the approximate weight per 1000 packed for shipment.

General Railway Signal Company, Rochester, N. Y., has recently issued Bulletin No. 114-B, completely illustrating and describing its train dispatchers' telephone selector system, which takes up in detail every phase of the subject, including the switchboard with motor generator and storage battery, dispatchers' key cabinet, selector and bell. The company has also issued Bulletin No. 129 describing its mechanical dwarf signal R. S. A. design, and also containing several views of the signal with numerous line drawings showing the signal with respect to R. S. A. clearance diagram, arrangement for wire connection, cross pipe connection, longitudinal pipe connection, etc.